

NOTICE: This document has been edited by Environmental Stewardship to omit materials not germane to its arguments in order to provide a document focused on surface water impacts and the findings of the ALJs related to that interest. By omitting some sections, the page and footnote numbering does not agree with the original document. Readers are referred to the original document for materials omitted and accurate citation of page and footnote numbering.



State Office of Administrative Hearings

Kristofer Monson
Chief Administrative Law Judge

March 31, 2020

Natasha J. Martin
Re Client: Lost Pines Groundwater Conservation District
Graves Dougherty Hearon & Moody, P.C.
401 Congress Ave., Suite 2200
Austin, TX 78701

VIA E-FILE TEXAS

RE: Docket No. 952-19-0705; Application of Lower Colorado River Authority for Operating and Transport Permits for Eight Wells in Bastrop County, Texas

Dear Ms. Martin:

Please find enclosed a Proposal for Decision in this case. It contains our recommendation and underlying rationale.

Exceptions and replies may be filed by any party in accordance with 1 TEX. ADMIN. CODE § 155.507(c), a SOAH rule which may be found at www.soah.state.tx.us.

Sincerely,

Handwritten signature of Ross Henderson in blue ink.

Ross Henderson
Administrative Law Judge

Handwritten signature of Rebecca S. Smith in black ink.

Rebecca S. Smith
Administrative Law Judge

RS/lc
Enclosure (including 2 CDs)

P.O. Box 13025 Austin, Texas 78711-3025 | 300 W. 15th Street Austin, Texas 78701
Phone: 512-475-4993 | Fax: 512-475-4994
www.soah.texas.gov

APPLICATION OF LOWER COLORADO § BEFORE THE STATE OFFICE
RIVER AUTHORITY FOR OPERATING §
AND TRANSPORT PERMITS FOR § OF
EIGHT WELLS IN BASTROP COUNTY, §
TEXAS § ADMINISTRATIVE HEARINGS

TABLE OF CONTENTS

I. INTRODUCTION 1

II. BACKGROUND AND PROCEDURAL HISTORY 2

 A. The Applications 2

 B. Permits in the District 4

 C. The Draft Operating Permits 6

 D. The Draft Transport Permits..... 8

III. APPLICABLE LAW 8

IV. ISSUES REGARDING OPERATING PERMITS11

 A. Unreasonable Effects on Existing Groundwater Resources or Permit Holders 12

 1. Whose Use Should Be Considered..... 13

 2. The Definition of “Unreasonably Affect” 14

 3. Which Groundwater Availability Model Should Be Used..... 16

 4. The Modeling Does Not Show Unreasonable Effects 18

 B. Unreasonable Effects on Existing Surface Water Resources 22

 1. Environmental Stewardship’s Arguments 23

 2. GM’s Arguments..... 25

 3. LCRA’s Arguments 26

 4. ALJs’ Analysis..... 29

 C. Well Drawdown and Interference 32

 1. Parties’ Evidence and Arguments 32

 2. ALJs’ Analysis..... 34

 D. Management of Total Groundwater Production on a Long-Term Basis to Achieve
Desired Future Condition 35

 1. The Parties’ Arguments 36

 2. ALJs’ Analysis..... 37

E. Special Conditions from Previous Permits	37
1. Parties' Arguments	37
2. ALJs' Analysis.....	39
F. Separate Issues Raised by the Brown Landowners	40
1. Was the District Required to Consider Historic Use?	40
2. Were the Applications Administratively Complete?.....	41
3. Analysis Based on Benefit in the District.....	42
G. Phasing	42
1. Binding Contracts.....	43
2. The Phasing Formula	48
3. Concerns About Local Impacts and Input	49
H. Monitoring Well Agreement	51
1. Details of the Monitoring Well Agreement as It Relates to Groundwater.....	51
2. Parties' Arguments	52
3. ALJs' Analysis.....	53
4. Monitoring Effects on Surface Water Resources	54
I. 36-Hour Pump Test	55
J. Review of LCRA's Designs and Specifications	56
K. Place and Type of Use	57
L. Mitigation	58
IV. ISSUES RELATING TO THE TRANSPORT PERMITS	59
A. Whether LCRA's Transport Permit Applications Meet the Requirements of Section 6 of the District's Rules and Texas Water Code § 36.122(f)	59
B. Draft Transport Permit Special Provision Relating to Discharge of Groundwater into a Surface Watercourse	60
1. GM's Arguments.....	61
2. LCRA's Arguments	63
3. ALJs' Analysis.....	65
V. CONCLUSION	68
VI. FINDINGS OF FACT	69
VII. CONCLUSIONS OF LAW	77

APPLICATION OF LOWER COLORADO RIVER AUTHORITY FOR OPERATING AND TRANSPORT PERMITS FOR EIGHT WELLS IN BASTROP COUNTY, TEXAS §
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BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

PROPOSAL FOR DECISION

I. INTRODUCTION

The Lower Colorado River Authority (LCRA) submitted eight applications (Applications) to the Lost Pines Groundwater Conservation District (District) seeking authorization to withdraw 25,000 acre-feet of water per year from eight wells in the Simsboro Formation in Bastrop County, Texas, and to transport that water to Travis, Lee, and Bastrop Counties. The District's General Manager (GM) issued Draft Operating Permits and Draft Transport Permits, which contain provisions that LCRA and various other parties object to. At the close of briefing, the GM proposed additional changes to the Draft Operating Permits (Revised Draft Operating Permits). **The Administrative Law Judges (ALJs) recommend that the Revised Draft Operating Permits and the Draft Transport Permits be issued with the following changes:** (1) changes to the requirements to enter a well monitoring agreement, including the deadline to enter into the agreement and removal of the requirement that violation of the agreement is a permit violation; **(2) an amendment to the definition of "monitoring well system" to require that effects on surface water be monitored;** (3) the removal of the requirement that LCRA present end-user contracts or binding commitments; (4) **an amendment to Revised Draft Operating Permit Special Condition 5 to clarify that affected landowners may participate in the permit renewal process, including the determination of whether an amendment is necessary;** and (5) the removal from the Draft Transport Permits of the Special Provision prohibiting discharge into a surface watercourse.

II. BACKGROUND AND PROCEDURAL HISTORY

A. The Applications

LCRA is a conservation and reclamation district established by the Texas Legislature in 1934 that serves as a regional water supplier within its 35-county service area.¹ Although LCRA primarily manages and supplies surface water, its Executive Vice President for Water, John Hofmann, testified that LCRA's responsibility is not limited to surface water.² As part of a goal to diversify its water supply in order to "drought proof" it, LCRA began a groundwater project in the aquifer regulated by the District.³

As part of that project, on February 1, 2018, LCRA filed the Applications for operating and transport permits with the District. The application for operating permits sought authorization to withdraw a total of 25,000 acre-feet per year of groundwater from the Simsboro Formation based on groundwater rights LCRA acquired in 2015. These groundwater rights were beneath the Griffith League Ranch, an approximately 4,847-acre property owned by the Capitol Area Council, Inc. of the Boy Scouts of America. The water was to be used for all beneficial uses authorized in chapter 36 of the Texas Water Code. On February 21, 2018, LCRA resubmitted the Applications on different forms.

On August 20, 2018, the District's GM, James Totten, notified LCRA by letter that its Applications were administratively complete and that the Applications would be set for a public hearing. The letter also provided LCRA with the GM's Draft Operating Permits and Draft Transport Permits (collectively, Draft Permits.).

Following notice, the District held a public hearing on the Applications on September 26, 2018, and voted to contract with the State Office of Administrative Hearings

¹ LCRA Ex. 1 (Hofmann direct) at 7.

² LCRA Ex. 1 (Hofmann direct) at 8.

³ LCRA Ex. 1 (Hofmann direct) at 9.

(SOAH) to conduct a hearing on the Applications. Several Protestants disagreed with the issuance of the Draft Permits, and LCRA also challenged some of the Draft Transport Permits' provisions.

On December 18, 2018, SOAH ALJs Michael O'Malley and Laura Valdez held a prehearing conference in Bastrop, Texas. At the prehearing conference, the ALJs admitted the following as parties: LCRA, the District, Aqua Water Supply Corporation (Aqua), Environmental Stewardship, City of Elgin (Elgin), and Recharge Water, LP (Recharge). A group of landowners represented by a single attorney was also admitted, and will be referred to as the Brown Landowners. Several self-represented litigants were also named as parties. Following a challenge to party status, many of the self-represented litigants, and some of the Brown Landowners, were determined not to have a justiciable interest and were struck as parties.⁴ The remaining self-represented litigants were Peggy Jo and Marshall Hilburn, Walter Winslett, JC Jensen, Elvis and Roxanne Hernandez, Verna L. Dement, Catherine and Charles L. White, and Richard Martinez. Mr. Jensen and Mr. Martinez withdrew their protests, as did several of the Brown Landowners.

The hearing on the merits was held October 15-22, 2019, before ALJs Ross Henderson and Rebecca S. Smith. The first four days of the hearing were held in Bastrop, Texas, and the last two took place at SOAH's hearing facility in Austin, Texas. Mr. and Mrs. Hernandez were the only self-represented litigants who prefiled testimony and participated in the hearing on the merits. The record closed on January 31, 2020, with the filing of reply briefs.

In its original Applications, LCRA stated that the water would be used throughout its 35-county water service area. In its testimony, and at hearing, LCRA amended its request to only seek to use the water in Bastrop, Lee, and Travis Counties.

As an attachment to his reply brief, the GM made several changes to the Draft Operating Permits. Some of these changes are substantive; some are not. No party objected to these changes

⁴ SOAH Order No. 5.

or asked to file briefing in response to these changes. The ALJs will address these changes and will refer to the GM's January 31, 2020 version of the permits as the Revised Draft Operating Permits.⁵

B. Permits in the District

The groundwater regulated by the District is in the Simsboro Formation, part of the larger Carrizo-Wilcox aquifer.⁶ Overlaying the Simsboro is the Calvert Bluff, and the Hooper Formation underlies the Simsboro Formation.⁷ The Simsboro Formation "is often used for large-scale public water supply production."⁸ However, there is no history of large-volume pumping within the District.⁹

The Simsboro Formation and the other aquifer units dip toward the Gulf of Mexico, and thus are deeper toward the east and southeast in Bastrop County.¹⁰ The deeper portion of the Simsboro is referred to as the downdip. There are also shallower outcrop areas.

The parties challenging the Draft Permits either have wells or permits to produce water from the area. Aqua, a retail public utility with a service area in Bastrop, Caldwell, Fayette, Lee, Travis, and Williamson Counties, has a permit from the District authorizing the production of 23,627 acre-feet per year from 15 wells in the Simsboro Formation.¹¹ Twelve of those wells are in two well fields near the shallow outcrop of the Simsboro. Aqua's three other wells are located on the south side of Highway 290, in the deeper downdip portion of the aquifer.¹²

⁵ The Revised Draft Permits reflect the second amendment the GM made to the Draft Operating Permits.

⁶ Recharge Ex. B (Thornhill direct) at 3.

⁷ Aqua Ex. 4 (Keester direct) at 7.

⁸ Aqua Ex. 4 (Keester direct) at 7.

⁹ GM Ex. 11 (Hutchison direct) at 16.

¹⁰ Aqua Ex. 4 (Keester direct) at 7.

¹¹ Aqua Ex. 1 (McMurry direct) at 2; Aqua Ex. 4 (Keester direct) at 8.

¹² Aqua Ex. 4 (Keester direct) at 8.

Elgin has a retail public utility that provides retail water utility service within its certificated service area.¹³ The city, which is located in the greater Austin area, expects continued and rapid growth.¹⁴ Elgin has four wells that are all partially or wholly completed within the Simsboro Formation.¹⁵ Two of Elgin's wells are in the outcrop area of the Simsboro Formation, with the wells screened partially in both the Simsboro and Hooper Formations.¹⁶ Its other two wells are located in the downdip and are entirely screened within the Simsboro Formation.¹⁷

Recharge, formerly known as End Op, L.P., has permits authorizing the production of 46,000 acre-feet from 14 wells, to be phased in, which it acquired following years of litigation and a settlement.¹⁸ Seven of the permitted wells are to be located in Bastrop County, and seven are to be located in Lee County.¹⁹ Some of Recharge's proposed wells in Bastrop County are the closest wells to LCRA's proposed pumping. Many of the parties currently opposed to LCRA's permit application also opposed Recharge's application. As part of its settlement of the underlying contested case about its application, Recharge agreed to create a mitigation fund to pay well owners. Recharge has not yet drilled any wells, but is required under the terms of its permit to complete four wells in Lee County before drilling any wells in Bastrop County, a term that was added to its permit, but was not part of its settlement. Recharge did not appeal the inclusion of this term. Under the permit (and settlement terms), Recharge's mitigation obligations start once it begins pumping in Lee County.²⁰

The other large permits in the District belong to Forestar USA Real Estate Group, Inc. (Forestar), which is authorized to pump 28,500 acre-feet per year in Lee County, subject to

¹³ Elgin Ex. 1 (Prinz direct) at 2.

¹⁴ Elgin Ex. 1 (Prinz direct) at 2.

¹⁵ Elgin Ex. 2 (Perry direct) at 3.

¹⁶ Elgin Ex. 6 (Keester direct) at 7.

¹⁷ Elgin Ex. 6 (Keester direct) at 8.

¹⁸ Recharge Ex. 1.

¹⁹ Recharge Ex. B (Thornhill direct) at 19.

²⁰ Recharge Ex. B (Thornhill direct) at 56.

phasing,²¹ and the City of Bastrop (Bastrop), which is authorized to pump 2,000 acre-feet per year.²² Bastrop's application was the subject of a contested case hearing. The Proposal for Decision (PFD) in that contested case was officially noticed in this case.²³ The Brown Landowners' and the Hernandezes' wells are exempt from District regulation. The Hernandezes' well is in the Calvert Bluff Formation, which overlays the Simsboro. The Brown Landowners' wells are scattered around the area.²⁴

C. The Draft Operating Permits -OMITTED

D. The Draft Transport Permits - OMITTED

III. APPLICABLE LAW

In Texas, a landowner owns the groundwater below the surface of his or her land as real property and is entitled to drill for and produce that groundwater, subject to a groundwater conservation district's well-spacing and production restrictions, so long as the drilling and production does not cause waste or malicious drainage of other property, or negligently cause

²⁷ The Draft Operating Permits were ambiguous about whether a pump test was required before the operation of each well or before the operation of the first well. The change in the Revised Draft Operating Permits appears to be an uncontroversial clarification of the earlier special condition.

subsidence.²⁸ Groundwater conservation districts, which are described as the state's preferred method of groundwater management, have the following obligations:

to protect property rights, balance the conservation and development of groundwater to meet the needs of this state, and use the best available science in the conservation and development of groundwater through rules developed, adopted, and promulgated by a district in accordance with [chapter 36].²⁹

Chapter 36 of the Texas Water Code (Code) outlines the process by which landowners obtain the right to produce their groundwater within groundwater conservation districts. Under chapter 36, a groundwater conservation district, such as the District, "shall require a permit for the drilling, equipping, operating, or completing of wells,"³⁰ except for exempt wells.³¹

Before granting or denying an operating permit, a groundwater conservation district must consider whether:

- (1) the application conforms to the requirements prescribed by [Code chapter 36] and is accompanied by the prescribed fees;
- (2) the proposed use of water unreasonably affects existing groundwater and surface water resources or existing permit holders;
- (3) the proposed use of water is dedicated to any beneficial use;
- (4) the proposed use of water is consistent with the district's approved management plan;
- (5) if the well will be located in the Hill Country Priority Groundwater Management Area, the proposed use of water from the well is wholly or partly to provide water to a pond, lake, or reservoir to enhance the appearance of the landscape;

²⁸ Tex. Water Code § 36.002(a), (b), (d).

²⁹ Tex. Water Code § 36.0015(b).

³⁰ Tex. Water Code § 36.113(a).

³¹ Exempt wells are wells used solely for domestic use or for providing water for livestock or poultry and that are located on a tract of land larger than 10 acres and cannot produce more than 25,000 gallons of groundwater a day. Tex. Water Code § 36.117(b)(1). Certain wells related to oil rigs and mining are also exempt. Tex. Water Code § 36.117(b)(2),(3).

- (6) the applicant has agreed to avoid waste and achieve water conservation; and
- (7) the applicant has agreed that reasonable diligence will be used to protect groundwater quality and that the applicant will follow well plugging guidelines at the time of well closure.³²

The District has adopted similar rules for permit applications.³³ In deciding whether to grant an application, approve an application with terms other than those requested, or deny the application, the District's rules require it to consider, in addition to the seven factors set out above, the following:

- (8) whether granting the application is consistent with the District's duty to manage total groundwater production on a long-term basis to achieve an applicable Desired Future Condition, considering:
 - (a) the Modeled Available Groundwater determined by the [Texas Water Development Board (TWDB)] executive administrator;
 - (b) the TWDB executive administrator's estimate of the current and projected amount of groundwater produced under exemptions granted by District Rules and Texas Water Code § 36.117;
 - (c) the amount of groundwater authorized under permits previously issued by the District;
 - (d) a reasonable estimate of the amount of groundwater that is actually produced under permits issued by the District; and
 - (e) yearly precipitation and production patterns.
- (9) whether the conditions and limitations in the Operating Permit prevent [w]aste, achieve water conservation, minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, or lessen interference between wells; [and]
- (10) whether the applicant has a history of non-compliance with District Rules and chapter 36 of the Texas Water Code, including any record of

³² Tex. Water Code § 36.113(d). Identical provisions are found in Rule 5.2.D of the District's rules.

³³ The District's Rules were admitted into evidence as GM Ex. 9, and are also available at <https://www.lostpineswater.org/DocumentCenter/View/127/LPGCD-Rules---Adopted-10-16-19> (last visited March 23, 2020).

enforcement actions against the applicant for violation of District Rules or chapter 36.³⁴

Groundwater conservation districts may adopt rules regulating the spacing of wells and the production of groundwater.³⁵ When promulgating rules that limit groundwater production, a groundwater conservation district “may preserve historic or existing use before the effective date of the rules,” subject to the district’s management plan.³⁶

Under chapter 36, groundwater conservation districts are not required to adopt rules that provide for correlative rights—in other words, allocating to each landowner a proportionate share of available groundwater for production from the aquifer based on the number of acres the landowner owns.³⁷

IV. ISSUES REGARDING OPERATING PERMITS

Of the Protestants, Elgin, Environmental Stewardship, and Brown Landowners argue that the Applications should be denied, Recharge, Aqua, and Environmental Stewardship argue that the operating permits should be limited to 8,000 acre-feet per year, which is also the limit in the first phase of pumping (Phase II) under the Draft Permits. Elgin suggests the limit, if the permits are issued, should be 7,000 acre-feet per year; for Brown Landowners, that total is 6,000 acre-feet. The Hernandezes argue that the permit limit should be 10,000 acre-feet per year. Recharge, Elgin, and the Mr. Hernandez want the limits to be expressly tied to other factors.

In making their arguments, the parties focus on the following factors set out in Code chapter 36 and the District’s rules:

- Whether the proposed use of water unreasonably affects existing groundwater water resources or existing permit holders;

³⁴ District Rule 5.2.D.

³⁵ Tex. Water Code § 36.116(a).

³⁶ Tex. Water Code § 36.116(b).

³⁷ Tex. Water Code § 36.002(d)(3).

- Whether the proposed use of water unreasonably affects existing surface water resources or existing permit holders;
- Whether the conditions and limitations in the Operating Permit minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, or lessen interference between wells; and
- Whether granting the application is consistent with the District's duty to manage total groundwater production on a long-term basis to achieve an applicable Desired Future Condition.

The parties generally do not address the remaining factors, which will be set out in the findings of fact and conclusions of law, but not discussed further in this PFD.

A. Unreasonable Effects on Existing Groundwater Resources or Permit Holders – INTRODUCTION OMITTED

- 1. Whose Use Should Be Considered -- OMITTED**
- 2. The Definition of “Unreasonably Affect”**
 - a. Parties' Evidence and Arguments -- OMITTED**
- 3. Which Groundwater Availability Model Should Be Used**
 - a. Parties' Evidence and Arguments**

What effects are predicted from LCRA's pumping depends on which model is used. Much of the testimony at hearing involved issues relating to the GAM, which is “a computer-based, three-dimensional numerical groundwater flow model that is designed to simulate the dynamics of the groundwater flow for a specific area in Texas.”⁴⁴ GAMs for all major and most minor aquifers were developed by the Texas Water Development Board (TWDB) as part of state water planning.

In 2004, the Central Queen City-Sparta GAM was developed and was then used by the District. In 2018, the TWDB updated the model, which is now called the Central Carrizo-Wilcox GAM.⁴⁵ For purposes of this Proposal for Decision, the 2004 GAM will be called the “Old GAM,” and the 2018 GAM will be called the “New GAM.”

The GM's expert witness Dr. William Hutchison described both GAMs as using a three-dimensional grid of cells, with rows, columns, and layers to represent the structure of an aquifer. The rows and columns represent the area of the aquifers, such as would be seen on a map, and the layers represent the individual aquifers and intervening low-permeability units.

Dr. Hutchison described how the GAM works:

Boundaries of the aquifer and the thicknesses and depths of the layers are represented in the grid based on the best information available to the modelers. Properties of the aquifer—i.e., numerical values such as horizontal and vertical hydraulic conductivity—that control how water moves and how water levels change in response to stresses to the aquifer—e.g., pumping from wells—are applied to each model cell. Processes that add and subtract water to and from the model, including recharge to the various aquifers, movement in and out of the model from areas outside of the model boundaries, discharge to streams and springs, evaporation and transpiration (i.e., uptake of water from plants), and

⁴⁴ GM Ex. 11 (Hutchison direct) at 10.

⁴⁵ GM Ex. 11 (Hutchison direct) at 10.

pumping from wells is also included in a separate set of text files with one text file representing each process, e.g., a wel file (or “welfile”) for the well pumping, a .rch file for the recharge, etc. In model terminology, the processes that add and subtract water from the model domain are called “stresses.” The GAMS are “transient” models, in that they simulate changes throughout time, e.g., through an historical period and throughout the multi-decadal planning period. Time in the model is simulated by a set of stress periods. In the case of the Old GAM and New GAM, each stress period represents a single year.

The actual functions of the aquifer—i.e., the movement of water through the aquifer, changes in water stored within the aquifer layers, and changes in water levels throughout time — are simulated by a set of equations that basically calculate the hydraulic head, i.e. water level, in each model cell in each stress period. Calculating hydraulic head is specifically what the GAMS do, and the changes in hydraulic head from one cell to the next, and from one stress period to the next, can then be used to determine fluxes of water throughout the model and changes in hydraulic head, i.e., drawdown, throughout time.⁴⁶

Several changes were made between the Old GAM and the New GAM. Among those changes is the grid cell. In the Old GAM, the grid cells are consistently spaced at one square mile. In contrast, the New GAM has a variable grid that reduces the cell size in the area of selected surface water features. The largest cell size in the New GAM is one square mile (the same as the Old GAM), whereas the smallest size is 40 acres.⁴⁷ Although these changes were made to the grid cell sizes, the grid cell size for the area around LCRA’s proposed production area remains one square mile.

GM witness Dr. Hutchison testified that the calibration of the New GAM is better than the Old GAM in Bastrop County, and that impacts from production in Bastrop County may occur in Lee County.⁴⁸ LCRA’s expert witnesses Van Kelly and Dr. Steven Young, along with Recharge expert witness Michael Thornhill, also agreed that the New GAM was an improvement over the Old GAM.⁴⁹ These witnesses all agreed that the Old GAM did not accurately predict drawdown

⁴⁶ GM Ex. 11 (Hutchison direct) at 11.

⁴⁷ GM Ex. 11 (Hutchison direct) at 13.

⁴⁸ GM Ex. 11 (Hutchison direct) at 11. *See also* Tr. at 1489 (“given all those factors, [the New GAM] was a better model.”).

⁴⁹ Recharge Ex. B (Thornhill direct) at 18.

within the District. When LCRA filed its application, the Old GAM was in place, and it was the model the GM used in analyzing the Application. Since that time, both the GM's and LCRA's experts have analyzed the application using the New GAM.

b. ALJs' Analysis

Based on the overwhelming consensus of the evidence, the ALJs find that the New GAM, as opposed to the Old GAM, is the better model to use to predict the effect of LCRA's pumping. The question then becomes whether LCRA's modeling, using the New GAM, was sufficient to show that its use would not cause unreasonable effects on groundwater or existing wells.

4. The Modeling Does Not Show Unreasonable Effects

⁵⁰ Mr. Keester testified that he redid his analysis using the new GAM, but did not provide the results of that redone analysis. Aqua Ex. 4 (Keester direct) at 12.

⁵¹ Tr. at 747-48.

⁵² Tr. at 747-48.

⁵³ Tr. at 753.

- a. Parties' Evidence and Arguments -- OMITTED**
- b. ALJs' Analysis**

The ALJs agree with Dr. Young's criticism of Mr. Keester's approach. The Old GAM has been shown to be less accurate, and an analysis based on that will not suffice. Yet, it is not enough that LCRA merely criticize the other experts, however. As the party seeking a permit, it does have a burden of proof. The parties opposed to the Applications argue that LCRA has failed to present sufficient evidence on the effects its pumping would have on existing groundwater resources and permit holders. The ALJs agree that LCRA's direct case is light on detail about other parties' wells; however, LCRA presented a more targeted analysis in its rebuttal case.

The ALJs conclude that the analysis conducted by Dr. Young is sufficient to allow the District to determine whether LCRA's proposed use would unreasonably affect existing groundwater resources or permit holders. Given the modeling, the proposed pumping would not cause unreasonable effects on existing groundwater resources or permit holders. The fact that real-world effects can differ from predicted modeling is addressed by the monitoring and phasing aspects of the Draft Permits, which will be addressed below.

B. Unreasonable Effects on Existing Surface Water Resources

As part of its review of LCRA's permit requests, the District must consider whether the proposed use of water unreasonably affects surface water resources.⁷² Three parties, LCRA, the GM, and Environmental Stewardship, provided evidence and testimony relating to the issue. All three found that LCRA's requested pumping may have some impact on surface water resources. Environmental Stewardship's and the GM's analysis both show potential loss of surface water to the groundwater formations in Bastrop County by around 2050. Environmental Stewardship

⁷¹ LCRA Ex. 55 (Young rebuttal) at 25.

⁷² Tex. Water Code § 36.113(d)(2); District Rule 5.2.D(2).

argues that the impacts to surface water resources will be unreasonable after the first 8,000 acre-feet of pumping. However, LCRA counters that unreasonable impacts are not defined, and that under LCRA expert's definition, the impacts would not be considered unreasonable. The GM maintains that impacts cannot accurately be determined until high-volume pumping in the District has begun—after the first phase of pumping (Phase II) is reached—and that is the purpose of having phases.

The ALJs find that LCRA's proposed pumping, standing alone, will not cause unreasonable impacts to surface water resources, but that certain changes to the Revised Draft Operating Permits are required for the District to monitor potential impacts to surface water resources. EMPHASIS ADDED.

1. Environmental Stewardship's Arguments

Environmental Stewardship posits that the best available science for evaluating impacts to surface water resources is the GAM.⁷³ Environmental Stewardship elaborates that while impacts cannot be quantified with specificity due to limitations of the GAM, all three parties that submitted information regarding this factor found that modeling LCRA's proposed withdrawals using the GAM showed impacts to the surface water system.⁷⁴ **Environmental Stewardship estimated that LCRA's pumping would result in a loss of .5% of average annual flows to the Colorado River and that during periods of low flows (Nov. 1963 and Mar. 1964) the amount lost would be around 8%.⁷⁵ Environmental Stewardship and the GM both used the GAM to analyze the cumulative impacts of LCRA's permits combined with all other users in Bastrop County (the Base Case) and both show that District-wide proposed pumping of groundwater may result in loss of surface water to the groundwater formations in Bastrop County by around 2050.**⁷⁶ EMPHASIS ADDED

⁷³ Environmental Stewardship's Closing Arguments (Environmental Stewardship's Closing) at 5.

⁷⁴ Environmental Stewardship's Closing at 5.

⁷⁵ Environmental Stewardship Ex. 100 (Rice direct) at 10.

⁷⁶ Environmental Stewardship's Closing at 5.

Environmental Stewardship argues that LCRA's analysis improperly excludes the cumulative impacts and looks only at LCRA's impacts to surface water.⁷⁷ Environmental Stewardship argues that ignoring cumulative impacts ignores the reality of what the total impacts to the surface water resource will be, and that considering the cumulative impacts is the only way for the District to consider the application in the context of the consistency with the District Management Plan as required by District Rule 5.2.D.(4).⁷⁸ Further, Environmental Stewardship disagrees with any reliance on the *City of Bastrop* PFD, which considered only Bastrop's impacts and not cumulative impacts because that permit was for a much smaller quantity of water (2,000 acre-feet).⁷⁹ Environmental Stewardship also takes issue with LCRA's decision not to use the "shallow flow zone" feature or the latest pumping file when running models using the New GAM.⁸⁰

Environmental Stewardship's expert Joseph Trungale used the GAM projections of its other expert, George Rice,⁸¹ which show loss of surface water to the groundwater formations in Bastrop County.⁸² He used the surface water availability model (WAM) to examine what the impacts of the estimated losses of surface water would be to the reliability of senior water rights and to instream flow conditions in the Colorado River.⁸³ **Based on the WAM modeling, he concluded that LCRA's pumping and resultant reduction in surface water flows would unreasonably affect existing surface water rights holders and the environment.**⁸⁴ EMPHASIS ADDED

Environmental Stewardship urges denial of the permits, arguing that the GM's Draft Operating Permits ignore the best available science (the GM's GAM analysis), which shows that

⁷⁷ Environmental Stewardship's Closing at 5.

⁷⁸ Environmental Stewardship's Reply to Closing Arguments (Environmental Stewardship's Reply) at 3.

⁷⁹ Environmental Stewardship's Reply at 2-3.

⁸⁰ Environmental Stewardship's Reply at 6.

⁸¹ Mr. Rice was also retained by the Brown Landowners.

⁸² Environmental Stewardship's Reply at 8.

⁸³ Environmental Stewardship's Reply at 8.

⁸⁴ Environmental Stewardship's Closing at 5.

the permits will unreasonably affect surface water resources in around 2050.⁸⁵ Environmental Stewardship argues that LCRA should not receive permits for even a portion of its total request, because it must meet the burden to prove the full amount of water requested, or receive none at all.⁸⁶ In the alternative, Environmental Stewardship requests the permits (which include phases), to require District Board approval of any GM recommendation for LCRA to proceed past the second phase, include provisions for notice and an opportunity for protestants to have a hearing on any decisions of the District.⁸⁷ Environmental Stewardship also requests that the Draft Operating Permits include requirements for LCRA to enter into a special surface/groundwater monitoring network agreement separate from the GM proposed Monitoring Well Agreement. The new surface/groundwater monitoring network agreement would provide data to the GM and the District in deciding whether to allow LCRA to proceed past Phase II.⁸⁸ Lastly, Environmental Stewardship suggests that LCRA's permits include requirements that LCRA implement a work plan set forth in a report conducted by LCRA witness Dr. Young which he had previously developed for the area.⁸⁹

2. GM's Arguments

Dr. Hutchison, the GM's expert, used the GAM to evaluate impacts to surface water resources.⁹⁰ The GM argues that the GAM is the best available science for conducting such evaluations and that expert model runs made by Dr. Hutchison using the New GAM indicate that pumping with the Base Case for the District will potentially reduce groundwater discharge to surface water.⁹¹ Further, adding LCRA's proposed withdrawals to the Base Case could result in a condition where the groundwater would be recharged by surface water in the Colorado River

⁸⁵ Environmental Stewardship's Closing at 5.

⁸⁶ Environmental Stewardship's Reply at 14.

⁸⁷ Environmental Stewardship's Reply at 13-14.

⁸⁸ Environmental Stewardship's Reply at 13-14.

⁸⁹ Environmental Stewardship's Reply; Environmental Stewardship Ex. 301.

⁹⁰ GM Ex. 11 (Hutchison direct) at 18.

⁹¹ GM Ex. 11 (Hutchison direct) at 18.

and its tributaries in Bastrop County.⁹² **The GM agrees with Environmental Stewardship's assessment that under the modeling assumptions made by Dr. Hutchison and Environmental Stewardship expert Rice, the Colorado River could go from gaining to a losing stream by 2050.⁹³ Dr. Hutchison's GAM model runs show that half of LCRA's proposed pumping could be sourced from surface water after 2050.⁹⁴** EMPHASIS ADDED

However, the GM argues that the GAMs (both the Old and New GAM) are limited as a predictive tool by the lack of high volume pumping data in the District and should not be relied upon to make accurate quantifications of impacts.⁹⁵ **The GM argues that the only conclusion to be made is that the GAM shows that surface water impacts from LCRA's and all other District users' potential pumping are possible.** The GM is not opposed to including surface water monitoring in the well monitoring agreement with LCRA.⁹⁶ The GM concludes that the permits can be protective of surface water by including surface water monitoring in the well monitoring agreement with LCRA and by using the phased approach to permitting.⁹⁷ Further, the GM states that the Revised Draft Operating Permits' Special Condition 11 allows district-wide curtailment in the event of unreasonable impacts to surface water resources in the future.⁹⁸ EMPHASIS ADDED

3. LCRA's Arguments

LCRA states that there is not specific guidance in State law or District Rules on the means by which a groundwater district should determine whether proposed permits will unreasonably

⁹² GM Ex. 13.

⁹³ GM's Closing Brief (GM's Closing) at 30. A gaining stream is one that receives water from an aquifer. A losing stream is the reverse; in other words, where water from the stream flows into the aquifer. Environmental Stewardship Ex. 100 (Rice direct) at 8.

⁹⁴ GM Ex. 13.

⁹⁵ GM's Closing at 30.

⁹⁶ GM's Closing at 31.

⁹⁷ GM's Closing at 30.

⁹⁸ GM's Closing at 30-31.

affect surface water resources.⁹⁹ Therefore, LCRA relies upon the conclusions of its witness, Dr. Young. Based upon his expertise as a hydrogeologist and environmental scientist, Dr. Young suggests impacts to surface water resources are only unreasonable if LCRA's pumping, standing alone without considering the contributing pumping of others, will cause (1) drawdown that results in capture of underflow; or (2) cause a change in the hydraulic gradient between the water level in the stream and the water level in an adjacent shallow groundwater flow that causes a persistent and substantial flow from surface water to the groundwater system.¹⁰⁰ In its analysis using the GAM model, LCRA estimates the drawdown resulting solely from LCRA's pumping to be about .3% of annual average flow of the Colorado River near Bastrop (with annual average flow of about 1.4 million acre-feet per year). With this predicted amount of drawdown being a relatively small portion of the total annual flow, Dr. Young concludes that neither of his identified unreasonable condition are possible.¹⁰¹

LCRA is critical of Environmental Stewardship's approach, and the validity of Environmental Stewardship witness Mr. Trungale's findings in particular.¹⁰² LCRA argues that Environmental Stewardship's overly stringent approach has not been adopted in this District, or any other, and should be rejected.¹⁰³

Regarding Environmental Stewardship's use of the GAM to estimate the impact of LCRA's proposed pumping on surface water resources, LCRA argues that Environmental Stewardship's inquiry improperly evaluated LCRA's proposed use in combination with all other groundwater production authorized by the District, instead of the impact of LCRA's use standing alone because Code § 36.113(d)(2) and District Rule 5.2.D(2) refer to only the unreasonable impacts caused by the "proposed use."¹⁰⁴ LCRA also maintains that Environmental Stewardship's

⁹⁹ LCRA's Post-Hearing Closing Arguments (LCRA's Closing) at 30.

¹⁰⁰ LCRA's Closing at 30-31.

¹⁰¹ LCRA's Closing at 30-32.

¹⁰² LCRA's Post-Hearing Reply to Closing Arguments (LCRA's Reply) at 32-44.

¹⁰³ LCRA's Reply at 32-34.

¹⁰⁴ LCRA's Reply at 33.

approach is inherently flawed because Environmental Stewardship witness Mr. Rice's analysis goes beyond the limited predictive capabilities of the GAM to model impacts by making oversimplified and incorrect assumptions.¹⁰⁵ LCRA asserts that the GAM cannot accurately capture the complexities and variabilities of river conditions and bank storage, specifically, because: (1) the GAM is an annual average condition and analysis of surface-groundwater interactions requires timesteps of hours or days; and (2) infiltration and unsaturated flows in the alluvium are not represented in the GAM. LCRA lists assumptions made by Mr. Rice that LCRA alleges appear to be designed to overstate the potential impacts of pumping including: (1) assuming that LCRA (and only LCRA) will pump at maximum rates every year for 50 years; (2) attributing all losses to LCRA even though his model shows losses prior to LCRA pumping; (3) including other pumpers besides LCRA; (4) omitting critical parts of the alluvium from a segment of the Colorado River that shows a net gain of water through 2070; and (5) adjusting pumping at LCRA's Lost Pines Power Park up to permitted limits without making similar adjustments to other users.¹⁰⁶ LCRA argues that the flaws of the modeling are demonstrated by the fact that the modeling shows levels of flow in certain tributaries that historical records indicate have not occurred even under natural conditions.¹⁰⁷

LCRA believes that Mr. Trungale relied upon Mr. Rice's flawed inputs to conduct his own flawed analysis using the WAM.¹⁰⁸ LCRA states Mr. Trungale's use of the "Run 3" version of the WAM for his analysis significantly understates the amount of water expected to be in the Colorado River and therefore overstates modeled impacts of LCRA's pumping on the surface water.¹⁰⁹ LCRA attributes the over-stated impacts to "Run 3" not accounting for historic or future expected real world conditions in the river. Instead, "Run 3" is a conservative estimate of water consumption because it assumes full use of all permitted water by every water right holder in the Colorado River

¹⁰⁵ LCRA's Reply at 35-38.

¹⁰⁶ LCRA's Reply at 37-38.

¹⁰⁷ LCRA's Reply at 39.

¹⁰⁸ LCRA's Reply at 39-44.

¹⁰⁹ LCRA's Reply at 40-41.

basin and 100% consumption of the water (with no return flows) which is not the historical or expected norm in the future.¹¹⁰

LCRA also concludes that Mr. Trungale's use of the WAM to examine pumping impacts on instream flow requirements is overly simplistic and flawed. LCRA claims that even if Environmental Stewardship's quantifications in reduced surface water flows resulting from LCRA's pumping were accurate, Mr. Trungale's assessment of the impact to instream flows and the environment ignores consideration of actual historical subsistence flow data and the actual impact to wildlife habitat such as the Blue Sucker spawning area.¹¹¹

4. ALJs' Analysis

The ALJs conclude that LCRA's pumping under the Revised Draft Operating Permits alone would not result in unreasonable effects on surface water resources. Accordingly, the Applications should not be denied on that basis. **On the other hand, the ALJs agree with the GM and Environmental Stewardship that the District should include appropriate conditions in the operating permits to monitor whether LCRA's proposed pumping combined with District-wide pumping will cause unreasonable effects and to order curtailment when needed.**

EMPHASIS ADDED

a. The Standard for Unreasonable Effects on Surface Water Resources

No party cited precedent or a legal definition of unreasonable effects to surface water resources, but **LCRA witness Dr. Young proposed certain standards for what would constitute unreasonable effects. Under Dr. Young's definitions, unreasonable effects would be shown by pumping that: (1) causes a drawdown that results in the capture of underflow; or (2) causes a change in the hydraulic gradient between the water level in the stream and the water level in an adjacent shallow groundwater flow that causes a persistent and substantial flow from surface water**

¹¹⁰ LCRA's Reply at 40-41.

¹¹¹ LCRA's Reply at 43; LCRA Ex. 70.

to the groundwater system.¹¹² As they did regarding effects on groundwater, the ALJs note that there may be additional conditions that would constitute unreasonable effects, but agree that either condition would constitute unreasonable effects on surface water resources.

There is no requirement in law or the District's rules that requires the District to maintain groundwater flow of any amount into the surface water system. On the contrary, Texas courts have consistently held that groundwater can be pumped without protection of spring flow.¹¹³ **Districts are, however, required to address conjunctive water management in their water management plans and in the adoption of the DFCs.¹¹⁴ Therefore, although cumulative effects of pumping are not relevant to the issue of unreasonable effects, those effects can, and should be, considered as part of the District's management, and the possibility exists that the District could curtail all users if necessary. In order to make those sorts of determinations, there will need to be monitoring, as discussed below. EMPHASIS ADDED**

b. There is No Evidence in the Record that LCRA's Proposed Pumping, Standing Alone, Will Unreasonably Affect Surface Water Resources

No party argues that LCRA's proposed pumping, standing alone, will cause a loss of surface water in the Colorado River in Bastrop County to the groundwater system. At most, the parties who modeled the effects of LCRA's pumping found that it would cause a loss of discharges of groundwater into the surface waters, resulting in a loss of flow in the Colorado and its tributaries of .5% of the average annual flow of the Colorado River at Bastrop.¹¹⁵ **Environmental Stewardship also argued that such losses would be a greater percentage of the flows (up to 8%) during low flow conditions.¹¹⁶ The ALJs find, based on the credible testimony of Dr. Young and supported by**

¹¹² LCRA Ex. 28 (Young direct) at 40.

¹¹³ See *Denis v. Kickapoo Land Co.*, 771 S.W.2d 235 (Tex. App.—Austin 1989, writ denied); *Pecos County Water Control & Improvement District No. 1 v. Williams*, 271 S.W.2d 503 (Tex. App.—El Paso 1954, writ ref'd n.r.e.).

¹¹⁴ Tex. Water Code §§ 36.1071(a)(4), 36.108(d)(4).

¹¹⁵ LCRA Ex. 28 at 41 (Dr. Young estimated losses of .2% of annual flow); Environmental Stewardship Ex. 100 (Rice direct) at 10. Mr. Rice estimated losses of .5% of annual flow and loss of 8% during low flows.

¹¹⁶ Environmental Stewardship Ex. 100 (Rice direct) at 10.

Dr. Hutchison, that extrapolations of the GAM model to low flow conditions are not appropriate because the GAM is a model that is based on annualized flows. Extrapolations improperly ignore many variables and the complexities of river conditions during different flow regimes. **In sum, it has not been shown that LCRA's proposed pumping alone will cause unreasonable effects on surface water resources, and the permits should not be denied on that basis.** EMPHASIS ADDED

c. Cumulative Effects

The ALJs find that Dr. Hutchison's and Mr. Rice's GAM models show that the **cumulative effects of LCRA's proposed pumping, combined with the District pumping base case, may cause significant losses of surface water to the groundwater system in Bastrop County by 2050, including up to half of LCRA's groundwater pumping being sourced by surface water. Such losses would be a "persistent and substantial flow from surface water to the groundwater system" and thus would meet the standards set forth by LCRA witness Dr. Young for unreasonable effects.** However, the ALJs agree with Dr. Hutchison's (and others') conclusion that the GAM models are not accurate enough to predict such impacts with certainty, due to the lack of reliable high volume pumping data in Bastrop County.¹¹⁷ EMPHASIS ADDED

Because the ALJs do not find that the GAM is accurate enough to predict the loss of surface water with sufficient certainty or precision, the ALJs do not accept Environmental Stewardship's conclusion that LCRA's pumping will definitely cause unreasonable effects. Specifically, because the inputted surface water losses calculated by the GAM are not precise or certain enough to be used as reliable inputs in further analysis relating to surface water impacts, **the ALJs do not make any findings relating to whether the methods Environmental Stewardship witness Mr. Trungale used, which relied upon those uncertain inputs, are appropriate evaluations.** EMPHASIS ADDED

Nevertheless, while the Old and New GAMs do not conclusively show future impacts, absent additional data, they are the most reliable tool available with which to make a determination

¹¹⁷ GM Ex. 11 at 16.

on the subject. **The ALJs agree that the GAM modeling shows the possibility of future unreasonable effects on surface water resources caused by the cumulative effects of District-wide pumping, including LCRA's. Therefore, the District needs to monitor the impacts of groundwater pumping in order to have sufficient knowledge to be able to mitigate or prevent unreasonable effects.** Details of this monitoring will be discussed in Section H, which addresses the Monitoring Well Agreement. EMPHASIS ADDED

- C. Well Drawdown and Interference -- OMITTED**
- D. Management of Total Groundwater Production on a Long-Term Basis to Achieve Desired Future Condition -- OMITTED**
- E. Special Conditions from Previous Permits -- OMITTED**
- F. Separate Issues Raised by the Brown Landowners -- OMITTED**
- G. Phasing --OMITTED IN PART**

The Draft Operating Permits and the Revised Draft Operating Permits both anticipate that LCRA will increase its pumping in phases. LCRA and the parties opposed to the Applications expressed concerns about various aspects of the phasing process.

¹⁴⁶ Tex. Water Code § 36.114(h).

¹⁴⁷ Tex. Water Code § 36.114(h).

¹⁴⁸ Brown Landowners' Brief in Support of Closing at 18 ("Including Travis county in their permit, the LCRA cannot demonstrate that there is a beneficial use to Bastrop and Lee counties.").

First, LCRA objects to a requirement in the Draft Operating Permits that it have binding contracts with end users to move to the next phase and increase pumping.

Next, both LCRA and Recharge have concerns about the phasing formula, and LCRA requested it be changed.¹⁴⁹ LCRA argues that, although it is willing to phase in production, it should not be required to accept special conditions “that are unreasonable, flawed, create significant uncertainty, or are so open to interpretation that they cannot be reasonably implemented” just because previous permittees agreed to those special conditions.¹⁵⁰ In particular, LCRA argues, citing Recharge’s expert, that the phasing formula is “a mess” that should be eliminated.¹⁵¹

Finally, Aqua and Elgin raise a different concern: that the phasing examines district-wide conditions, as opposed to local impacts. Equally significant for Aqua is that potentially-impacted local users cannot participate in the decision to move LCRA from one phase to the next. Aqua argues that, as the phasing standards stand in the Draft Operating Permits, they provide “no meaningful review of local impacts, and no due process for protestants to have their respective *local* impacts heard and addressed.”¹⁵² Both sets of concerns will be addressed in turn.

- 1. Binding Contracts - OMITTED**
- 2. The Phasing Formula -- OMITTED**
- 3. Concerns About Local Impacts and Input**
 - a. Parties’ Arguments**

¹⁸⁰ Compare LCRA Ex. 8A at 3-4 with Revised Draft Operating Permit at 3-4.

¹⁸¹ LCRA’s Closing at 59.

Aqua, Environmental Stewardship, and Elgin's primary concerns are that the phasing decision will not look at local impacts and that the decisions about whether LCRA can increase its pumping will be made solely by the District and LCRA, with no opportunity for public input.

The GM cites to several provisions in the Revised Draft Permits that it contends protects existing users. These are the monitoring well agreement, the phased approach, that LCRA like all users is subject to future cutbacks, the well-spacing requirements, and the 36-hour pump test requirements.¹⁸²

The GM strongly objects to parties other than LCRA being involved in any phasing decision. The GM argues, in fact, that allowing participation in such decisions would be contrary to Code chapter 36. In particular, the GM argues that participation must be limited to persons with a personal justiciable interest and that this interest be affected by the requested permit.¹⁸³ The GM also argues that other parties' participation would be "disruptive" and undercut the District's ability to do its job.¹⁸⁴

b. ALJs' Analysis

The ALJs are unconvinced by the GM's argument that the parties' involvement must end at the conclusion of this contested case hearing. The parties here have established their personal interest, and their focus is on potential harm to their wells, not to some generalized interest to the public.

One change the GM made in the Revised Draft Operating Permits is relevant to this issue. This change was to Special Condition 5 (previously Special Condition 7), which addresses the renewal application. In the Revised Draft Permits, if LCRA files a renewal application, the GM and LCRA must evaluate "the data collected from the Monitoring Well System prior to the date

¹⁸² GM's Reply at 24-25.

¹⁸³ Tex. Water Code § 36.415(b)(2).

¹⁸⁴ GM's Reply at 26.

of the application to renew to determine whether LCRA's pumping has resulted in substantially different impacts to groundwater resources than those predicted by the modeling relied upon [by] the District when the Permit was issued and jointly propose revisions to the Permit based on that data."¹⁸⁵ **The ALJs recommend that the District adopt this Special Condition, but believe the condition should be revised to provide an opportunity for affected landowners to participate in the permit renewal process, including the determination of whether an amendment is necessary.** EMPHASIS ADDED

H. Monitoring Well Agreement

There are two main issues relating to the Special Condition 1, which requires LCRA and the GM to enter into a Monitoring Well Agreement. The GM and LCRA disagree about certain aspects of this Special Condition as it relates to monitoring groundwater. As discussed above, the ALJs also find it necessary to conduct monitoring of the impacts on surface water, as well. EMPHASIS ADDED

1. Details of the Monitoring Well Agreement as It Relates to Groundwater

The GM and LCRA disagree about certain aspects of the special conditions relating to a Monitoring Well Agreement. Special Condition 1 of the Revised Draft Operating Permit requires LCRA to enter into a Monitoring Well System Construction and Maintenance Agreement, approved by the District's Board, within 180 days after the Permit has been issued.¹⁸⁶ LCRA would be required to construct and maintain the new monitoring wells, and a violation of the Monitoring Well Agreement would be a violation of the Permit.

Special Condition 4 of the Revised Draft Operating Permits sets out certain criteria for a monitoring well system. Wells in the system must be screened in the Simsboro Formation; must

¹⁸⁵ Revised Draft Operating Permit at 8.

¹⁸⁶ In the Draft Operating Permit, this deadline was 90 days after permit issuance.

improve the spatial coverage of the monitoring well system; must be easily accessible for regular measurements; and must meet any other criteria agreed upon by the GM and LCRA.¹⁸⁷

2. Parties' Arguments

LCRA first objects to the 180-day deadline to enter into a Monitoring Well Agreement. LCRA argues that decisions about the timing and number of monitoring wells should be deferred to provide both LCRA and the District with additional flexibility.¹⁸⁸ LCRA suggests that the deadline to enter into a monitoring well agreement should be before construction of a well to be used in the first pumping phase of the permit (Phase II).¹⁸⁹ According to LCRA, not having an exact date would provide greater flexibility and would allow it (and the District) to take changed conditions into account.¹⁹⁰

LCRA argues that the portion of Special Condition 1 under which a violation of the Monitoring Well Agreement is a violation of the operating permit should be removed. In LCRA's view, tying together an as-yet-unnegotiated Monitoring Well Agreement and the Draft Operating Permit would add an unreasonable amount of uncertainty to the process. LCRA points that it has incentive to comply with the Monitoring Well Agreement because it will be prevented from increasing its pumping unless it complies. LCRA also argues that the Monitoring Well Agreement should be enforced as a contract between the LCRA and the District, not as part of an operating permit.

¹⁸⁷ The Revised Draft Operating Permits remove a reference to an existing monitoring well, as LCRA requested. Similarly, the Revised Draft Operating Permits no longer require LCRA to "operate" the monitoring wells. LCRA had also requested that change.

¹⁸⁸ LCRA's Closing at 45.

¹⁸⁹ LCRA Ex. 8A at 2.

¹⁹⁰ LCRA's Closing at 45.

LCRA also suggests that the requirement that it “has assisted the District in adding any New Monitoring Wells that the District and Permittee agree are needed before Permittee may increase its pumping [to the requested phase]” be added to the Draft Operating Permit.¹⁹¹

The GM argues that negotiation of a monitoring well agreement cannot be delayed until after production, particularly since monitoring wells are used to analyze local impacts,¹⁹² such as those that have been contested in this case. The GM also argues that the District has the authority to include a special condition requiring a monitoring well agreement pursuant to District Rule 5.3.D(2), which provides that an operating permit may include “any special conditions required by the considerations in Rule 5.2.D and any other special condition required or authorized by these Rules or applicable law.”

3. ALJs’ Analysis

The ALJs agree that the District has the authority to require LCRA to enter into a Monitoring Well Agreement. The District may impose Special Conditions it determines are required by the considerations in Rule 5.2.D.¹⁹³ Among those considerations are whether the conditions and limitations “minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, or lessen interference between wells.” The special conditions relating to the Monitoring Well Agreement tie in to those considerations. The ALJs also note that the GM has incorporated some of LCRA’s suggestions in the Revised Draft Operating Permit.

That said, the ALJs recommend adopting LCRA’s proposed change to extend the deadline to enter into a Monitoring Well Agreement. The ALJs are convinced that a flexible deadline, rather than a 180-day deadline, will better allow LCRA and the GM to take any new pumping into account. **Additionally, the ALJs agree that the portion of Special Condition 1 under which violation**

¹⁹¹ LCRA Ex. 8A at 3-4.

¹⁹² Tr. at 1594.

¹⁹³ District Rule 5.3.D(2).

of the Monitoring Well Agreement is a permit violation should be removed. Incorporating a contract that does not yet exist into a permit adds too great a level of confusion to the permitting process. EMPHASIS ADDED

4. Monitoring Effects on Surface Water Resources

As the ALJs previously found, the GAM modeling does not reliably address the potential cumulative effects of LCRA's proposed pumping on surface water resources, in combination with all other authorized pumping in the District. Code § 36.113(d)(2) requires the District to consider whether "the proposed use of water unreasonably affects . . . surface water resources." However, the GM's test-and-see approach, without a definite plan for monitoring effects, is not adequate to prevent unreasonable impacts on surface water resources.

The GM supports incorporating surface water monitoring in the Monitoring Well Agreement and is open to including language in that agreement that will be helpful in assessing impacts.¹⁹⁴ The GM is also not opposed to Environmental Stewardship's suggestion of including a work plan in the permit developed for the Colorado River which would relate to surface water/groundwater interaction.¹⁹⁵ However, the GM suggests that both the surface water monitors and the work plan be part of the Well Monitoring Agreement to be negotiated with LCRA at a later date.¹⁹⁶

The ALJs find that, in light of the fact that the GAMs show potential impacts to surface water resources caused by LCRA and District-wide pumping, any monitoring well system must include monitoring wells that could monitor effects on surface water resources. Thus, the ALJs recommend amending the definition of "Monitoring Well System" contained in Special Condition

¹⁹⁴ GM's Reply at 39.

¹⁹⁵ GM's Reply at 39.

¹⁹⁶ GM's Reply at 39.

(4)(a) in the Revised Draft Operating Permit **to require that a monitoring well system must monitor such effects.** EMPHASIS ADDED

The ALJs have not included Environmental Stewardship's recommended changes to the permits incorporating the work plan created by Dr. Young. While the ALJs agree that adoption of a surface water plan (like the work plan created by Dr. Young or some other work plan the District has approved) may be beneficial for the purposes of managing District-wide pumping impacts on surface water resources, **the adoption of a work plan in a permit is not appropriate. The process of adoption of a surface water work plan falls squarely within the process of adoption of the District's water management plan.¹⁹⁷ Instead, the Well Monitoring Agreement should incorporate any work plan that is adopted during the water management planning process.**

I. 36-Hour Pump Test -- OMITTED

J. Place and Type of Use -- OMITTED

K. Mitigation -- OMITTED

IV. ISSUES RELATING TO THE TRANSPORT PERMITS -- OMITTED

V. CONCLUSION

The ALJs recommend issuance of the Revised Draft Operating Permits and the Draft Transport Permits with the following changes:

1. That Special Condition 1 of the Revised Draft Operating Permits be amended to read, “Prior to construction of a well authorized under Special Condition 3(b), Permittee shall enter into a monitoring well agreement approved by the District Board and Permittee;”
2. That the following language be removed from Special Condition (3)(a) of the Revised Draft Operating Permit: “and has complied with the terms and provisions of the Monitoring Well Agreement.”

3. That the requirement that LCRA present end-user contracts or binding commitments be removed from the Revised Draft Operating Permits Special Condition (3)(c)(iv) and replaced with the following language: “Permittee has assisted the District in adding any New Monitoring Wells that the District and Permittee agree are needed before Permittee may increase its pumping under Phase III.”
4. That the requirement that LCRA present end-user contracts or binding commitments be removed from the Revised Draft Operating Permits Special Condition (3)(d)(iii) and replaced with the following language: “Permittee has assisted the District in adding any New Monitoring Wells that the District and Permittee agree are needed before Permittee may increase its pumping under Phase IV.”
5. That Special Condition (4)(a) of the Revised Draft Operating Permit be amended to include a requirement that a “Monitoring Well System” include wells to monitor surface water;
6. That Special Condition 5 be amended to clarify that affected landowners may participate in the permit renewal process, including the determination of whether an amendment is necessary; and
7. That Special Provision 1, prohibiting discharge into a surface watercourse, be removed from the Draft Transport Permits.

In support of these recommendations, the ALJs propose the following Findings of Fact and Conclusions of Law.

VI. FINDINGS OF FACT

Background and Procedural History

1. The Lower Colorado River Authority (LCRA) is a conservation and reclamation district established by the Texas Legislature in 1934 that serves as a regional water supplier within its 35-county service area.
2. In 2015, as part of a goal to diversify its water supply and “drought proof” it, LCRA acquired groundwater rights beneath the Griffith League Ranch, an approximately 4,847.5-acre property owned by the Capitol Area Council, Inc. of the Boy Scouts of America.
3. On February 1, 2018, LCRA filed applications (Applications) for eight operating and transport permits with the Lost Pines Groundwater Conservation District (District). The applications for operating permits sought authorization to withdraw a total of 25,000 acre-feet per year of groundwater from the Simsboro Formation based on the groundwater rights it acquired at the Griffith League Ranch. The water was to be used for municipal, industrial, recreational, irrigation and agricultural purposes.

4. On February 21, 2018, LCRA resubmitted the Applications on different forms.
5. On August 20, 2018, the District's General Manager (GM) notified LCRA by letter that its Applications were administratively complete and that the Applications would be set for a public hearing. The letter also provided LCRA with the GM's Draft Operating Permits and Draft Transport Permits (collectively, Draft Permits.)
6. Following notice, the District held a public hearing on the Applications on September 26, 2018, and voted to contract with the State Office of Administrative Hearings (SOAH) to conduct a hearing on the Applications. Several persons disagreed with the issuance of the Draft Permits, and LCRA challenged some of the Draft Transport Permit provisions.
7. On December 18, 2018, SOAH Administrative Law Judges (ALJs) Michael O'Malley and Laura Valdez held a prehearing conference in Bastrop, Texas. At the prehearing conference, the ALJs admitted the following as parties: LCRA, the District, Aqua Water Supply Corporation (Aqua), Environmental Stewardship, City of Elgin (Elgin), and Recharge Water, LP (Recharge). A group of landowners represented by a single attorney was also admitted, and will be referred to as the Brown Landowners. Several self-represented litigants were also named parties.
8. Following a challenge to party status, the ALJs determined that many of the self-represented litigants, and some of the Brown Landowners, did not have a justiciable interest and struck them as parties. The remaining self-represented litigants were Peggy Jo and Marshall Hilburn, Walter Winslett, JC Jensen, Elvis and Roxanne Hernandez, Verna L. Dement, Catherine and Charles L. White, and Richard Martinez. Mr. Jensen and Mr. Martinez withdrew their protests, as did several of the Brown Landowners.
9. Aqua is a retail public utility with a service area in Bastrop, Caldwell, Fayette, Lee, Travis, and Williamson Counties that has a permit from the District authorizing the production of 23,627 acre-feet per year from 15 wells in the Simsboro Formation. Twelve of those wells are in two well fields near the shallow outcrop of the Simsboro. Aqua's three other wells are located on the south side of Highway 290, in the deeper downdip portion of the aquifer.
10. Elgin has a retail public utility that provides retail water utility service within its certificated service area. The city, which is located in the greater Austin area, expects continued and rapid growth. Elgin has four wells that are all partially or wholly completed within the Simsboro Formation. Two of Elgin's wells are in the outcrop area of the Simsboro Formation, with the wells screened partially in both the Simsboro and Hooper Formations. Its other two wells are located in the downdip and are entirely screened within the Simsboro Formation.
11. Recharge, formerly known as End Op, L.P., has operating permits from the District authorizing the production of 46,000 acre-feet from 14 wells, to be phased in, which it

acquired following years of litigation and a settlement. Seven of the permitted wells are to be located in Bastrop County, and seven are to be located in Lee County.

12. The Hernandezes' well is in the Calvert Bluff Formation, which overlays the Simsboro. The Brown Landowners' wells are located throughout the District.
13. The hearing on the merits was held October 15-22, 2019, before ALJs Ross Henderson and Rebecca S. Smith. The first four days of the hearing were held in Bastrop, Texas, and the last two took place at SOAH's hearing facility in Austin, Texas. Mr. and Mrs. Hernandez were the only self-represented litigants who prefiled testimony and participated in the hearing on the merits. The record closed on January 31, 2020, with the filing of reply briefs.
14. In its original Applications, LCRA stated that the water would be used throughout its 35-county service area. In its testimony, and at hearing, LCRA amended its request to only seek to use the water in Bastrop, Lee, and Travis Counties.
15. As an attachment to his reply brief, the GM provided a January 31, 2020 Revised Draft Operating Permit (Revised Draft Operating Permit) that made several changes to the Draft Operating Permit. No party objected to these changes.

Uncontested Texas Water Code Factors Relevant to Operating Permits

16. The Applications for Operating Permit included all of the information required by chapter 36 of the Texas Water Code (Code) and the District Rules.
17. LCRA intends to use the groundwater it produces to meet its existing and future water supply obligations.
18. Standard Provision No. 1 in the Revised Draft Operating Permits require that the water withdrawn be put to beneficial use at all times and prohibits the operation of a permitted well in a wasteful manner.
19. The District's Management Plan states that the District will endeavor to manage groundwater to meet demands on a sustainable basis.
20. The Revised Draft Operating Permits' production limits, requirements for pump-testing and monitoring, and a provision that LCRA is subject to future production limits allow the District to manage groundwater to meet demands on a sustainable basis.
21. LCRA's proposed use of water is consistent with the District's approved management plan.
22. LCRA has adopted water conservation and drought contingency plans pursuant to its policy to meet or exceed state water conservation requirements.

23. In its Applications and with its plans, LCRA has agreed to avoid waste and achieve water conservation.
24. In its Applications, LCRA agreed that reasonable diligence will be used to protect groundwater quality and that it will follow well plugging guidelines at the time of well closure.
25. LCRA does not have a history of non-compliance with District Rules or Chapter 36.

Unreasonable Effects on Groundwater or Surface Water Resources or Existing Permit Holders

26. **The 2018 Central Carrizo-Wilcox Groundwater Availability Model (New GAM) provides a better tool to model the impact of LCRA's proposed pumping than does the 2004 Central Queen City-Sparta Groundwater Availability Model.**
27. LCRA's expert Dr. Steven Young performed several model runs using the New GAM, factoring in well-design factors, such as pump settings, well constrictions, and location of well screens for Aqua's and Elgin's wells.
28. Under Dr. Young's modeling, LCRA's proposed pumping would not cause the water level in Aqua's or Elgin's wells to drop below the pump elevation.
29. The Special Conditions proposed by the GM in the Revised Draft Permit—in particular, the 36-hour pump test, the requirement that a groundwater monitoring well agreement be entered into, and the phased production tiers—will help ensure that LCRA's proposed use will not unreasonably affect existing groundwater resources or existing permit holders.
30. **Dr. Young's modeling showed that LCRA's proposed pumping will not unreasonably affect existing surface water resources.**
31. **The modeling also showed that LCRA's proposed pumping, when combined with other pumping, has the potential to affect existing surface water resources.**
32. **Because LCRA's proposed pumping, when combined with other pumping, has the potential to affect existing surface water resources, the Revised Draft Operating Permits should be revised to require monitoring for effects on surface water resources. EMPHASIS ADDED**

Whether Granting the Applications is Consistent with the District's Duty to Manage Total Groundwater Production on a Long-Term Basis to Achieve an Applicable Desired Future Condition

33. The District is a part of Groundwater Management Area 12, which on April 27, 2017, adopted a desired future condition (DFC) for the Simsboro Formation of a District-wide average drawdown between January 2000 and December 2069 of 240 feet.
34. The DFC is also divided into DFCs for the counties in the District. For Bastrop County, the DFC is a county-wide average drawdown between January 2000 and December 2069 of 174 feet; for Lee County, the DFC is a county-wide average drawdown between those dates of 350 feet.
35. Modeled Available Groundwater (MAG) is the amount of water that the Texas Water Development Board's executive administrator determines may be produced on an average annual basis to achieve a DFC.
36. MAG is a factor for the District to consider when managing the DFC.
37. Granting the application, with the Special Conditions contained in the Revised Draft Operating Permit, is consistent with the District's duty to manage total groundwater production on a long-term basis to achieve the applicable DFC.

Whether the Conditions and Limitations in the Revised Draft Operating Permit Will Prevent Waste, Achieve Water Conservation, Minimize as far as Practicable the Drawdown of the Water Table or the Reduction of Artesian Pressure, or Lessen Interference Between Wells

38. LCRA's proposed wells will be located greater more than 100 feet away from the nearest property line and will be spaced at least 5,000 feet from the nearest Simsboro well not owned by LCRA.
39. LCRA's proposed wells will be located where the aquifer is deepest, in some of the most transmissive parts of the Simsboro in the District.
40. Because LCRA's proposed wells will be part of an aggregated system, LCRA will be able to adjust pumping among the wells to minimize reduction of artesian pressure.
41. Under the Revised Draft Operating Permits, the GM can restrict pumping if the 36-hour pump tests reveal that impacts from pumping are worse than anticipated.
42. The Special Conditions regarding the 36-hour pump tests, phasing, and monitoring wells in the Revised Draft Operating Permit will prevent waste, achieve water conservation, minimize as far as practicable the drawdown of the water table or the reduction of artesian pressure, or lessen interference between wells.

Other Issues

43. The District has not adopted policies of reducing the initial amount of water requested by an applicant or of requiring financial mitigation for production in Bastrop County.
44. The District has not adopted a policy of requiring spacing between wells of at least 5,000 feet as between all large volume wells, even those owned by the same owner.
45. Special Condition 15 in the Revised Draft Operating Permits, which requires LCRA to provide well design specifications before drilling, is within the District's authority and is appropriate.

Phasing Issues

46. Revised Draft Operating Permits Special Condition 3 provides for tiered phasing of production containing four phases.
47. Phase I, which requires LCRA to add new monitoring wells and to comply with the monitoring well agreement required in another special condition.
48. Phase II authorizes the withdrawal from two wells (Wells 7 and 8) of an aggregated annual amount of up to 8,000 acre-feet of water, with an aggregated maximum rate of withdrawal of 6,000 gallons per minute. LCRA would not be authorized to withdraw more water per year than the amount LCRA has a binding commitment to provide to an authorized place of use.
49. Under Phase III, the aggregated annual withdrawal amount could be increased to 15,000 acre-feet of water per year from four wells with an aggregated maximum rate of withdrawal of 10,000 gallons per minute. To move to Phase III, LCRA must show it has withdrawn 4,000 acre-feet per year from a combination of one or more of the aggregated wells during two consecutive twelve-month period sand show binding commitments. LCRA must also show that the Estimated DFC Year Drawdown is less than the DFC for the Simsboro in effect when LCRA submits that information.
50. In Phase IV, the aggregated annual withdrawal may be increased to an amount not to exceed 25,000 acre-feet per year from all eight wells, with an aggregated maximum rate of withdrawal of 18,000 gallons per minute. To reach this phase, LCRA must show binding commitments and that it has withdrawn at least an aggregate amount of at least 11,250 acre-feet per year from a combination of one or more of the aggregated wells during three consecutive twelve-month periods. LCRA must also show that the Estimated DFC Year Drawdown is less than the DFC for the Simsboro in effect when LCRA submits that information.

51. Revised Draft Operating Permits Special Conditions (3)(c)(i) and (3)(d)(iii) require LCRA to show binding commitments to provide the requested withdrawal amount before advancing to the next phase.
52. The Regional Water Plans and LCRA's existing contract demonstrated there is a need for the water in the receiving area.
53. Pumping water without beneficially using it would violate the Revised Draft Operating Permit.
54. Therefore, there is not a compelling reason to include the requirement for binding contracts in Revised Draft Operating Permits Special Conditions (3)(c)(iv) and (3)(d)(iii).
55. The Revised Draft Operating Permits contain most of the changes LCRA proposed to the formula in the Draft Operating Permit's Special Condition 3, with the exception of which DFC should be considered in deciding whether LCRA can advance to the next phase of production.
56. Examining LCRA's pumping in relation to the DFC in existence at the time LCRA seeks to advance to the next tier of pumping, helps ensure that LCRA is not exempt from the effect of changes in conditions when it seeks to pump more water.
57. The reference to "the Desired Future Condition for the Simsboro Aquifer in effect when the Permittee submits the information" in Revised Draft Operating Permits Special Conditions (3)(c)(ii) and (3)(d)(ii) should be included in the issued permits.
58. Special Condition 5 of the Revised Draft Operating Permit Special Condition 5 provides that if LCRA files a renewal application, the GM and LCRA must evaluate "the data collected from the Monitoring Well System prior to the date of the application to renew to determine whether LCRA's pumping has resulted in substantially different impacts to groundwater resources than those predicted by the modeling relied upon [by] the District when the Permit was issued and jointly propose revisions to the Permit based on that data."
59. **The parties admitted at this hearing are affected persons, and have an interests beyond the general public.**
60. **To protect their interests, Special Condition 5 should be clarified to provide that affected persons may participate in the permit renewal process, including the determination of whether an amendment is necessary.**

Monitoring Wells

61. Special Condition 1 of the Revised Draft Operating Permit requires LCRA to enter into a Monitoring Well System Construction and Maintenance Agreement, approved by the District's Board, within 180 days after the Permit has been issued. Under this condition, LCRA would be required to construct and maintain the new monitoring wells, and a violation of the Monitoring Well Agreement would be a violation of the Permit.
62. Special Condition 4 of the Revised Draft Operating Permits sets out certain criteria for a monitoring well system. Wells in the system must be screened in the Simsboro Formation; must improve the spatial coverage of the monitoring well system; must be easily accessible for regular measurements; and must meet any other criteria agreed upon by the GM and LCRA.
63. Providing a flexible deadline, rather than a 180-day deadline, will better allow LCRA and the GM to take any new pumping into account.
64. Special Condition 1 should be amended to require LCRA and the GM to enter into a Monitoring Well Agreement before LCRA can construction of a well, rather than within 180 days of permit issuance.
65. Incorporating a Monitoring Well Agreement that does not yet exist into a permit adds a significant level of confusion to the permitting process.
66. **The portion of Special Condition 1 under which violation of the Monitoring Well Agreement is a permit violation should be removed from the permit.**
67. The GM incorporated LCRA's proposed changes to the 36-hour pump test into the Revised Draft Operating Permit.
68. Special Condition 15 of the Revised Draft Operating Permit requires LCRA to provide the GM with design specifications before drilling a well.
69. LCRA did not submit well design specifications with its Applications.
70. The GM is authorized to require LCRA to provide design specifications.
71. Revised Draft Operating Permits authorize "[a]ll beneficial uses authorized by Texas Water Code § 36.001(9)(A)-(B)."
72. LCRA, as a regional water provider, should have the flexibility to serve its customers for any lawful beneficial use and the revision offered by the GM allows for that flexibility.

Undisputed Draft Transport Permit Requirements

73. The Region K and Region G Water Plans identify water supply shortages in the in the counties LCRA is requesting to serve (Lee, Bastrop, and Travis Counties) and project that there is sufficient water available for LCRA's planned withdrawals.
74. In reviewing LCRA's Applications for Transport Permits, the GM considered the projected effect of the proposed transfer on aquifer conditions, depletion, subsidence.
75. In reviewing LCRA's Applications for Transport Permits, the GM considered the or effects on existing permit holders or other groundwater users within the District.
76. In reviewing LCRA's Applications for Transport Permits, the GM considered the approved regional water plan and approved district management plan.
77. Special Provision 1 prohibits LCRA from transporting water pursuant to a bed-and-banks permit and from discharging to any surface water.
78. Under the Draft Permits, transportation of groundwater by use of a proposed bed-and-banks permit would be impossible because water cannot be conveyed upriver from Bastrop County to Travis County, the only place of use outside the District.
79. Discharge of groundwater into a surface watercourse pursuant to a bed-and-banks permit is not waste.
80. Operating permits in the District do not prohibit discharge into surface water.
81. Special Provision 1 imposes more restrictive permit conditions on transporters than the District imposes on existing in-district users.

VII. CONCLUSIONS OF LAW

1. The District has jurisdiction to decide the issues raised by LCRA's Applications. Tex. Water Code ch. 36.
2. Notice was accomplished in accordance with chapter 36 of the Texas Water Code and District Rules.
3. LCRA's Applications are subject to the District Rules that were amended April 20, 2016.
4. Under the Standard and Special Conditions proposed by the GM in the Revised Draft Operating Permits, LCRA's Applications for Operating Permits conform to the requirements prescribed by chapter 36 of the Code and the District Rules. Tex. Water Code § 36.113(d)(1); District Rule 5.2D(1).

5. Modeled Available Groundwater is the amount of water that may be produced on an average annual basis to achieve a desired future condition. Tex. Water Code § 36.001 (25).
6. Under District Rule 8.2.B, a new non-exempt well with a maximum pumping capacity of greater than 1,000 gpm must be spaced at least 5,000 feet from the nearest well completed in the same aquifer unit and owned by a different well owner.
7. The District is not required to consider historic use in evaluating LCRA's Applications. Tex. Water Code § 36.116(b).
8. Neither the Texas Water Code nor the District Rules authorize the District to unilaterally impose a requirement that an applicant recreate a mitigation account to pay other well owners for the impacts from the applicant's drilling.
9. In reviewing LCRA's Applications for Transport Permits, the District considered the factors required by Texas Water Code § 36.122(f) and District Rule 6.3.
10. Texas Water Code § 36.001(8)(E) defines "waste" as including "willfully or negligently causing, suffering, or allowing groundwater to escape into any river, creek, natural watercourse, depression, lake, reservoir, drain, sewer, street, highway, road, or road ditch, or onto any land other than that of the owner of the well unless such discharge is authorized by permit, rule, or order issued by the commission under Chapter 26."
11. Authorized discharge pursuant to a bed-and-banks permit issued under the Texas Water Code is not "waste."
12. The District may not prohibit the transport of water via a bed-and-banks permit as part of its authority to control waste of groundwater under Texas Water Code § 36.101(a).
13. After weighing the factors under Texas Water Code § 36.113(d) and the District Rules, the District should approve the GM's Revised Draft Operating Permit and the Draft Transport Permit with the following changes:
 - a. That Special Condition 1 of the Revised Draft Operating Permits be amended to read, "Prior to construction of a well authorized under Special Condition 3(b), Permittee shall enter into a monitoring well agreement approved by the District Board and Permittee;"
 - b. That the following language be removed from Special Condition (3)(a) of the Revised Draft Operating Permit: "and has complied with the terms and provisions of the Monitoring Well Agreement;"

- c. That the requirement that LCRA present end-user contracts or binding commitments be removed from the Revised Draft Operating Permits Special Condition (3)(c)(iv) and replaced with the following language: “Permittee has assisted the District in adding any New Monitoring Wells that the District and Permittee agree are needed before Permittee may increase its pumping under Phase III;”
- d. That the requirement that LCRA present end-user contracts or binding commitments be removed from the Revised Draft Operating Permits Special Condition (3)(d)(iii) and replaced with the following language: “Permittee has assisted the District in adding any New Monitoring Wells that the District and Permittee agree are needed before Permittee may increase its pumping under Phase IV;”
- e. That Special Condition (4)(a) of the Revised Draft Operating Permit be amended to include a requirement that a “Monitoring Well System” include wells to monitor surface water;
- f. That Special Condition 5 be amended to clarify that affected landowners may participate in the permit renewal process, including the determination of whether an amendment is necessary; and
- g. That Special Provision 1, prohibiting discharge into a surface watercourse, be removed from the Draft Transport Permits.

SIGNED March 31, 2020.


REBECCA S. SMITH
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS


ROSS HENDERSON
ADMINISTRATIVE LAW JUDGE
STATE OFFICE OF ADMINISTRATIVE HEARINGS