# State Office of Administrative Hearings

Kristofer S. Monson
Chief Administrative Law Judge

May 19, 2025

Bradford Eckhart & Fernando Salazar Martinez for the ED **VIA EFILE TEXAS**

Jennifer Jamison & Josiah Mercer for OPIC **VIA EFILE TEXAS**

Helen Gilbert & John Manning for Applicant **VIA EFILE TEXAS**

Eric Allmon, Lauren Ice & Lauren Alexander for Protestants **VIA EFILE TEXAS**

**RE: SOAH Docket 582-25-01778; TCEQ Docket 2024-0670-MWD; *Application by Municipal Operations, LLC for New TPDES Permit No. WQ0016171001***

Dear Parties:

Please find attached a Proposal for Decision (PFD) in this case.

Any party may, within 20 days after the date of issuance of the PFD, file exceptions or briefs. Any replies to exceptions, briefs, or proposed findings of fact shall be filed within 30 days after the date of issuance on the PFD. 30 Tex. Admin. Code § 80.257.

All exceptions, briefs, and replies along with certification of service to the above parties and the ALJs shall be filed with the Chief Clerk of the TCEQ electronically at http://www14.tceq.texas.gov/epic/eFiling/ or by filing an original and seven copies with the Chief Clerk of the TCEQ. Failure to provide copies may be grounds for withholding consideration of the pleadings.

CC: Service List

**SOAH Docket No. 582-25-01778**
**TCEQ Docket No. 2024-0670-MWD**

# BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

## APPLICATION BY MUNICIPAL OPERATIONS, LLC FOR NEW TPDES PERMIT NO. WQ0016171001

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# BEFORE THE STATE OFFICE OF ADMINISTRATIVE HEARINGS

## APPLICATION BY MUNICIPAL OPERATIONS, LLC FOR NEW TPDES PERMIT NO. WQ0016171001

## PROPOSAL FOR DECISION

Municipal Operations, LLC (Applicant) filed an application (Application) with the Texas Commission on Environmental Quality (TCEQ or Commission) for new Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0016171001 to discharge treated domestic wastewater from a proposed wastewater treatment facility (Facility) to be located in Bexar County, Texas, on a property known as Guajolote Ranch. Applicant indicates it intends to beneficially reuse 100 percent of the effluent, absent exigent circumstances.[1] However, a discharge permit is required in the event some or all of the effluent is not reused. The

[1] App. Ex. 5 at 000344-36; App. Ex. 7.

Administrative Law Judges (ALJs) of the State Office of Administrative Hearings (SOAH) recommend the Application be granted and the Draft Permit (as proposed by the Executive Director (ED) of the Commission) be issued without changes.

## I. NOTICE, JURISDICTION, PROCEDURAL HISTORY, AND EVIDENCE

No party contested jurisdiction or notice, which the ALJs will address in the findings of fact and conclusions of law in the Proposed Order attached to this Proposal for Decision (PFD).

TCEQ received the Application on May 23, 2022, and the ED declared it administratively complete on August 30, 2022. The ED completed the technical review of the Application on November 16, 2022. The Commission determined that the Greater Edwards Aquifer Alliance (GEAA), the San Antonio Metropolitan Health District (MetroHealth), and Elizabeth Ann Toepperwein were affected parties, granted their hearing requests, and referred the matter to SOAH for a hearing.

At a preliminary hearing held on November 21, 2024, the administrative record and jurisdictional documents were admitted into evidence,[2] and Applicant, the ED, the Office of Public Interest Counsel (OPIC), GEAA, MetroHealth, and Ms. Toepperwein were admitted as parties. In addition, the City of Grey Forest (Grey Forest) moved for reconsideration of its request to be considered an affected person, and the motion was granted. GEAA, Grey Forest, and Ms. Toepperwein, all

[2] The administrative record is contained in Applicant Exhibit 1 and consists of Tabs A-E (Admin. Record). Applicant Exhibit 1A was admitted at the hearing on the merits and contains correction pages.

represented by the same counsel, were aligned as parties (together, Protestants).[3] MetroHealth was not aligned and later withdrew its request for hearing, stating that it had reached a settlement with Applicant.[4]

In its Interim Order referring this case to SOAH, the Commission identified seven issues (Issues A through G) to be addressed. On February 13, 2025, as discussed further below, the ALJs granted Applicant's motion for partial summary disposition as to Issues C, E, and F, and denied the motion as to Issues D and G.

On February 18-20, 2025, ALJs Shelly M. Doggett and Pratibha J. Shenoy convened the hearing on the merits via Zoom videoconference. Applicant was represented by attorneys Helen Gilbert and John Manning. Attorneys Bradford Eckhart and Fernando Salazar Martinez represented the ED; attorneys Jennifer Jamison and Josiah Mercer represented OPIC; and attorneys Eric Allmon, Lauren Ice, and Lauren Alexander represented Protestants. The record closed with the filing of written reply briefs on March 21, 2025.[5]

At the hearing on the merits, Protestants had 59 exhibits admitted, which included the prefiled testimony of Jordan Crago, PhD; Ron Green, PhD, PG; Kerry McEntire; Erik Remmert; Paul Garro; and D. Lauren Ross, PhD, PE.[6]

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[3] Ms. Toepperwein later clarified that she is a member of GEAA and did not seek standing as an individual.

[4] MetroHealth's motion was granted via Order No. 2, dated February 4, 2025.

[5] Applicant, the ED, and Protestants filed closing briefs and reply briefs; OPIC filed only a closing brief.

[6] GEAA Exs. 100-22, 124, 200-03, 300-05, 400-03, 500-01, and 600-10, and GF Exs. 1-2, 7, and 10-12 were admitted. Although Protestants used different prefixes (GEAA and GF) for their exhibits, the ALJs use "Prot. Ex. ___" for ease of reference.

Applicant had 39 exhibits admitted, which included the prefiled testimony of Keith Arrant; Troy Hotchkiss, PE; Kaveh Khorzad, PG; James Miertschin, PhD; Steve Paulson; Paul Price; and Kelly Tuttle, PhD.[7] The ED had 17 exhibits admitted, which included the prefiled testimony of Michelle Labrie; Xing Lu, PhD, PE; and Abdur Rahim.[8] OPIC offered no testimony or exhibits. Offers of proof by Protestants, to the extent discussed or referenced in closing arguments, are included with the record evidence but are not addressed by the ALJs.[9]

## II. OVERVIEW AND REFERRED ISSUES

### A. REGULATORY CONTEXT

TCEQ administers the TPDES program and implements, via delegated authority from the federal Environmental Protection Agency (EPA), the National Pollution Discharge Elimination System (NPDES).[10] Chapter 26 of the Texas Water Code (TWC) requires a person who seeks to discharge wastewater into Texas waters to file an application with TCEQ pursuant to filing requirements in 30 Texas Administrative Code (TAC), chapter 305, subchapter C.[11] The ED reviews the applications in accordance with 30 TAC chapter 281.[12] Based on a technical review, TCEQ prepares a draft permit that is consistent with EPA and TCEQ rules and a

[7] App. Exs. 1, 1A, and 2-38 were admitted.

[8] ED Exs. ML-1 to ML-7, XL-1 to XL-8, and AR-1 to AR-2 were admitted.

[9] *See* Transcript of the Hearing on the Merits (Tr.) Vol. I at 210-18, 249-50, 292; Tr. Vol. II at 8-9, 120-23.

[10] *See* 33 U.S.C. §§ 1311(a), 1342(a)(1), (b); 63 Fed. Reg. 51,164 (Sept. 24, 1998).

[11] Tex. Water Code §§ 26.027, .121.

[12] 30 Tex. Admin. Code § 281.2(2).

technical summary that discusses the application facts and significant factual, legal, methodological, and policy questions considered while preparing the draft permit.[13]

A domestic wastewater treatment facility in Texas is subject to wastewater discharge permit requirements.[14] Standard requirements, which TCEQ has adapted specifically for use in such permits, are found in 30 TAC chapter 305, subchapter F. All wastewater discharge permits are also subject to regulations found in 30 TAC chapter 319, which require the permittee to monitor effluent and report the results as required in the permit.

Finally, TCEQ has adopted water quality standards applicable to wastewater discharges in accordance with section 303 of the federal Clean Water Act[15] and section 26.023 of the TWC. These standards, known as the Texas Surface Water Quality Standards (TSWQS), are found in 30 TAC chapter 307 and are discussed in greater detail below.

## B. PROPOSED FACILITY AND DISCHARGE

The Facility will be located approximately 1.75 miles west-southwest of the intersection of Babcock Road and Scenic Loop Road in Bexar County, Texas,[16] and will serve a new residential development that will contain approximately

[13] 30 Tex. Admin. Code § 281.21(b)-(c).

[14] Tex. Water Code ch. 26; 30 Tex. Admin. Code chs. 217, 305, 307, 319.

[15] 33 U.S.C. § 1313.

[16] App. Ex. 1, Tab D at 000200, 000234.

2,900 homes at final buildout.[17] The Draft Permit would authorize the discharge of treated domestic wastewater from the Facility site via a 6-inch pipe to Helotes Creek; then to an impoundment of Helotes Creek (the Pond); then again to Helotes Creek; then to Culebra Creek; then to Lower Leon Creek (Segment No. 1906 of the San Antonio River Basin).[18] Helotes Creek is an ephemeral creek characterized by intermittent flow, meaning it is dry for at least one week during most years.[19]

The TSWQS designated uses for Segment No. 1906 are primary contact recreation, high aquatic life use (ALU), and public water supply, and a minimum dissolved oxygen (DO) criterion of 5.0 milligrams per liter (mg/L).[20] The ED's designated ALU for the Pond and Helotes Creek downstream of the confluence with an unnamed tributary is limited, with a 3.0 mg/L DO criterion.[21] For the intermittent stream (Helotes Creek upstream of the unnamed tributary), the ALU designation is minimal, with a 2.0 mg/L DO criterion.[22]

The Draft Permit establishes three phases—Interim I, Interim II, and Final—and would authorize the discharge of treated domestic wastewater at a daily average flow rate not to exceed 0.20 million gallons per day (MGD) during Interim I, 0.40 MGD daily average flow during Interim II, and an annual average flow rate of

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[17] App. Ex. 1, Tab D at 000268, 000286.

[18] App. Ex. 1, Tab C at 000114, 000188.

[19] App. Ex. 1 Tab D at 000294-95.

[20] ED Ex. ML-1 (Labrie Direct) at 5.

[21] ED Ex. ML-1 (Labrie Direct) at 6; ED Ex. ML-3 at 17. As discussed below, Protestants dispute the ALU designation for a portion of Helotes Creek and argue it should have been "intermediate." Prot. Closing Brief at 2.

[22] ED Ex. ML-1 (Labrie Direct) at 6; ED Ex. ML-3 at 17.

1.0 MGD during the Final Phase.[23] The Facility will utilize a Membrane Bioreactor (MBR) system employing an activated sludge process, operated in conventional mode with chemical phosphorus removal capability. Treatment units include a primary fine screen, an equalization tank, a secondary fine screen, an anoxic tank, an aeration basin, an aerated MBR tank, a sludge holding tank, and an ultraviolet light (UV) disinfection system in Interim I; a primary fine screen, two equalization tanks, two secondary fine screens, two anoxic tanks, two aeration basins, two aerated MBR tanks, a sludge holding tank, and a UV disinfection system in Interim II; and a primary fine screen, four equalization tanks, four secondary fine screens, four anoxic tanks, four aeration basins, four aerated MBR tanks, a sludge holding tank, and a UV disinfection system in the Final phase.[24]

For all phases, the pH limit is 6.0–9.0 standard units, and the *E. coli* limit is 126 Colony Forming Units (CFU) or Most Probable Number (MPN) of bacteria per 100 milliliters (ml) of effluent.[25] The Draft Permit would authorize discharge of the effluent with the following daily average effluent concentration limits for Five-Day Carbonaceous Biochemical Oxygen Demand ($CBOD_5$), Total Suspended Solids (TSS), Ammonia Nitrogen, and Total Phosphorus (TP), and the following minimum DO per grab:[26]

[23] App. Ex. 1, Tab C at 000115-17.

[24] App. Ex. 1, Tab C at 000188.

[25] App. Ex. 1, Tab C at 000115-17.

[26] App. Ex. 1, Tab C at 000115-17.

| | $CBOD_5$ (mg/L) | TSS (mg/L) | Ammonia Nitrogen (mg/L) | Minimum DO (mg/L) per grab | TP (mg/L) |
|---|---|---|---|---|---|
| **All Phases** | 5 | 5 | 2 | 4.0 | 0.15 |

## C. REFERRED ISSUES

The Commission's August 20, 2024 Interim Order referred the following issues. As noted, the ALJs granted Applicant's motion for partial summary disposition on Issues C, E, and F.

A. Whether the draft permit is adequately protective of water quality, including surface water, groundwater, and drinking water wells;

B. Whether the draft permit is protective of wildlife, including endangered species, in accordance with the TSWQS in 30 TAC Chapter 307;

C. Whether the draft permit adequately addresses nuisance odor, in accordance with 30 TAC § 309.13(e);

D. Whether the draft permit complies with siting requirements regarding flood plains and wetlands, in accordance with 30 TAC Chapter 309;

E. Whether Applicant substantially complied with applicable public notice requirements;

F. Whether the Applicant adequately identified the operator in the application; and

G. Whether the Commission should deny or alter the terms and conditions of the draft permit based on consideration of need, under TWC § 26.0282 and the general policy to promote regional or area-wide systems, under TWC § 26.081.

# III. LEGAL FRAMEWORK

## A. BURDEN OF PROOF

Applicant, as the moving party, bears the burden of proof by a preponderance of the evidence.[27] However, effective September 1, 2015, the Legislature made significant changes impacting how this burden may be met and the relative evidentiary burden imposed on Protestants as opposing parties. Because the parties dispute the procedural framework,[28] it is useful to begin with an explanation of its structure and function.[29] This involves statutory construction, a legal issue determined *de novo*, where judges typically interpret the words according to their ordinary meaning or definitions provided, considering the context.[30] This context includes the statute read as a whole, the broader framework of related statutes, and other background law.[31] Judges apply the same approach when construing agency rules.[32]

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[27] 30 Tex. Admin. Code § 80.17(a); 1 Tex. Admin. Code § 155.427.

[28] *See*, *e.g.*, Prot. Closing Brief at 4 (discussing "reasonable potential" for violations of TSWQS).

[29] In this analysis, the ALJs find useful and have incorporated without citation portions of the discussion in *Application from Kendall West Utility, LLC for New TPDES Permit WQ0015787001*, SOAH Docket No. 582-22-0489 (May 25, 2022) (PFD).

[30] *See, e.g.*, *In re Office of the Att'y Gen. of Tex.*, 456 S.W.3d 153, 155-56 (Tex. 2015) (orig. proceeding) (per curiam); *In re Ford Motor Co.*, 442 S.W.3d 265, 271 (Tex. 2014) (orig. proceeding).

[31] *See, e.g.*, *Worsdale v. City of Killeen*, 578 S.W. 3d 57, 69 (Tex. 2019) ("Statutes cannot be read intelligently if the eye is closed to considerations evidenced in affiliated statutes." (citations omitted)); *In re Allen*, 366 S.W.3d 696, 706 (Tex. 2012) (presumption that the Legislature acts "with complete knowledge of the existing law and with reference to it" (citations omitted)).

[32] *Tex. Comm'n on Envmt'l Quality v. Maverick Cnty.*, 642 S.W.3d 537, 544 (Tex. 2022) (quoting *Patients Med. Ctr. v. Facility Ins. Co.*, 623 S.W.3d 336, 341 (Tex. 2021), and citing *TGS-NOPEC Geophysical Co. v. Combs*, 340 S.W.3d 432, 438-39 (Tex. 2011)).

The Commission referred this case to SOAH under TWC section 5.556, which governs referral of environmental permitting cases based on request for a contested case hearing.[33] Senate Bill (SB) 709 added Texas Government Code section 2003.047(i-1),[34] which provides:

> (i-1) In a contested case regarding a permit application referred under Section…5.557 [of the] Water Code, the filing with [SOAH] of the application, the draft permit prepared by the executive director of the commission, the preliminary decision issued by the executive director, and other sufficient supporting documentation in the administrative record of the permit application establishes a prima facie demonstration that:
>
> (1) the draft permit meets all state and federal legal and technical requirements; and
>
> (2) a permit, if issued consistent with the draft permit, would protect human health and safety, the environment, and physical property.

TCEQ's rules specify that the prima facie demonstration referenced in section 2003.047(i-1) is established by the filing of the administrative record,[35] which in turn is defined as consisting of (1) the ED's final draft permit; (2) the ED's decision on the application; (3) the summary of the technical review of the application; (4) the applicant's compliance summary; (5) copies of the public notices relating to the application and affidavits regarding the same; (6) "any agency document determined by the executive director to be necessary to reflect the

[33] Tex. Water Code §§ 5.551(a), .556.

[34] Tex. Gov't Code § 2003.047(i-1)-(i-3), added by Acts 2015, 84th Leg., R.S., ch. 116 (S.B. 709), §§ 1 and 5, eff. Sept. 1, 2015.

[35] 30 Tex. Admin. Code §§ 80.17(c)(1), .117(c)(1), .127(h).

administrative and technical review of the application"[36] and the application together with any revisions to the original submittal.[37]

The ALJs in an SB 709 case "**shall** admit the administrative record into evidence for all purposes."[38] An applicant may meet its burden of proof "solely [by the filing with SOAH], and admittance by the judge, of the administrative record[.]"[39] In this case, the Application, the Draft Permit, and the other materials listed in Texas Government Code section 2003.047(i-1) and 30 TAC sections 80.6 and .118—which are collectively referred to as the "Prima Facie Demonstration"—were offered and admitted into the record at the preliminary hearing on November 21, 2024.[40]

SB 709, through section 2003.047(i-2)-(i-3), provides that the prima facie demonstration is rebuttable, and that the applicant and ED may offer more evidence in support of the application:

> (i-2) A party may rebut a demonstration under Subsection (i-1) by presenting evidence that:
>
> (1) relates to a matter referred under Section 5.557, Water Code…; and

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[36] 30 Tex. Admin. Code § 80.118(a), (c)(1).

[37] 30 Tex. Admin. Code § 80.6(b)(5), .118(c)(2).

[38] 30 Tex. Admin. Code § 80.127(h) (emphasis added).

[39] 30 Tex. Admin. Code § 80.117(b).

[40] Protestants objected to the admission of the Administrative Record (App. Exs. 1 and 1A) for all purposes (i.e., other than notice and jurisdiction). *See* Tr. Vol. I at 156-57. The ALJs took the objections under advisement but note that, as quoted above, TCEQ rules require the ALJs to "admit the administrative record into evidence for **all purposes**." 30 Tex. Admin. Code § 80.127(h) (emphasis added).

(2) demonstrates that one or more provisions in the draft permit violate a specifically applicable state or federal requirement.

(i-3) If in accordance with Subsection (i-2) a party rebuts a presumption established under Subsection (i-1), the applicant and the executive director may present additional evidence to support the draft permit.

Protestants make several arguments relating to the process of rebutting the Prima Facie Demonstration and the applicable burden of proof, none of which the ALJs find persuasive. These arguments are addressed below.

First, Protestants contend the presumption associated with the Prima Facie Demonstration extends only to the Draft Permit, not the Application, based on the absence of the word "application" in Government Code section 2003.047(i-1)(1). However, section 2003.047(i-1) states that "the filing with [SOAH] of *the application*, the draft permit…and other sufficient supporting documentation in the *administrative record of the permit application*" establishes a prima facie demonstration that the draft permit meets all state and federal legal and technical requirements.[41] If the filing of an application is a requisite step in granting a presumption of compliance to a draft permit, it follows that defects in an application would need to be addressed before a draft permit is issued. The ED having proposed the Draft Permit in this case indicates that the Application met the requirements of the ED's review, subject to rebuttal as provided by section 2003.047(i-2).

[41] Tex. Gov't Code § 2003.047(i-1) (emphasis added).

Next, Protestants look to the language of federal regulations—incorporated by TCEQ as part of its federally-delegated authority over TPDES permits—to contend that the Draft Permit fails to meet applicable requirements "if there is even a *reasonable potential* that the discharge will result in a violation of the water quality standards[.]"[42] Applicant rejects this argument as a "[sleight]-of-hand" that "subverts SB 709, improperly elevating rule over statute."[43] The ED suggests that Protestants misread 40 CFR section 122.44(d) by interpreting "limitations" to be a reference to permit limitations, rather than to limitations on a state's ability to impose more stringent requirements than federal standards.[44] Finally, Protestants cite language from other SOAH PFDs interpreting SB 709 to contend that they bear a burden of production rather than a burden of persuasion.[45] Applicant and the ED reject the approach in the PFDs cited by Protestants and urge that Protestants "must do more than allege a violation, they must *demonstrate* one."[46]

The ALJs recognize that the burden-shifting process has been described in various ways over the years since SB 709 was passed, partly because there is no definition of "demonstrate" in the Government Code or TCEQ rules. Ultimately, however, ALJs and the Commission have looked to whether an applicant has met its burden of proof—either through a prima facie demonstration standing alone or

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[42] Prot. Closing Brief at 4 (emphasis in original). Protestants arrived at this argument by quoting 40 CFR § 122.44(d)(1)(i), which is incorporated by reference into 30 TAC § 305.531(4).

[43] App. Reply Brief at 3.

[44] ED Reply Brief at 6-7.

[45] Prot. Closing Brief at 5-6.

[46] App. Closing Brief at 3 (emphasis in original); *see also* ED Reply Brief at 8-9.

through the submission of additional evidence—to show, by a preponderance of the evidence, that a draft permit meets all applicable requirements. That inquiry has not changed, and in this case the ALJs look to the totality of the record evidence presented on the issues remaining after summary disposition[47] to determine whether the Prima Facie Demonstration alone or in conjunction with additional evidence preponderates in favor of finding that the Draft Permit complies with applicable law.

## B. WATER QUALITY AND THE TSWQS

The overarching policy purposes outlined by the TSWQS include "maintain[ing] the quality of water in this state consistent with public health and enjoyment, propagation and protection of terrestrial and aquatic life, operation of existing industries, and taking into consideration economic development of the state[.]"[48] TCEQ has standard procedures for implementing the TSWQS, referred to as the Implementation Procedures (IPs), which are approved by the EPA.[49]

General narrative criteria in the TSWQS, as relevant here, are that surface waters "must be maintained in an aesthetically attractive condition" and nutrients from permitted discharges "must not cause excessive growth of aquatic vegetation

[47] As noted in Order No. 3, summary disposition is appropriate if the summary disposition evidence shows there is no genuine issue of material fact such that the moving party is entitled to summary disposition as a matter of law. In Order No. 3, the ALJs found they could not rule out the existence of genuine issues of material fact as to Issues D and G and accordingly denied summary disposition on those issues. The summary disposition analysis is not a determination that Protestants met their burden of overcoming the Prima Facie Determination; rather, it is a recognition that a determination could not be made without further examination.

[48] 30 Tex. Admin. Code § 307.1.

[49] 30 Tex. Admin. Code § 307.2(e).

that impairs an existing, designated, presumed, or attainable use" of a water body.[50] As noted above, classified segments have designated ALU and corresponding minimum DO criteria—in this case, high ALU, public water supply, and primary contact recreation, with a minimum 5.0 mg/L DO for Segment 1906.

The ALU and minimum DO criteria for other waters is based on the waters' status as freshwater rather than saltwater and one of three alternative generic categorizations of their flow: (1) perennial waters, which are presumed to have high ALU (and must be supported by the 5.0 mg/L DO mean); (2) intermittent streams, which are presumed to have minimal aquatic life (and to require at least 2.0 mg/L DO); and (3) intermittent streams with perennial pools, which are presumed to have limited ALU (and to require at least 3.0 mg/L DO).[51] Relevant here, Protestants argue that the ALU designation for the portion of Helotes Creek flowing through Grey Forest should have been at least intermediate.[52] Protestants further charge that the DO modeling performed by the ED and supported by Applicant's experts is flawed and overpredicts DO concentrations that will result from the discharge, thereby underestimating the risk to Helotes Creek.

The TSWQS also require that proposed wastewater discharges undergo an antidegradation review.[53] Antidegradation review is divided into two tiers. Tier 1 requires that "[e]xisting uses and water quality sufficient to protect those existing

[50] 30 Tex. Admin. Code § 307.4(b)(4), (e).

[51] 30 Tex. Admin. Code §§ 307.4(h), .7(b)(3), figure (b)(3)(A)(i).

[52] Prot. Closing Brief at 2.

[53] 30 Tex. Admin. Code § 307.5(b).

uses must be maintained."[54] Tier 2 is more stringent and generally prohibits the lowering of water quality by more than a *de minimis* amount for "waters that exceed fishable/swimmable quality."[55] Here, Protestants contend that Helotes Creek is fishable/swimmable but that the ED ignored the requirement of a Tier 2 review for the creek.[56] They also assert that the ED's Tier 2 review failed to recognize that Segment 1906, which is already listed as impaired on some measures, will have its water quality lowered by more than a *de minimis* amount.

The IPs direct the ED, when evaluating a TPDES permit, to conduct nutrient screening to determine whether "a reduction of effluent TP is needed," and if so, to recommend an effluent limit "based on reasonably achievable technology-based limits, with consideration of the sensitivity of the site."[57] The IPs express a "Focus on Phosphorus Instead of Nitrogen" for a variety of reasons, but TN limits may be considered where existing or projected nitrogen would result in growth of nuisance aquatic vegetation, an adverse effect on public drinking water supplies, or "potential eutrophication of unusually sensitive tidal waters, such as around seagrass beds."[58]

Protestants assert that the TP limit of 0.15 mg/L proposed in the Draft Permit is inadequate to protect the existing uses of Helotes Creek because it is likely to

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[54] 30 Tex. Admin. Code § 307.5(b)(1).

[55] 30 Tex. Admin. Code § 307.5(b)(2). An exception (permitting lowering of water quality based on a showing that it is needed for important economic or social development purposes) is inapplicable here.

[56] Prot. Closing Brief at 38.

[57] ED Ex. ML-6 at 0053.

[58] ED Ex. ML-6 at 0053-54.

permit excessive algal growth. Joined by OPIC, Protestants urge that the Draft Permit should be denied for being insufficiently protective of water quality or aquatic life.[59] Alternatively, Protestants submit that a TP limit of 0.02 mg/L is appropriate based on reasonably achievable technology.[60] Protestants state the risk to Helotes Creek is exacerbated by the lack of a TN limit in the Draft Permit.

In addition, Protestants allege that groundwater quality and drinking water wells will not be protected because contaminants from Applicant's wastewater discharge could reach domestic and public water supply wells in the area due to site-specific conditions. These contaminants, which will likely include Contaminants of Emerging Concern (CECs) and per- and polyfluoroalkyl substances (PFAS), also pose a threat to human health and wildlife, Protestants argue, because of their potential to cause chronic toxicity in aquatic and terrestrial life living along or feeding from the discharge route. Relatedly, Protestants claim that locating the Facility and its incumbent discharge over a sensitive portion of the Edwards Aquifer, in an area that has experienced flooding, violates siting requirements applicable under 30 TAC chapter 309. Finally, Protestants assert the Draft Permit should be denied because there is no need for the housing development that the Facility is intended to serve.

[59] OPIC Closing Brief at 20; Prot. Closing Brief at 37-38.

[60] Prot. Closing Brief at 39-40. As an alternative to denial of the Draft Permit, OPIC suggests it be remanded to the ED for further evaluation. *See* OPIC Closing Brief at 20.

Although Applicant stated it intends to "beneficially reuse 100% of its effluent"[61] via land application, the TSWQS require the ALJs to assume that the Facility will discharge at the full 1.0 MGD volume for purposes of this PFD.[62]

# IV. DISCUSSION

## A. ISSUE A: WHETHER THE DRAFT PERMIT IS ADEQUATELY PROTECTIVE OF WATER QUALITY, INCLUDING SURFACE WATER, GROUNDWATER, AND DRINKING WATER WELLS

An assessment of water quality requires consideration of related and overlapping factors. To facilitate the discussion, the ALJs address issues regarding DO modeling first, followed by nutrient screening, antidegradation review, and toxicity concerns, and ending with a discussion of concerns regarding groundwater and drinking water wells. As stated in the discussion of the applicable burden of proof, the analysis begins with a presumption of legality, completeness, and adequacy given to the Draft Permit, and only those areas that Protestants have put into contention (and that have not been resolved on summary disposition) are addressed. The ALJs' inquiry is whether—based on the Prima Facie Demonstration standing alone or in conjunction with additional evidence—Applicant has shown by a preponderance of the evidence that the Draft Permit satisfies all applicable requirements and laws.

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[61] *See* App. Reply Brief at 4 (citing App. Ex. 7).

[62] *See* Tr. Vol. I at 143-44; Tr. Vol. III at 51.

### 1. DO Modeling

This discussion assumes that the ALU designations determined by the ED for each water body in the discharge route are correct, namely Segment 1906 (high ALU, 5.0 mg/L DO), the Pond and Helotes Creek downstream of confluence with an unnamed tributary (limited ALU, 3.0 mg/L DO), and the intermittent stream (minimal ALU, 2.0 mg/L DO). Protestants argue that the uncalibrated QUAL-TX model used by the ED and verified by Applicant's witness Dr. Miertschin is not representative of actual conditions at the outfall and in downstream water bodies and thus overestimates the DO concentrations that will exist after addition of the Draft Permit discharge. Relatedly, Protestants assert a higher ALU should have been assigned to part of Helotes Creek; that contention is addressed here only briefly, and its implications for the antidegradation review are discussed later.

#### a) Protestants' Evidence and Arguments

Dr. Ross testified that the uncalibrated QUAL-TX model used by the ED to predict DO concentrations generates unreliable and unrealistic results in this case because the model uses generic hydraulic parameters to calculate flow width, depth, and velocity.[63] The QUAL-TX model describes Helotes Creek at the outfall as having a stream width of about 25 feet, water depth of about a foot, and a velocity of 0.09 feet per second (f/s), but Dr. Ross stated that she estimates an actual stream width of "less than 8 feet" and velocity of "only 0.075 [f/s]."[64] She based her measurements on Bexar County two-foot contours, her "field notes, photographs, aerial imagery,

[63] Prot. Ex. 100 (Ross Direct) at 14.

[64] Prot. Ex. 100 (Ross Direct) at 15.

the streambed slope, and Manning's equation[.]"[65] A greater stream width "increases the water surface area exposed for water reaeration" and results in unrealistically high DO predictions.[66] Another consideration is that there "is, essentially, no shading" immediately below the proposed outfall.[67] The lack of shade increases the likelihood of an algae bloom, as does the flatness of the streambed, which provides a larger surface area "to receive sunlight and to stimulate that algae bloom."[68] In Dr. Ross's opinion, if the use of the default assumptions results in a predicted stream flow and width that "doesn't look anything like the creek that is proposed to receive the discharge…you're obligated to get numbers that better represent that stream."[69] The ED, however, failed to do so.

Another issue with the QUAL-TX model assumptions, per Dr. Ross, is that they do not actually represent "worst-case" conditions.[70] The "two critical factors are water temperature and low stream flow," which are assumed to be 30.5 degrees Celsius (30.5°C) or around 87 degrees Fahrenheit and zero ambient flow.[71] These assumptions are supposed to represent critical conditions that "would actually occur only seven days out of every two years on average [7Q2]."[72] However the situation at

[65] Prot. Ex. 100 (Ross Direct) at 15.

[66] Prot. Ex. 100 (Ross Direct) at 15.

[67] Tr. Vol. I at 139.

[68] Tr. Vol. I at 139.

[69] Tr. Vol. I at 147-48.

[70] Tr. Vol. I at 134.

[71] Tr. Vol. I at 136.

[72] Tr. Vol. I at 138.

hand is one "in which almost every single day, the effluent in the creek will constitute 100 percent of the flow…[and] summers in Texas are hot," meaning the QUAL-TX model represents "not a worst-case scenario" but "an everyday scenario."[73]

In addition to finding fault with the generic assumptions, Dr. Ross challenged the validity of the outputs. She stated that the QUAL-TX model "encompasses 63 stream flow elements," but reports DO predictions "only for two elements."[74] That is insufficient to "encompass the predicted impact of the proposed discharge on Helotes Creek."[75] She asserted that the graph of predicted DO concentrations for all modeled Helotes Creek reaches purported to show the lowest DO was 4.09 mg/L, but the lowest predicted DO was actually 2.9 mg/L in the Pond.[76] Furthermore, Dr. Ross stated, this prediction of 2.9 mg/L falls short of the ED's own ALU designation of 3.0 mg/L DO for the Pond, and the result for "all of the modeled Helotes Creek reaches also demonstrates lower predicted [DO] concentrations in each of the Helotes Creek pools through the City of Grey Forest."[77]

Dr. Ross agreed that the ED routinely uses a "margin of safety" of 0.2 mg/L for DO, meaning that the predicted value of 2.9 mg/L DO at the Pond would be deemed by the ED to satisfy the 3.0 mg/L minimum DO that is required for its

[73] Tr. Vol. I at 134-36.

[74] Tr. Vol. I at 148; Prot. Ex. 100 (Ross Direct) at 13.

[75] Prot. Ex. 100 (Ross Direct) at 13.

[76] Prot. Ex. 100 (Ross Direct) at 13.

[77] Prot. Ex. 100 (Ross Direct) at 13-14.

assigned "limited" ALU.[78] However, Dr. Ross testified, the ED justifies the "margin of safety" by reasoning that the 7Q2 conditions are unlikely to actually occur.[79] But she asserted that these conditions are more likely to occur at Helotes Creek, making it inappropriate to accept a lower predicted DO value. In sum, Dr. Ross concluded that the coefficients used by the ED for all uncalibrated models across the state produced highly unrealistic results for Helotes Creek and unreliable QUAL-TX model predictions of DO.[80]

Based on Dr. Ross's testimony, Protestants contend that the Draft Permit should be denied for failing to demonstrate that DO concentrations in the receiving waters will be adequate to meet the assigned ALU requirements. The use of inaccurate assumptions in the QUAL-TX model produces unreliable results and cannot be described as "conservative."[81] Protestants point to Dr. Ross's estimate that the stream width would more likely be 8 feet rather than 25 feet, and velocity would be 0.075 f/s rather than 0.09 f/s. Protestants also assert that other witnesses agreed with Dr. Ross that the actual stream width was narrower than 25 feet. The ED's witness Ms. Labrie said Helotes Creek at the outfall was "pretty narrow," "pretty slanted," and perhaps 4 feet wide,[82] and Applicant's witness Dr. Miertschin estimated a stream width of 10 to 15 feet.[83]

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[78] Tr. Vol. I at 132-33.

[79] Tr. Vol. I at 134.

[80] Tr. Vol. I at 142-43.

[81] Prot. Closing Brief at 28.

[82] Prot. Closing Brief at 29 (citing Tr. Vol. III at 39).

[83] Prot. Closing Brief at 29-30 (citing Tr. Vol. II at 151, 219-20, 226).

Protestants note that DO is "one of the few standards with numeric criteria," and call it especially egregious for the ED to disregard the unambiguous minimum criteria approved by EPA by accepting a 0.2 mg/L "margin of safety."[84] The ED is obligated to follow the explicit language of TCEQ's rules, and a numerical value—such as a minimum DO of 3.0 mg/L—cannot be "interpreted" as being met by a lower value.[85] According to Protestants, use of the "margin of safety" is a denial of due process and "amounts to *ad hoc* rulemaking"[86] that exceeds the Commission's statutory authority.[87]

Regarding ALU determinations, Protestants cite Ms. Labrie's agreement that the designations are preliminary and can be revised based on a new information.[88] Based on further information presented during the hearing, as detailed below, Protestants argue that Helotes Creek in Grey Forest should have been assigned at least an "intermediate" ALU.[89] In Protestants' view, the QUAL-TX model already fails to show that the Draft Permit will not reduce DO levels below the 3.0 mg/L minimum for "limited" ALU, so it will be even more harmful if the assigned DO criterion should have been higher.

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[84] Prot. Closing Brief at 22.

[85] Prot. Closing Brief at 23.

[86] Prot. Closing Brief at 22.

[87] Prot. Closing Brief at 22, 27.

[88] Prot. Closing Brief at 15.

[89] Prot. Closing Brief at 2. It is somewhat unclear which body of water Protestants are referencing. Elsewhere in their brief, Protestants state, "the unnamed tributary [should be] subject to no less than intermediate [ALU]." Prot. Closing Brief at 15.

### b) Applicant's and the ED's Evidence and Arguments

Dr. Miertschin rejected Dr. Ross's criticisms of the ED's use of generic hydraulic parameters. He explained that the uncalibrated QUAL-TX model is standard practice unless a detailed set of measurements—such as widths, depths, flows and velocities—is available for the specific water body.[90] He noted that such comprehensive data is rarely collected by TCEQ staff or provided by applicants.[91] He added that collecting such data for Helotes Creek at the discharge point is actually "impossible since there's normally no water in the stream."[92] He maintained that the default parameters are intended as reasonable approximations suitable for use in uncalibrated model scenarios.[93]

Dr. Miertschin expressed the view that the QUAL-TX model provides a sufficient representation of the proposed receiving stream.[94] He agreed it is quite possible for summer water temperatures in a Central Texas stream to exceed 30.5°C, but it is still a reasonable assumption to use for "critical conditions." Dr. Miertschin recounted that he has previously attempted to modify a single parameter—such as stream width—in situations like those in the Lower Rio Grande Valley, where width can be readily assessed using aerial imagery. However, he noted that the ED generally opposes altering individual parameters without a complete set of hydraulic data,

[90] App. Ex. 30 (Miertschin Direct) at 000716.

[91] App. Ex. 30 (Miertschin Direct) at 000716.

[92] Tr. Vol. II at 212.

[93] App. Ex. 30 (Miertschin Direct) at 000716.

[94] App. Ex. 30 (Miertschin Direct) at 000713.

including measurements for width, depth, and velocity.[95] Nonetheless, Dr. Miertschin said the QUAL-TX model is "a very conservative worst-case critical-condition model," and he expects the actual DO would be higher—not lower—if a calibrated model were to be used.[96]

Responding to Dr. Ross's criticisms of the model results, Dr. Miertschin explained that the ED's model does include predicted DO for "all 63 elements" that can be seen by making "a parameter choice that is easily changed in the model input file."[97] Regarding Dr. Ross's claim that the lowest predicted DO in the model was 4.09 mg/L at element 2,[98] Dr. Miertschin said it was "an incorrect statement that made no sense."[99] Dr. Ross was citing the "no load" scenario from the QUAL-TX model, which is unrelated to TCEQ's simulation of the proposed discharge. Instead, this scenario is a simulation conducted without any waste load to establish the background sediment oxygen demand.[100] When the correct output file is referenced, the lowest predicted DO is 2.9 mg/L at element 3 (the Pond). Dr. Miertschin emphasized that this result matches exactly with the one referenced by TCEQ, indicating there is no issue with TCEQ's work. He further opined that a value of

[95] Tr. Vol. II at 231.

[96] Tr. Vol. II at 242-43.

[97] App. Ex. 30 (Miertschin Direct) at 000717.

[98] App. Ex. 30 (Miertschin Direct) at 000717 (Dr. Miertschin's prefiled testimony references 5.89 mg/L in element 62, but Dr. Ross corrected her prefiled testimony at the hearing to reflect 4.09 mg/L at element 2). *See* Tr. Vol. I at 119.

[99] App. Ex. 30 (Miertschin Direct) at 000717.

[100] App. Ex. 30 (Miertschin Direct) at 000718.

2.9 mg/L DO is sufficiently close to 3.0 mg/L DO to be considered consistent with the ED's protocols.[101]

Dr. Miertschin presented a plot of the DO levels predicted by the ED's model as part of his testimony, demonstrating that the predicted DO values meet the assigned criteria for the entire stretch of the stream below the proposed outfall.[102] The "2.0 mg/L and 3.0 mg/L assigned DO criteria would be maintained," Dr. Miertschin concluded.[103]

Dr. Lu, the ED's witness, stated it is standard practice to use the default hydraulic coefficients and generalized equations in the model when site-specific coefficients are unavailable. "standard procedure that in the absence of site-specific coefficients, we have to use the default hydraulics coefficient and the generalized equations in our model."[104] The 30.5°C assumption is the average of the 90th percentile of water temperatures as measured at monitoring stations statewide, Dr. Lu said.[105] Zero ambient flow, full discharge flow, and 30.5°C temperature are "conservative assumptions" and make it reasonable in Dr. Lu's opinion to refer to the uncalibrated QUAL-TX model as representing a "worst-case scenario."[106] To substitute site-specific measurements into the QUAL-TX model, the ED would need

[101] Tr. Vol. II at 237.

[102] App. Ex. 30 (Miertschin Direct) at 00714 (citing App. Ex. 38).

[103] App. Ex. 30 (Miertschin Direct) at 00715.

[104] Tr. Vol. III at 85-86.

[105] Tr. Vol. III at 93-94; ED Ex. XL-7 at 0512.

[106] Tr. Vol. III at 96-97.

substantial data on the shape of the stream, width, water depth, and velocity, and would need the data to have been taken at different locations, over time, and under varying conditions to "get supportable and repeatable coefficients."[107] Thus, Dr. Ross's "one observation of…slope [or] width is not enough to refine [the ED's] model."[108] Dr. Lu stated that "randomly observed width values or velocities, or other stream characteristics on some random day at some random streamflow, or just from aerial images, are not sufficient to further refine our [default] hydraulic coefficients."[109]

Regarding the ED's application of a 0.2 mg/L "margin of safety" to DO modeling, Dr. Lu testified that ED staff found the practice to be supported by comparing self-reported data from discharges to the predicted DO values.[110] The original analysis was done in 2008, and a 2018 review confirmed that the 0.2 mg/L variance may be considered "consistent with the criteria" for DO.[111]

Applicant argues that "Protestants' criticisms are with TCEQ's methods, not their applicability to this case," and the ED's approach was fully consistent with the IPs by using an uncalibrated QUAL-TX model.[112] Notably, Applicant contends, Dr. Ross has consistently disagreed with the ED's modeling review in all cases,

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[107] Tr. Vol. III at 85-86, 105.

[108] Tr. Vol. III at 86.

[109] ED Ex. XL-1 (Lu Direct) at 0406.

[110] Tr. Vol. III at 89.

[111] Tr. Vol. III at 91-92.

[112] App. Reply Brief at 8.

except for one that she was unable to clearly remember.[113] Further, it is inaccurate and inappropriate for Dr. Ross to substitute single measurements observed on one day without more detailed site-specific or field data.[114] Applicant also rejects Protestants' claim that other witnesses agreed with Dr. Ross that a 25-foot stream width was incorrect. Applicant points out that Ms. Labrie was hesitant to hazard a guess but, when "pressed," said "maybe—like 4 feet or something," and Dr. Miertschin estimated the width to be between 10 to 15 feet but cautioned that "it would just be a wild guess to estimate what the width or depth would be at any point in time."[115]

Applicant argues that Protestants' position is contradictory because they criticize the use of a 0.2 mg/L "margin of safety" as improper and *ad hoc* rulemaking, yet simultaneously advocate for the ED to apply informal standards for PFAS and CECs that have neither been adopted nor formally developed, effectively endorsing a similarly *ad hoc* approach.[116] Moreover, Applicant argues, the Commission "has routinely allowed and upheld recently" the 0.2 mg/L DO margin of safety.[117]

The ED joins Applicant in rejecting Protestants' attempts to "substitute one specific parameter here and one specific parameter there, without vast amounts of

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[113] App. Closing Brief at 9.

[114] App. Reply Brief at 9.

[115] App. Closing Brief at 9-10; Tr. Vol. II at 213.

[116] App. Reply Brief at 10. PFAS and CECs are discussed further under Issue B, below.

[117] App. Reply Brief at 10 (citing *An Order Granting the Application by the City of Kyle for a Major Amendment to TPDES Permit No. WQ0011041002 in Hays County, Texas*; SOAH Docket No. 582-24-11454, TCEQ Docket No. 2023-1268-MWD, Finding of Fact No. 45 (Feb. 5, 2025).

supporting site-specific data or field data…to calibrate the model."[118] The ED also describes the 0.2 mg/L DO margin of safety as standard practice for modeling and concurs that it has been upheld by the Commission.[119]

### c) ALJs' Analysis

The ALJs find that the ED followed the agency's standard procedures in using default parameters for the QUAL-TX model because substantial site-specific data is unavailable for the receiving water body. Though there was considerable discussion, both at the hearing and in written briefs, about the appropriateness of describing the model as "conservative," using "critical conditions," or representing a "worst-case scenario," this terminology is beside the point. The purpose of the uncalibrated QUAL-TX model is to "ensure a high degree of permit limit consistency while allowing enough flexibility to adapt individual analyses to site-specific conditions."[120] The IPs instruct that, "[t]o the extent that site-specific information is readily available, it should be incorporated into the analysis *to improve the predictive ability* of the model."[121] In other words, as Dr. Lu put it, site-specific data should be thorough enough to generate "supportable and repeatable coefficients." Otherwise, inclusion of site-specific but inadequately supported data might degrade the predictive ability of the model rather than refining it.

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[118] ED Reply Brief at 11.

[119] ED Reply Brief at 12.

[120] ED Ex. XL-7 at 0508.

[121] ED Ex. XL-7 at 0508 (emphasis added).

The record evidence illustrates the point: Dr. Ross, Ms. Labrie, and Dr. Miertschin each made a single visit to the outfall site and provided estimates of stream width ranging from 4 feet to 15 feet. Of the three, Dr. Ross's estimate could be given greater weight because it was supported by reference to two-foot contours and application of Manning's equation. However, it is still a single measurement based on a single day's observation, and did not include depth or velocity data. As to the temperature assumption of 30.5°C, there is no evidence in the record of stream temperature measurements taken over time at Helotes Creek (or at a site that is demonstrated to be a reasonable proxy) to justify a different temperature being used.

To be clear, the ALJs do not criticize any of the witnesses for giving their best professional opinions; as Dr. Miertschin pointed out, it is nearly *impossible* to collect site-specific width, depth, and flow data for Helotes Creek at the outfall because it is normally dry. Furthermore, the ALJs are not opining on how many (or how few) measurements at a given site would be sufficient to merit site-specific alterations to the QUAL-TX model. But in this instance, the preponderant evidence supports the ED's use of an uncalibrated model as approved by EPA and directed by the IPs.

With respect to the 0.2 mg/L DO "margin of safety," there is no evidence to contradict Dr. Lu's testimony that the variance is standard modeling practice and is documented by internal studies and memoranda. Applicant and the ED urge that a recent Commission order should be read as having "upheld" the variance. Without

dwelling on this interpretation,[122] the ALJs are unaware of any case, and no party cited an instance, in which the Commission or a court has rejected a permit application on the basis that the ED's use of the 0.2 mg/L variance was improper.[123] The preponderant evidence supports the ED's determination that the QUAL-TX results predict DO concentrations sufficient to maintain the assigned ALUs for each water body in the discharge route.

Finally, the ALJs have considered Protestants' argument that ALU designations are preliminary and may be changed if new information is received. It is not necessary for purposes of this DO modeling discussion to investigate why Protestants believe part of Helotes Creek deserves an "intermediate" ALU designation. It is enough to note that an intermediate ALU has a DO criterion of 4.0 mg/L,[124] and the DO output plot Dr. Miertschin prepared from the QUAL-TX results show that by the time the discharge reaches the first perennial pool downstream on Helotes Creek, the predicted DO output is 5.0 mg/L and remains at

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[122] The finding of fact cited by Applicant and the ED reads as follows:

> 45. The standard operating procedure for the ED's QUAL-TX stream modeling indicates that the result for DO of 4.8 mg/L is suitable for meeting the DO water quality standards criterion of 5.0 mg/L, if the conservative assumptions that are part of the IPs are followed.

*City of Kyle TPDES Permit No. WQ0011041002*; SOAH Docket No. 582-24-11454, TCEQ Docket No. 2023-1268-MWD, Finding of Fact No. 45 (Feb. 5, 2025). Though the Commission included this finding as part of its final order, it does not necessarily follow that the Commission has adopted the approach for all cases. *See* Prot. Reply Brief at 11.

[123] In a recent case that is discussed in greater detail below, the Texas Supreme Court took note of TCEQ staff testimony that "'TCEQ normally assumes a departure of 0.2 mg/L [DO] as compliant.'" *Save Our Springs All., Inc. v. Tex. Comm'n on Env't Quality*, No. 23-0282, 2025 WL 1085176, at *2 n.15 (Tex. Apr. 11, 2025). The Court stated, "Whether any variance is allowable is the subject of dispute among the parties, but on the record before the Court, we need not, and therefore do not, consider the matter." *Id.* The ALJs know of no case definitively addressing the issue.

[124] ED Ex. ML-6 at 0039.

or above that level through all plotted reaches.[125] Having found the QUAL-TX modeling satisfactory, the ALJs find the DO criterion would be met or exceeded whether the ALU for Helotes Creek in Grey Forest was "limited," "intermediate," or even "high" (DO criterion of 5.0 mg/L).[126]

### 2. Nutrient Screening

The IPs direct the ED to review new or expanded domestic discharges to determine if limits are required for TP "or, in appropriate situations, total nitrogen (TN) to prevent violation of numerical nutrient criteria and/or preclude excessive growth of aquatic vegetation."[127] Protestants and OPIC argue that the 0.15 mg/L TP limit proposed in the Draft Permit is inadequate. Protestants seek denial or, in the alternative, a TP limit of 0.02 mg/L.[128] OPIC recommends either denial of the permit or remand to the ED for further evaluation. Protestants also decry the absence of a TN limit in the Draft Permit, asserting the increased nitrogen from the discharge may stimulate toxic algae blooms.[129] In their discussion of this issue, the witnesses and parties often referred to a recent TPDES permit application in Liberty Hill, Williamson County, Texas, which the ALJs will cite as the Liberty Hill facility or the *Liberty Hill* case.[130]

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[125] App. Ex. 38.

[126] *See* ED Ex. ML-6 at 0039.

[127] ED Ex. ML-6 at 0050.

[128] Prot. Closing Brief at 37-39.

[129] Prot. Closing Brief at 32.

[130] *See An Order Granting the Application by the City of Liberty Hill for Renewal of TPDES Permit No. WQ0014477001 in Williamson County, Texas*; SOAH Docket No. 582-22-1222, TCEQ Docket No. 2021-0999-MWD (Apr. 23, 2024).

### a) Protestants' Evidence and Arguments[131]

Protestants' witness Dr. Green was part of a project team at the Southwest Research Institute (SwRI) that studied the Helotes Creek watershed from 2018 to 2020.[132] Dr. Ross reviewed 15 water samples taken by that study team, finding that the TP level for 13 samples was less than the laboratory reporting limit of 0.02 mg/L.[133] She noted that a nearby monitoring station at Leon Creek also reflected TP results very close to or below the detection limit.[134] Dr. Ross's field investigation found Helotes Creek within Grey Forest has a limestone bottom that is clean, with no signs of algae present.[135] The Pond had "minor amounts" of algae, but of a variety that is "typical for that type of water impoundment," as opposed to algae blooms seen in "streams degraded by wastewater effluent."[136]

Dr. Ross testified that proposed discharge from the Facility might be diluted under wet conditions, but ordinary conditions are dry, with zero or low base flow. Therefore, "Helotes Creek flow would generally be dominated by wastewater effluent" and the background level of 0.02 mg/L TP could be expected to rise to the full permit limit of 0.15 mg/L TP, which is 7.5 times higher.[137] Dr. Ross noted that

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[131] Although OPIC did not submit evidence and did not join in all of Protestants' arguments, OPIC agreed that the proposed TP limit of 0.15 mg/L would be insufficiently protective.

[132] Prot. Ex. 200 (Green Direct) at 4.

[133] Prot. Ex. 100 (Ross Direct) at 16.

[134] Prot. Ex. 100 (Ross Direct) at 16.

[135] Prot. Ex. 100 (Ross Direct) at 10.

[136] Prot. Ex. 100 (Ross Direct) at 10.

[137] Prot. Ex. 100 (Ross Direct) at 16-17.

aquatic life in Texas Hill Country streams is adapted to low phosphorus conditions, and an increase to 0.15 mg/L TP "would significantly affect" both species diversity and the presence of algae.[138] She said species diversity has been shown to decline when TP increases from 0.02 to 0.1 mg/L, and "significant changes" in benthic algae can be seen when TP increases to more than 0.02 mg/L.[139]

In other streams, Dr. Ross has seen algae overgrowth caused by the nutrients from wastewater discharges. Based on her experience with the *Liberty Hill* case, in which she testified, Dr. Ross said Helotes Creek is at risk of algae blooms similar to those she photographed in the South Fork San Gabriel River (South Fork) downstream of the Liberty Hill facility discharge.[140] Both the South Fork and Helotes Creek at the outfall have flat streambeds and little shading, which is conducive to algae blooms.[141] Another water body she has studied, East Lick Creek, had a "clean limestone [stream] bottom," similar to Helotes Creek in Grey Forest, but after the West Cypress Hills wastewater facility began discharging, East Lick Creek "became choked with algae blooms, including long *Cladophora sp.* strands, for more than four miles downstream."[142]

Dr. Ross also expressed concern that nitrogen in the discharge could exacerbate the growth of algae. The SwRI samples from Helotes Creek showed an

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[138] Prot. Ex. 100 (Ross Direct) at 16.

[139] Prot. Ex. 100 (Ross Direct) at 16 (citing Prot. Exs. 118-119).

[140] Prot. Ex. 100 (Ross Direct) at 10 (citing Prot. Ex. 112).

[141] Tr. Vol. I at 139.

[142] Prot. Ex. 100 (Ross Direct) at 11 (citing Prot. Exs. 112-113).

average nitrate-nitrogen concentration of 0.713 mg/L TN, with the highest observed result being 2.51 mg/L TN.[143] Dr. Ross stated that facilities subject to TP limits without TN limits are "likely [to] be operated to maximize phosphorus uptake, at the expense of higher nitrate concentrations in the effluent."[144] Facilities with technology similar to the MBR system proposed under the Draft Permit have shown effluent concentrations of TN ranging from 2 to 10 mg/L and as high as 30 mg/L.[145] As with TP, the ordinarily dry conditions in Helotes Creek at the outfall means that there will be little dilution of the effluent. Nitrate can stimulate "cyanobacterial algae blooms, which contain toxins," and nitrate toxicity can affect the growth, health, life span, and reproductive ability of aquatic life.[146] High levels of nitrate can also increase the risk in humans of birth defects and cancer and other serious diseases.

Case studies from wastewater treatment plants (WWTP) in other states have shown very low TP concentrations in effluent are achievable, Dr. Ross said.[147] For example, a plant in Florida has achieved a TP concentration of 0.04 mg/L, and an EPA study found some treatment facilities that had TP concentrations "consistently near or below 0.01 mg/L."[148] Moreover, Dr. Ross pointed out that the Liberty Hill

[143] Prot. Ex. 100 (Ross Direct) at 26.

[144] Prot. Ex. 100 (Ross Direct) at 26.

[145] Prot. Ex. 100 (Ross Direct) at 26.

[146] Prot. Ex. 100 (Ross Direct) at 27.

[147] Prot. Ex. 100 (Ross Direct) at 17.

[148] Prot. Ex. 100 (Ross Direct) at 18 (citing Prot. Exs. 120-121).

facility is now subject to a limit of 0.02 mg/L TP and in 2024, it consistently produced samples measuring 0.05 mg/L TP.[149]

Protestants contend the phosphorus in the discharge proposed for Helotes Creek will cause algae to grow in violation of the general narrative requirement that surface waters must be maintained in an "aesthetically attractive condition."[150] Such conditions would also violate the narrative requirement that nutrients from permitted discharges "must not cause excessive growth of aquatic vegetation that impairs an existing, designated, presumed, or attainable use."[151] Protestants urge that, if the Draft Permit is approved, the TP limit should be set at 0.02 mg/L. They did not advocate for a specific TN limit but contend the increase in TN will contribute to algae overgrowth.

While OPIC did not propose a specific TP limit, it agreed with Protestants that a concentration of 0.15 mg/L as proposed will be insufficiently protective.[152] OPIC found it instructive that Dr. Ross saw similarities between the South Fork in the *Liberty Hill* case and Helotes Creek, such as lack of shading and a flat streambed with a large surface area to receive sunlight and promote algae growth.[153] Moreover, given that the Liberty Hill facility has achieved a 0.05 mg/L TP concentration, OPIC

[149] Tr. Vol. I at 140.

[150] Prot. Closing Brief at 37 (citing 30 Tex. Admin. Code § 307.4(a)(4)).

[151] Prot. Closing Brief at 31 (citing 30 Tex. Admin. Code § 307.4(e)).

[152] OPIC Closing Brief at 9.

[153] OPIC Closing Brief at 12.

deemed it a "reasonably-achievable technology based limit."[154] Accordingly, OPIC recommended either permit denial or "remand to the ED for further evaluation of the total phosphorus limit."[155]

### b) Applicant's and the ED's Evidence and Arguments

Mr. Price and Dr. Miertschin both opined that the proposed TP limit of 0.15 mg/L would be adequately protective of water in Helotes Creek, and the Facility's discharge would not promote nuisance-level growth of algae. Both witnesses were involved in the *Liberty Hill* case. Mr. Price said that, contrary to Dr. Ross's opinion, Helotes Creek is not similar enough to the South Fork to be a meaningful comparison.[156] The area of the South Fork that Dr. Ross photographed is "practically a farm for algae" because it has a "flat slab bottom studded with boulders" that provide "plenty of attachments for all of those filaments" visible in the photos.[157] Helotes Creek also has large boulders, but Mr. Price does not believe there will be "enough water to cover them," to create a similar problem.[158] Dr. Miertschin also distinguished Helotes Creek as "completely different" from the South Fork downstream of the Liberty Hill facility. The South Fork is a "very wide, shallow reach with complete exposure to sunlight," whereas Helotes Creek has some

[154] OPIC Closing Brief at 11.

[155] OPIC Closing Brief at 12-13.

[156] Tr. Vol. II at 185-86.

[157] Tr. Vol. II at 158.

[158] Tr. Vol. II at 159.

shading from tree canopy and "probably higher banks that could also provide shading."[159]

Regarding Dr. Ross's concern about an increase in TP from background levels in Helotes Creek based on the SwRI water samples, Dr. Miertschin questioned the reliability of the samples for that purpose. He agreed that the TP result of less than 0.02 mg/L for most of the 15 samples means that "the proposed effluent TP at 0.15 mg/L TP is relatively high."[160] However, the water samples did not account for the TP that may be present in Helotes Creek under "rainfall runoff conditions, when TP may be substantially higher in concentration."[161]

Even if 0.02 mg/L is an accurate baseline level of TP in Helotes Creek, Mr. Price said the relationship between availability of a nutrient and the response of algae or aquatic species is not a simple one.[162] Prior research showed that Hill Country streams "tended to maintain high aquatic life uses in spite of seemingly elevated levels of nutrients."[163] Specifically, he noted it is "not uncommon in undisturbed Hill Country streams" to have TP levels below the laboratory reporting level of 0.02 mg/L, but these streams generally have "notoriously hard water" with calcium, magnesium, sulfate, and iron, which all form insoluble precipitates with

[159] App. Ex. 30 (Miertschin Direct) at 000720.

[160] App. Ex. 30 (Miertschin Direct) at 000720.

[161] App. Ex. 30 (Miertschin Direct) at 000720.

[162] App. Ex. 20 (Price Direct) at 000565.

[163] Prot. Ex. 20 (Price Direct) at 000571.

phosphorus, making the phosphorus "biologically unavailable."[164] Mr. Price added that some of the algae that grow in these streams use carbon and deposit calcium carbonate, which traps phosphorus and makes it unavailable to other types of algae.[165] That process will continue with the phosphorus from the Facility's discharge, "mitigating to some extent the impacts of the additional nutrient load [and] buffer[ing] the aquatic community from major changes."[166] Mr. Price concluded that there "probably will be some [algae] that you could see" in Helotes Creek as a result of the discharge, but algae growth is "a natural thing to happen."[167]

As to nitrogen, Mr. Price said the discharge will likely increase the level of nitrate downstream of the outfall point, and "probably" in the Pond as well.[168] Importantly, he said, "[n]o one is getting their drinking water from Helotes Creek," and nitrate concentrations in the water will "decline rapidly with distance from the discharge point (some 2.2 miles from outfall to the Grey Forest community wells)."[169] He stated that the "growth rate[s] of algae plants of any kind are going to be more dependent on the phosphorus levels than [the] nitrogen level."[170]

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[164] Tr. Vol. II at 190.

[165] Tr. Vol. II at 190-91.

[166] App. Ex. 20 (Price Direct) at 000574.

[167] Tr. Vol. II at 159-60.

[168] Tr. Vol. II at 174-75.

[169] App. Ex. 20 (Price Direct) at 000574.

[170] Tr. Vol. II at 176.

Although Leon Creek (Segment 1906) is listed as impaired, Mr. Price opined, "[For] a small discharge on an intermittent stream 19 miles from Lower Leon Creek, I just don't think that really stringent [TP] standards are appropriate."[171] A TP limit of 0.50 mg/L or "even a little more might be more appropriate," Mr. Price stated.[172] Nonetheless, he said the current trend is toward more restrictive limits because "those people are sitting on their water supply, and they try to be very careful about it," and "public concern" is playing a role more than "just strict scientific considerations."[173] Dr. Miertschin agreed that a 0.50 mg/L TP limit would be more appropriate for the Facility's discharge, and in any event, there "are NO treatment plants in the State of Texas that are currently in operation and consistently meeting" a 0.02 mg/L TP limit.[174]

Ms. Labrie testified that she performed the nutrient screening in this case, which considers a variety of factors to which she assigned values ranging from 1 (low concern) to 5 (high concern).[175] The factors include proposed discharge flow rates, instream dilution, substrate type, depth, stream type, shading, impoundments, water clarity, sensitivity to growth of aquatic vegetation, existing water quality concerns and impairments, and consistency with other permits in the area.[176] The "typical" TP limit for a flow of 0.5 to 3.0 MGD is 1.0 to 0.5 mg/L, but "[h]igher or lower limits

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[171] Tr. Vol. II at 188.

[172] Tr. Vol. II at 188.

[173] Tr. Vol. II at 188-89.

[174] App. Ex. 30 (Miertschin Direct) at 000720 (emphasis in original).

[175] Tr. Vol. III at 48.

[176] ED Ex. ML-2 (Labrie Direct) at 0011.

may be recommended based on site-specific mitigating factors."[177] Nutrient screening for freshwater streams is conducted, as a "rough guide," for 15 stream miles from the discharge point if the permitted flow is 1.0 MGD or greater.[178]

The average of Ms. Labrie's assigned scores was 4.2, and the screening worksheet states that an average score equal to or greater than 4 indicates a "TP limit probably needed."[179] The worksheet notes, "If a TP limit is needed, screening factors and levels of concern can be used to determine the TP limit."[180] In determining that a 0.15 mg/L TP limit would be appropriate, Ms. Labrie said she considered the fact that Helotes Creek, where it is perennial, is a "low, low nutrient stream."[181] She agreed that, in freshwater streams that ordinarily have low nutrient levels, "small amounts of total phosphorus can have large effects," and an increase in concentrations from 0.05 mg/L to 0.15 mg/L TP is "actually a pretty big difference."[182] However, she found it "very unlikely" that adding 0.15 mg/L TP at the maximum discharge flow (1.0 MGD) would cause significant degradation in the perennial areas of Helotes Creek because of stream characteristics such as its intermittent flow, available canopy cover, and "how water will be flowing through there."[183]

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[177] ED Ex. ML-6 at 0053.

[178] ED Ex. ML-6 at 0071.

[179] ED Ex. ML-5 at 0023.

[180] ED Ex. ML-5 at 0023.

[181] Tr. Vol. III at 55.

[182] Tr. Vol. III at 57.

[183] Tr. Vol. III at 57-58.

Ms. Labrie said she reviewed the SwRI report and other materials submitted for this case.[184] However, she did not factor into consideration the baseline water quality samples from the study that Dr. Ross had relied on.[185] Ms. Labrie could not recall reading any testimony from the *Liberty Hill* case and believed the case was still in process when she did her review for the Draft Permit.[186] After hearing the testimony of other witnesses in this proceeding, Ms. Labrie said that if the Liberty Hill facility "has been achieving 0.05 mg/L…then that [level is] reasonably achievable" as a technology-based limit.[187] Nonetheless, for this Facility, she said she (together with the ED's Standards Team) considered a limit "as low as we thought would be protective," which was 0.15 mg/L TP.[188] They "didn't need to consider what was reasonably achievable because the .15 was already protective."[189]

Because the IPs focus on phosphorus instead of nitrogen, Ms. Labrie noted that TN limits are set on a case-by-case basis.[190] There are a number of reasons for focusing on TP, including that substantially less data exists on TN for Texas waters; phosphorus is a primary nutrient in freshwaters; nitrogen can be fixed directly from the atmosphere by "most of the noxious forms of blue-green algae"; and available

[184] Tr. Vol. III at 42-43.

[185] Tr. Vol. III at 42.

[186] Tr. Vol. III at 45-46.

[187] Tr. Vol. II at 47.

[188] Tr. Vol. III at 44-45.

[189] Tr. Vol. III at 47.

[190] ED Ex. ML-2 (Labrie Direct) at 11.

technologies "make reducing phosphorus more effective than reducing nitrogen as a means of limiting algal production."[191] The IPs indicate that effluent limits for TN can be considered where existing or projected nitrogen levels would result in "growth of nuisance aquatic vegetation," a substantial TN increase that could "adversely affect public drinking water supplies," for which the TN limit is 10 mg/L, or "potential eutrophication of unusually sensitive tidal waters" such as seagrass beds.[192] In this instance, Ms. Labrie did not find a TN limit to be necessary, partly because the surface water in Helotes Creek is not a public drinking water supply and Lower Leon Creek—which does serve as a public drinking water supply—is over 20 miles from the discharge point and there would be "attenuations, dilution, adherence to sediment," and other processes that would reduce the nitrogen level by that point.[193]

Applicant points out that the Application initially proposed a 1.0 mg/L TP[194] limit, which is consistent with the regulatory requirements (the "Edwards rules")[195] for discharges that are within five miles upstream of the Edwards Aquifer Recharge

[191] ED Ex. ML-6 at 0053-54.

[192] ED Ex. ML-6 at 0054.

[193] Tr. Vol. III at 23-24.

[194] *See* App. Ex. 2 (Hotchkiss Direct) at 000324.

[195] These regulations, contained in 30 Texas Administrative Code chapter 213, are sometimes referenced as the "Edwards Rules." *See, e.g.*, Tr. Vol. II at 28.

Zone,[196] even though the Facility will be slightly more than that distance away.[197] Although both Mr. Price and Dr. Miertschin believe a 0.50 mg/L TP limit would have sufficed, the 0.15 mg/L limit was "derived after much coordination by the Applicant and ED" and is site-specific.[198] That limit should not be lowered further simply because Protestants have identified out-of-state treatment plants that may have achieved lower TP levels.[199] Neither is it appropriate to impose a 0.02 mg/L TP limit merely because one has been imposed at the Liberty Hill facility, which is an existing plant (not a new application) and over 100 miles away.[200] This "blanket one-size-fits-all approach (with which OPIC unfortunately agrees)" is a subversion of the case-by-case review required by the permit process, according to Applicant.[201]

The ED accepts that some of Protestants' "imagery of East Lick Creek…bear[s] some similarity to photos provided of Helotes Creek," but that is not enough to "prove identical characteristics" between the two water bodies.[202] Protestants' contention that the 0.15 mg/L TP limit proposed in the Draft Permit will "result in thick algae mats" is based on "multiple assumptions" that are

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[196] The recharge zone is defined as the area where "the stratigraphic units constituting the Edwards Aquifer crop out, including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkholes, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer." 30 Tex. Admin. Code § 213.3(27).

[197] App. Ex. 20 (Price Direct) at 000558 (noting that Facility will be seven miles outside the recharge zone); Tr. Vol. I at 76.

[198] App. Closing Brief at 4.

[199] App. Closing Brief at 4.

[200] App. Closing Brief at 4.

[201] App. Reply Brief at 6.

[202] ED Reply Brief at 12.

insufficient to overcome the presumption of legality accorded to the Draft Permit.[203] In the ED's view, Protestants' advocacy for a 0.02 mg/L TP limit based on the *Liberty Hill* case or an even lower limit based on out-of-state facilities shows that Protestants improperly want to substitute a "best available technology standard" for the "reasonably achievable technology standard" that is in the TSWQS and IPs.[204]

### c) ALJs' Analysis

The ALJs find that a TP limit of 0.15 mg/L is justified based on the site characteristics and is sufficiently protective to "preclude excessive growth of aquatic vegetation." Assuming for the sake of discussion that the prevailing phosphorus concentration in Helotes Creek is 0.02 mg/L or less,[205] Ms. Labrie, Dr. Miertschin, Mr. Price, and Dr. Ross all agreed that an increase to 0.15 mg/L is mathematically significant. However, it does not follow that algal growth will be proportional to this increase, for a number of reasons. The ALJs find persuasive Mr. Price's testimony that, in Helotes Creek, phosphorus from the discharge will likely not be fully available for use by algae. This is because, as Mr. Price explained, Hill Country streams typically have "hard water" with mineral content that can form insoluble precipitates making phosphorus biologically unavailable for algae growth, and some algae in these streams deposit calcium carbonate that traps phosphorus. Those processes can reasonably be expected to continue occurring to reduce the availability of phosphorus in the discharge and limit adverse effects on aquatic life. Prior research

[203] ED Reply Brief at 12.

[204] ED Reply Brief at 13.

[205] The ALJs note Dr. Miertschin's testimony that the SwRI samples did not account for phosphorus in rainfall runoff conditions, which could have increased phosphorus concentrations. Also, as Applicant argues, some of the samples were taken from tributaries of Helotes Creek and not the creek itself. *See* App. Reply Brief at 15.

into impacts on Hill Country streams—though somewhat dated—further supports Applicant's and the ED's position that this discharge will not cause excessive increases in algal growth.[206]

For purposes of comparison, it is also persuasive that the proposed limit is much stricter than the Edwards rules, which would impose only a 1.0 mg/L TP limit on the Facility if it was within the recharge zone—and it is not. Moreover, the IPs state that the "typical" TP limit for a flow of 0.5 to 3.0 MGD is 1.0 to 0.5 mg/L, considerably less restrictive than the proposed limit. Comparison to the Liberty Hill facility, however, is unavailing. Protestants point to a flat streambed and lack of shading as common features of some portions of the South Fork and some portions of Helotes Creek, but that is insufficient for the ALJs to conclude that Helotes Creek will experience overgrowth of algae and require a 0.02 mg/L TP limit as has been applied to the Liberty Hill facility. Notably, Ms. Labrie assigned the highest possible score of 5 to the majority of the factors[207] in her nutrient screening review, showing that the 0.15 mg/L limit for the Draft Permit was developed conservatively. Though some algae may result in Helotes Creek, the preponderant evidence is that the proposed TP limit will avoid excessive algae growth. Regarding what is a "reasonably achievable" technology-based standard, Protestants did not cite a basis for their apparent conclusion that, if a TP limit is warranted for a discharge in Texas, it should be set at the lowest level that has been demonstrated, whether that is found at an out-of-state facility or based on the *Liberty Hill* case.

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[206] Mr. Price cited research published in 2007. *See* App. Ex. 20 (Price Direct) at 000571 (citing App. Ex. 26).

[207] Ms. Labrie assigned a score of 5 to six of the 10 factors in the nutrient screening worksheet. ED Ex. ML-5 at 0023. An eleventh factor was not applicable because this is not an existing discharge.

It is also appropriate that no TN limit is included in the Draft Permit. OPIC did not address nitrogen directly, and Protestants did not seek a specific TN limit. The presence of increased nitrogen as a result of the discharge might contribute to algal growth, but the IPs choose to focus on phosphorus rather than nitrogen for scientifically valid reasons. Ms. Labrie followed the IPs in determining no TN limit was necessary in this case, given that the TP limit is already low enough to avoid growth of nuisance algae, the only drinking water supply is nearly 20 miles away from the outfall, and no "unusually sensitive tidal waters" are at issue.

### 3. Antidegradation Review

Tier 1 antidegradation review requires that "[e]xisting uses and water quality sufficient to protect those existing uses must be maintained."[208] Tier 2 is more stringent and generally prohibits the lowering of water quality by more than a *de minimis* amount for "waters that exceed fishable/swimmable quality."[209] Protestants assert that the Facility's discharge will not preserve water quality adequate for the current uses of Helotes Creek in Grey Forest. Further, Protestants argue Helotes Creek is of "fishable/swimmable" quality, so a Tier 2 review was required and was not performed except for Lower Leon Creek/Segment 1906.

[208] 30 Tex. Admin. Code § 307.5(b)(1).

[209] 30 Tex. Admin. Code § 307.5(b)(2). An exception (permitting lowering of water quality based on a showing that it is needed for important economic or social development purposes) is inapplicable here.

### a) Protestants' Evidence and Arguments

Protestants assert that Helotes Creek as it runs through Grey Forest should be assigned at least an "intermediate" ALU. They note that a water body with a limited ALU is described in the IPs as having "uniform" habitat, no sensitive species present, few regionally expected species, low diversity, and low species richness.[210] The photographs submitted by Mr. McEntire show that Helotes Creek and its vicinity are home to several varieties of fish (crayfish, spotted bass, sun perch), several species of turtles (including red-eared baby sliders and spiny softshell turtles), and frogs such as the Rio Grande Leopard Frog.[211] In addition to a rich habitat, Helotes Creek through Grey Forest is a "wildlife sanctuary and green space for educational and recreational use."[212] Mr. McEntire testified that he learned to swim in Helotes Creek and taught his children to swim there.[213] He grew up fishing in the creek, and continues to catch crayfish, sun perch, spotted bass, largemouth bass, bluegill perch, minnows, and catfish.[214]

Dr. Ross said the current trophic state of Helotes Creek is "on a boundary between oligotrophic and mesotrophic nutrient states," indicating "stream conditions that are generally clear, clean and unpolluted by wastewater."[215] She

[210] Prot. Closing Brief at 11 (citing ED Ex. ML-6 at 0039).

[211] Prot. Closing Brief at 11-14 (citations omitted).

[212] Prot. Closing Brief at 19-20.

[213] Prot. Ex. 600 (McEntire Direct) at 3.

[214] Prot. Ex. 600 (McEntire Direct) at 4-7.

[215] Prot. Ex. 100 (Ross Direct) at 9.

explained that the EPA links eutrophication as a basis for establishing a relationship between discharge nutrient standards and biological impacts."[216] Accordingly, a "change in the Helotes Creek trophic state toward eutrophication would constitute degradation to more than a *de minimis* extent."[217]

Dr. Ross noted that Applicant did not claim the carveout in Tier 2 (a showing that lowering of water quality is "necessary for important economic or social development") should apply.[218] Therefore, Applicant had to show that no more than a *de minimis* reduction in water quality, which it failed to do on a number of parameters. The only water body in the discharge route that received a Tier 2 evaluation is Lower Leon Creek (Segment 1906), which Dr. Ross said showed impairment in the Draft 2024 Texas Integrated Report of Water Quality Impairments (Draft 2024 Integrated Report).[219] The data showed degradation of the water from its baseline (defined by law as being the "the highest water quality sustained since November 28, 1975"[220]) with respect to bacteria in water and the presence of PCBs[221] and PFAS in bottom sediments and fish tissue.[222] The report also showed what Dr. Ross termed "near-nonattainment" in Segment 1906 for chlorophyll-a, *E. coli*,

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[216] Prot. Ex. 100 (Ross Direct) at 9.

[217] Prot. Ex. 100 (Ross Direct) at 9.

[218] Prot. Ex. 100 (Ross Direct) at 3 (citing 30 Tex. Admin. Code § 307.5(b)(1)).

[219] Prot. Ex. 100 (Ross Direct) at 7 (citing Prot. Ex. 105).

[220] 30 Tex. Admin. Code § 307.5(c)(2)(B).

[221] PCBs are polychlorinated biphenyls. *See* App. Ex. 29 at 000659.

[222] Prot. Ex. 100 (Ross Direct) at 3.

and the DO grab-screening level.[223] The average TDS concentration in Lower Leon Creek is 560 mg/L, and TDS in effluent from other plants using MBR systems show concentrations of TDS ranging from 500 to 700 ml/L, so Dr. Ross testified it could not be shown that water quality would not be lowered for TDS by more than a *de minimis* extent.[224]

Protestants note that ALU designations are preliminary and may be changed if new information is received.[225] While the IPs create a presumption that intermittent streams with perennial pools have limited ALU, the IPs also state that "[h]igher uses will be maintained where they are attainable."[226] Protestants say they have provided "uncontroverted evidence" that Helotes Creek has an abundance of species present and a rich habitat, and it supports fishing, swimming, and other recreational activities—so it merits no less than an intermediate ALU. Because of what they believe is a high likelihood the discharge will cause algae to proliferate and impede the existing uses of Helotes Creek, Protestants contend a Tier 1 review would not be satisfied. If, for example, the algae include *Cladophora sp.* as found in East Lick Creek, the long strands "can impede recreational safety and enjoyment."[227]

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[223] Prot. Ex. 100 (Ross Direct) at 3.

[224] Prot. Ex. 100 (Ross Direct) at 27.

[225] Prot. Closing Brief at 15.

[226] Prot. Closing Brief at 11 (citing ED Ex. ML-6 at 0039-40).

[227] Prot. Ex. 100 (Ross Direct) at 16.

Even if a Tier 1 review could be satisfied, in light of the "uncontroverted evidence" that Helotes Creek is "swimmable" and "fishable," a Tier 2 review should have been performed. According to Protestants, Applicant claims that "a lowering of water quality is only more than *de minimis* if a use is impaired," but this "conflates the Tier 1 review and the Tier 2 review."[228] The Tier 2 review is "a parameter-specific review in which the concentration of each parameter is a reflection of water quality." If it had been performed, Protestants argue a Tier 2 review would have shown that the discharge will result in a greater than *de minimis* lowering of water quality in Helotes Creek because multiple parameters of concern would be implicated.[229]

### b) Applicant's and the ED's Evidence and Arguments

Mr. Price conceded that the general public would not find Dr. Ross's photographs of the South Fork or East Lick Creek "aesthetically pleasing."[230] He personally would have no issue wading or swimming in such waters, and has waded in the South Fork algae, but agreed that "the majority of people would hesitate to swim" there.[231] He said fishing is possible in algae-heavy waters and might be successful because fish are attracted to insects feeding on the algae during the day, but fishers might "get [their] line tangled up in algae pretty often."[232] Mr. Price acknowledged that the presence of algae affects "the fishable quality" of a water body

[228] Prot. Reply Brief at 12.

[229] Prot. Reply Brief at 31, 39.

[230] Tr. Vol. II at 163.

[231] Tr. Vol. II at 161.

[232] Tr. Vol. II at 161.

and "some people would not like" to fish in dense algae.[233] He also agreed that it would be easier to swim and fish in the downstream areas of Helotes Creek photographed by Dr. Ross and Mr. McEntire.[234] He continued to opine, however, that the TP limit of 0.15 mg/L for the discharge will protect the water quality and uses of Helotes Creek.

For Tier 2 reviews, Mr. Price rejected Dr. Ross's "interpretation that a change in water chemistry automatically equals degradation."[235] He said the practical effect of Dr. Ross's approach would be that any change in "any parameter…since November 28, 1975 represents degradation of water quality" and no new discharge permits could be issued in Texas unless the carveout (justifying degradation based on a showing of need) is met.[236]

Reviewing the Draft 2024 Integrated Report, Mr. Price refuted each of Dr. Ross's concerns that the discharge will contribute to further degradation of Segment 1906. He said the Texas Department of State Health Services issued a report linking the presence of PCBs in fish tissue sampled from Lower Leon Creek to contamination from military installations.[237] PCBs are not commonly found in domestic wastewater discharge that lacks industrial waste input, and, though PFAS may be present in the discharge, they will be present "in far lower concentrations

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[233] Tr. Vol. II at 162.

[234] Tr. Vol. II at 167.

[235] App. Ex. 20 (Price Direct) at 000578.

[236] App. Ex. 20 (Price Direct) at 000577-80.

[237] App. Ex. 20 (Price Direct) at 000579 (citing App. Ex. 29).

than in the originating households."[238] Only eight of 90 samples (8.8 percent) exceeded the screening criterion for chlorophyll-a, and only one of 201 samples (0.5 percent) exceeded the *E. coli* limit of 126 CFU/MPN per 100 ml. Of the six assessment units in Segment 1906, only one had DO grab samples fail to meet the minimum value of 3.0 mg/L, and four of the six segments had only one or zero samples fail to meet the Segment Standard criterion of 5.0 mg/L DO. Mr. Price concluded that the "explicit water quality data in the [Draft 2024 Integrated Report] …does not appear to justify" Dr. Ross's characterization of "near non-attainment" for chlorophyll-a, *E. coli*, or DO grab-screen levels. As for TDS, he said Protestants provided no evidence that the "proposed discharge of [500-700 mg/L] will significantly affect mean TDS levels [currently 486 mg/L] in Leon Creek Segment 1906, much less approach the Segment Standard [700 mg/L]."

Mr. Price also questioned the usefulness of Dr. Ross's reference to trophic states and her conclusion that a change in the Helotes Creek trophic state "toward eutrophication would constitute degradation" exceeding the *de minimis* standard. He explained that the concept of oligotrophic, mesotrophic, and eutrophic states was originally devised to "classify lakes in Wisconsin and other Midwest states" and is "not appropriately applied to an intermittent stream."[239] An intermittent stream has a "normal life cycle" with considerable variation. For example, it may be dry or running due to rainfall, it may have abundant aquatic vegetation and shrinking pools of water or abundant water and no biological community, and it may respond differently in different seasons. These variations "immensely complicate[] the

[238] The remainder of the citations in this paragraph are from Applicant Exhibit 20 (Price Direct) at 000572-76.

[239] App. Ex. 20 (Price Direct) at 000569.

problem of sorting [intermittent streams] into easily defined and regulated compartments."[240]

Ms. Labrie noted that a Tier 1 review "generally applies to waterbodies that have limited, or minimal aquatic life uses in the first three miles of the discharge route," which she completed.[241] She performed a Tier 2 review only for Lower Leon Creek, which is assigned a high ALU, and noted that Tier 2 "generally applies to waterbodies that have [] existing, designated, or presumed uses of primary and secondary contact recreation and have intermediate, high, or exceptional aquatic life designations."[242] For the Tier 2 review, she considered DO, TDS, "pH, temperature, toxic pollutants, bacteria, nutrients, taste and odor, suspended solids, turbidity, foam and froth, and oil and grease."[243]

Applicant questions the basis for Protestants' "recharacterization of Helotes Creek" as having a higher than "limited" ALU based on evidence "developed as a result of the hearing."[244] Even if a higher ALU were to be assigned, Applicant asserts the QUAL-TX modeling shows that by the time the discharge reaches the Grey Forest area, the DO is predicted to be at least 5.0 mg/L, which exceeds the minimum DO criterion for intermediate ALU.[245] Additionally, there is

[240] App. Ex. 20 (Price Direct) at 000569.

[241] ED Ex. ML-1 (Labrie Direct) at 0009.

[242] ED Ex. ML-1 (Labrie Direct) at 0009.

[243] ED Ex. ML-1 (Labrie Direct) at 0009.

[244] App. Reply Brief at 4.

[245] App. Reply Brief at 7.

no "evidence of water quality conditions on the dry Helotes Creek from the fall of 1975" to determine that its water quality "will be degraded in violation of Tier 1."[246] Applicant cites Mr. Price's analysis of the Draft 2024 Integrated Report as showing that exceedances are relatively low for Segment 1906, which properly had a Tier 2 review.[247]

The ED rejects Protestants' argument for a higher ALU to be assigned to Helotes Creek because the default assignment of limited ALU is given to intermittent streams with perennial pools unless another designation is deemed appropriate "on a case-by-case basis using available data and best professional judgment."[248] The IPs "estimate that a reviewer need only designate ALUs for the first 2.0 miles of the receiving waters downstream of the discharge point."[249] Because Helotes Creek "runs for over 14 miles before it reaches its confluence with Culebra Creek," and the evidence provided by Protestants did not show that the subject species "occur in the stretch of Helotes Creek that the [ED] analyzed for this application,"[250] the evidence did not support a different ALU designation. Also, "Tier 2 antidegradation reviews are reserved for waters that *exceed* fishable and swimmable quality" and Protestants "have not demonstrated how Helotes Creek *exceeds* the fishable and swimmable standard."[251] Even then, the ED contends, the bacteria limit (*E. coli* at

[246] App. Reply Brief at 4.

[247] App. Reply Brief at 7.

[248] ED Reply Brief at 15.

[249] ED Reply Brief at 15.

[250] ED Reply Brief at 15.

[251] ED Reply Brief at 14 (citing 30 Tex. Admin. Code § 307.5(b)(2) and ED ML-6 at 61 (Bates 0085)) (emphasis in original).

126 CFU/MFN per 100 ml) for the effluent is already set at the most stringent level, which the TSWQS assign for primary contact recreation.[252]

### c) ALJs' Analysis

Protestants argue that an ALU of "intermediate" or better should have been assigned to the part of Helotes Creek that runs through Grey Forest. It is unclear from the evidence whether Ms. Labrie intended to assign the "limited" ALU to all of Helotes Creek, or whether (per the IPs) she only assigned ALU for the first two miles of the receiving waters, which would not extend as far as Grey Forest.[253] Nonetheless, the ALJs do not find the ALU designation for Helotes Creek was incorrect. Though Protestants tout "additional information developed as a result of the hearing" as the basis for their claim, Mr. McEntire's photos and testimony were prefiled for this proceeding. Yet, Protestants did not raise the issue of ALU designation until post-hearing briefing. The timing gave Applicant and the ED little opportunity to present additional evidence to support the ALU designations used for the DO modeling and antidegradation review.

More importantly, the ALJs find the ALU that is assigned to Helotes Creek is not determinative. Even assuming for the purpose of this discussion that Helotes Creek in Grey Forest was assigned an intermediate ALU, the corresponding DO criterion is 4.0 mg/L, and, as previously mentioned, the ALJs find the QUAL-TX modeling predicts at least 5.0 mg/L DO will be achieved downstream of

[252] ED Reply Brief at 13-14.

[253] *See* Tr. Vol. III at 33.

the discharge point before the first perennial pool in Grey Forest and through the rest of the discharge route to Segment 1906. The DO required to maintain the aquatic life and wildlife should therefore be maintained. To the extent this part of Helotes Creek is used for fishing, swimming, and other recreation, the discharge is required to be treated to meet the primary contact recreation standard of 126 CFU/MFN per 100 ml of effluent for *E. coli*, so it will be protective of those activities. A Tier 1 review is satisfied whether Helotes Creek is assigned a "limited" or an "intermediate" ALU.

The ED characterizes Tier 2 review as "reserved" for water that "exceeds" fishable/swimmable criteria. While the word "exceeds" does appear in the relevant discussion in the IPs, they also state that the "second tier…generally applies to water bodies that have existing, designated, or presumed uses of primary and secondary contact recreation and *intermediate*, high, or exceptional" ALU.[254] Ms. Labrie quoted this same language in her direct testimony.[255] Thus, if Helotes Creek in Grey Forest were assigned an intermediate ALU, a Tier 2 review might apply. However, there is no evidence that would show a more than *de minimis* degradation of either Segment 1906 or Helotes Creek will occur.

In coming to this conclusion, the ALJs take note of a recent decision issued by the Texas Supreme Court that addresses the parties' disagreement regarding the nature of Tier 2 reviews, specifically whether the review is parameter-dependent or

[254] ED Ex. ML-6 at 0085 (emphasis added).

[255] ED Ex. ML-1 (Labrie Direct) at 0009.

focuses on water quality as a whole.[256] The Court found that the "proper construction and application" of the antidegradation rules and IPs supports TCEQ's "practice of assessing 'degradation' of water quality by evaluating impacts on the water body as a whole rather than affording decisive weight to numeric changes in individual water-quality parameters."[257] The Court observed that the "Tier 1 and Tier 2 antidegradation standards differ but materially overlap…[a] discharge that would impair existing uses flunks both standards [and a] discharge that lowers 'water quality' more than nominally flunks Tier 2 even if existing uses are not disturbed."[258] Moreover, Tier 2, by its plain language, focuses on "a 'lowering of water quality,' not a 'lowering of water-quality parameters' or 'water-quality components' or 'water-quality constituents.'"[259] Focusing on a single parameter, such as predicted DO, is improper; though a change in a single parameter could be significant enough to lower water quality, the "Tier 2 standard is couched in terms of the whole, not the individual parameters."[260]

Applying this approach, the ALJs agree with Mr. Price that the Draft 2024 Integrated Report does not support concerns that the proposed discharge fails a Tier 2 review for Segment 1906. While the segment is designated as impaired for some parameters, the characteristics of the proposed discharge are not likely to

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[256] The decision was issued April 11, 2025, after the parties' March 21, 2025 deadline for reply briefs, and thus is not discussed in the briefing.

[257] *Save Our Springs*, 2025 WL 1085176 at *1.

[258] *Save Our Springs*, 2025 WL 1085176 at *8.

[259] *Save Our Springs*, 2025 WL 1085176 at *10.

[260] *Save Our Springs*, 2025 WL 1085176 at *12.

contribute to those concerns. Specifically, there is no indication the Facility's discharge will contain PCBs, and PFAS are already prevalent in the environment and are not subject to any numeric standards, as discussed in greater detail below.[261] Though Segment 1906 is also listed as impaired for bacteria, only one of 201 samples (0.5 percent) exceeded the criterion for *E. coli*. There is also no evidence that the concentration of TDS expected in the discharge (between 500 and 700 mg/L) will significantly increase the current mean TDS level of 486 mg/L or cause the water body to reach the Segment Standard of 700 mg/L. Segment 1906 is the only classified segment of the discharge route and, due to its primary contact recreation designation and high ALU (requiring minimum DO of 5.0 mg/L), is the only reach that all parties can agree was required to receive a Tier 2 review. The preponderant record evidence shows that existing uses of Segment 1906, and the water quality required to maintain those uses, will be maintained. The record also preponderates in favor of a finding that the water quality as a whole in Segment 1906 will be impaired by no more than a *de minimis* amount.

Again, assuming for this discussion that Helotes Creek in Grey Forest also should have undergone Tier 2 review, the ALJs note that the discharge at the point it reaches this water body is predicted to have DO of 5.0 mg/L or above, the discharge will be treated to the primary contact recreation standard for *E. coli*, and the TP limit is proposed to be stricter than would be required even by the Edwards rules for a facility in the recharge zone (which the Facility is not). A preponderance of the evidence indicates no more than a *de minimis* reduction in water quality would result for this part of Helotes Creek if a Tier 2 review was required.

[261] The same is true for other CECs, as discussed under Issue B below.

Dr. Ross's discussion of eutrophication does examine water quality as a whole rather than on a parameter-by-parameter basis, which at first appears consistent with a Tier 2 approach. However, the ALJs do not agree that a finding of more than *de minimis* degradation can be made based on a relatively vague "transition" between eutrophication states. As Mr. Price pointed out, the trophic states paradigm was developed for use with lakes in the Midwest, and the variability in an intermittent stream's life cycle makes it difficult to understand how a baseline trophic state would logically be assigned to Helotes Creek.

### 4. Toxicity Concerns

The primary concerns raised by Protestants and discussed by the witnesses centered on PFAS and CECs. Protestants argue that the absence of regulatory standards for PFAS does not excuse Applicant (or the ED) from compliance with the general criteria in the TSWQS, such as the mandate in 30 TAC section 307.4(d) that "[s]urface water must not be toxic to man from ingestion of water, consumption of aquatic life, or contact with the skin[.]"[262] No water in the state may be "acutely toxic to aquatic life," and water that has an assigned ALU "of limited or greater must not be chronically toxic to aquatic life[.]"[263] As noted by Applicant's witness Dr. Tuttle, it is true with very few exceptions that "environmental screening values protective of aquatic life are lower than the values that are set forth for human life[,]" because of the sensitivity of species that spend their "entire lives in an aquatic

[262] Prot. Closing Brief at 7.

[263] 30 TAC § 307.6(b)(1)-(2); Prot. Closing Brief at 7.

environment[.]"[264] Thus, if standards for toxic substances are sufficiently strict to be protective of aquatic life, the water quality should also be sufficient to prevent toxicity to humans. Dr. Tuttle's testimony was uncontroverted and persuasive. The ALJs have therefore focused their analysis of water toxicity concerns on the effects to wildlife, discussed below under Issue B.

### 5. Surface Water, Groundwater, and Drinking Water Wells

Protestants allege that Applicant failed to demonstrate the Draft Permit complies with statutes and TCEQ rules regarding the maintenance of groundwater quality. Specifically, they claim that contaminants from Applicant's wastewater discharge could reach domestic and public water supply wells due to site-specific conditions, as the receiving waters are located in the Edwards Aquifer's Contributing Zone, and the proposed plant is located over the Trinity Aquifer's Recharge Zone.

Relevant here, Protestants allege, is the State's policy under TWC section 26.401(c)(1) that "discharges of pollutants, disposal of wastes, or other activities subject to regulation by state agencies be conducted in a manner that will maintain present uses and not impair potential uses of groundwater or pose a public health hazard."[265] In addition, they claim the Draft Permit violates 30 TAC section 309.12, which states:

> The [C]ommission may not issue a permit for a new facility…unless it finds that the proposed site, when evaluated in light of the proposed design, construction or operational features, minimizes possible

[264] Tr. Vol. II at 87.

[265] TWC § 26.401(c)(1).

> contamination of water in the state. In making this determination, the [C]ommission may consider…groundwater conditions such as groundwater flow rate, groundwater quality, length of flow path to points of discharge, and aquifer recharge or discharge conditions….[266]

### a) Protestants' Evidence and Arguments

Dr. Green testified that the upper reach of Helotes Creek is located in the Contributing Zone[267] of the Edwards Aquifer, which is "hydraulically well connected with the Edwards Aquifer Recharge Zone."[268] Moreover, because the upper reach of Helotes Creek is typically dry and has no base flow, he stated that discharged effluent that does not recharge into the dry riverbed will not be diluted due to the absence of perennial flow. Based on studies showing that recharge in the Edwards Aquifer Contributing Zone flows rapidly to confined areas of the aquifer at a rate of approximately one mile a day, Dr. Green opined that recharge containing Applicant's effluent will experience limited opportunity and time to be mitigated by dilution and adsorption to the substrate. As a result, he testified, contamination will move so quickly within the subsurface that pathogens will not die off prior to reaching nearby groundwater wells and will pose a threat to drinking water supplies.

This is especially noteworthy, according to Dr. Green, given that the groundwater wells used for domestic supply at Ms. Toepperwein's household and

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[266] 30 TAC § 309.12.

[267] The "Contributing Zone" of the Edwards Aquifer is the "area where precipitation falling in the area will soon flow directly over the Edwards Aquifer [R]echarge [Z]one," but "is not directly over the Recharge Zone for the Edwards Aquifer" and "is not the area where the Edwards Aquifer is exposed at the ground surface." Prot. Ex. 200 (Green Direct) at 6.

[268] Prot. Ex. 200 (Green Direct) at 5. Dr. Green's testimony as described in the remainder of this paragraph was also taken from Prot. Ex. 200 at 5.

Lynette Toepperwein Munson's household are located within a half mile of where Helotes Creek exits on Guajolote Ranch.[269] Effluent discharged to Helotes Creek upstream from the households, he asserted, could arrive at those wells within one to two days of discharge due to the karstic nature of groundwater flow in the Trinity Aquifer, from which the wells are developed.[270] In addition, he noted that numerous other neighborhood residences are located within several hundred feet of Helotes Creek.[271] Although there was no documentation regarding wells for those homes or the Toepperwein wells, due to their age predating well documentation requirements, Dr. Green testified it was likely that any such wells would have been completed in the Upper Glen Rose Aquifer—the most shallow freshwater-bearing horizon of the Trinity Aquifer.[272] Due to the absence of a protective confining layer between the discharge route and the shallow areas of the Trinity Aquifer, Dr. Green stated these "shallow wells" are at risk from contaminants discharged at the surface, as they are in close hydraulic connection to surface flow in the creek bed with exposed bedrock and minimal low-permeability sediment.[273] Applicant's witness Mr. Khorzad, for his part, conceded it was possible private wells had been completed in the Upper Trinity Aquifer.[274]

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[269] Prot. Ex. 200 (Green Direct) at 11.

[270] Prot. Ex. 200 (Green Direct) at 10, 11. He testified that a karstic aquifer has "many channels within the aquifer that water moves within," which is "different from a porous media aquifer comprised of sand or silt, in which water would move slowly and be filtered as it moves." Prot. Ex. 200 (Green Direct) at 6-7.

[271] Prot. Ex. 200 (Green Direct) at 11.

[272] Prot. Ex. 200 (Green Direct) at 10, 11-12. Dr. Green testified that the Upper Glen Rose, Lower Glen Rose, and Cow Creek Aquifers are component units of the Trinity Aquifer. Prot. Ex. 200 (Green Direct) at 10.

[273] Prot. Ex. 200 (Green Direct) at 10-11.

[274] Tr. Vol. I at 206.

Similarly, Dr. Green opined that public water supply wells operated by Grey Forest Utilities (GFU), located in the Lower Glen Rose-Cow Creek Aquifer system,[275] are at risk from contaminated recharge to the creek bed at locations where faulting provides a conduit to flow from the surface to the Lower Glen Rose Aquifer.[276] Dr. Green reported that faults were present in the area based on his review of relevant literature and personal inspection in December 2024, during which he observed exposed and fractured bedrock with limited evidence of fine-grained sediments.[277] These faults, he asserted, compromise the ability of overlying confining layers to protect the lower aquifers from downflowing contaminated recharge, and could provide conduits for the flow of contaminants into groundwater and the Edwards Aquifer.[278] Dr. Green theorized that contaminants could move from the creek bed to GFU's wells in less than 24 hours because they are located within a quarter mile of Helotes Creek and "will not have far to travel in order to move from the creekbed to the wells."[279] Given the potential for contaminants in Applicant's discharge to quickly reach nearby groundwater wells with little dilution, Protestants urge that the Draft Permit fails to adequately protect groundwater under TWC section 26.401(c)(1) and 30 TAC section 309.12.

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[275] The Middle Trinity Aquifer includes the Cow Creek Limestone, Hensell Sand, and Lower Glen Rose. *See* Prot. Ex. 106.

[276] Prot. Ex. 200 (Green Direct) at 12.

[277] Prot. Ex. 200 (Green Direct) at 7-8, 12; Prot. Ex. 203. Geologic maps reviewed by Dr. Green indicate that a "significant fault" crosses Helotes Creek's dry creek bed approximately midway between the point of effluent discharge and the point where the creek bed exits Guajolote Ranch. Prot. Ex. 200 (Green Direct) at 8-9; Prot. Ex. 203.

[278] Prot. Ex. 200 (Green Direct) at 7.

[279] Prot. Ex. 200 (Green Direct) at 12.

Protestants dispute Applicant's assertion that the Draft Permit is sufficient because it complies with the buffer zone requirements for distances from wells in 30 TAC section 309.13, suggesting that this reading would render the requirements in section 309.12 superfluous or duplicative.[280] The same is true, Protestants assert, of the ED's and Applicant's claim regarding a "long-standing policy"—not found in any TCEQ rule—that protection of surface water necessarily ensures the protection of groundwater.[281] Protestants note that chapter 309 requires the protection of groundwater separate and apart from the regulatory requirements of the TSWQS in chapter 307, indicating that distinct analyses must be performed for each issue. In further support, Protestants argue that the TSWQS and the Draft Permit establish no limit for nitrate, a contaminant subject to a primary drinking water standard of 10 mg/L that, in lower concentrations, has been linked to increased risk of colorectal, bladder, and breast cancer, as well as thyroid disease, diabetes, and birth defects.[282] Finally, Protestants allege that the location of the discharge point in relation to a sensitive aquifer is an operational feature of the Facility that must be considered when deciding under section 309.10(b) whether the proposed location is unsuitable or inappropriate.[283] They argue that this statute's considerations are not limited solely to the plant site.

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[280] Protestants' arguments relevant to this section are all found in pages 46-49 of Protestants' Closing Brief and pages 13-15 of Protestants' Reply Brief.

[281] App. Closing Br. at 15.

[282] Prot. Ex. 100 at 26-27.

[283] 30 TAC § 309.10(b).

### b) Applicant's, ED's, and OPIC's Evidence and Arguments

Applicant, the ED, and OPIC assert that Protestants failed to rebut the Prima Facie Demonstration that the Draft Permit is protective of surface water, drinking water, and drinking wells, because evidence of the presence of recharge features, without more, does not preponderate towards a finding that they will provide a pathway for contamination.

To start, Applicant alleges it is undisputed the proposed Facility satisfies 30 TAC section 309.13, which prohibits treatment units within a specified distance of drinking water supplies so as to protect drinking water quality against disease-causing microorganisms such as bacteria and *E. coli*, as Mr. Rahim testified.[284] The uncontroverted evidence demonstrated the Facility is more than 250 feet from the closest domestic water well, belonging to Ms. Toepperwein, and more than 500 feet from the closest public water supply well, operated by GFU.[285] This alone, according to Applicant, demonstrates that the Draft Permit is adequately protective of groundwater quality.[286] Moreover, Applicant and the ED agree that section 309.12 pertains to the site and location of the plant and its operational features, not groundwater migration in the discharge route, as urged by Protestants.[287]

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[284] 30 TAC § 309.13; ED Ex. AR-1 (Rahim Direct) at 0565; *see also* App. Ex. 18 (Tuttle Direct) at 000536.

[285] App. Ex. 12 (Khorzad Direct) at 000451; App. Ex. 16-17; Tr. Vol. I at 106; Prot. Ex. 500 (Remmert Direct) at 3-4; Prot. Ex. 501. Applicant notes that GFU's wells are approximately 2.2 miles from the proposed outfall. Prot. Ex. 500 (Remmert Direct) at 3-4; App. Ex. 12 (Khorzad Direct) at 000451; App. Ex. 18 (Tuttle Direct) at 000532-33.

[286] ED Ex. AR-1 (Rahim Direct) at 0565; App. Ex. 18 (Tuttle Direct) at 000532-33.

[287] Applicant also claimed, without citation to any authority, that section 309.12 generally applies to TLAP permits.

Applicant further asserts that there is no record evidence indicating the area of proposed discharge is any more sensitive than other land overlying the eight counties in which the Contributing Zone of the Edwards Aquifer is located. The Commission has already addressed the protection of groundwater and drinking water wells in this area through the Edwards rules, according to Applicant, and its proposed effluent not only complies with, but exceeds, the stringent 5/5/2/1 effluent set in 30 TAC section 213.6(c)(1).[288] Applicant also points to TCEQ's "long-standing policy" that compliance with the TSWQS, thereby ensuring protection of surface water quality, also ensures protection of groundwater quality.[289] Thus, as suggested by Mr. Rahim and Ms. Labrie's testimony, if the Draft Permit is protective of surface receiving waters and existing uses are maintained under the TSWQS, the Draft Permit should also be considered protective of groundwater.[290] Relatedly, Applicant claims there is no basis for Protestants' argument that the Draft Permit will not be protective of drinking water wells because of

[288] 30 TAC § 213.6(c)(1)(D) (establishing a 1.0 mg/L TP limit); App. Ex. 20 (Price Direct) at 000555, 000560, 000582. The components of the effluent set are, respectively, CBOD, TSS, ammonia nitrogen, and TP, all measured in mg/L. 30 TAC § 213.6(c)(A)-(D). To the extent Dr. Green takes issue with the Edwards rules and believes they should be strengthened to treat the Contributing Zone the same as the Recharge Zone and prevent any discharge in the area, Applicant argues that the matter must be addressed through rulemaking rather than denying an otherwise compliant draft permit. Prot. Ex. 200 (Green Direct) at 13-14; Tr. Vol. I at 73; *and see* 30 TAC § 213.6(a), (c) (prohibiting wastewater discharges over the Recharge Zone but not the Contributing Zone).

[289] ED-AR-1 (Rahim Direct) at 0564-65; ED Ex. ML-1 (Labrie Direct) at 0012.

[290] ED-AR-1 (Rahim Direct) at 0564-65; ED Ex. ML-1 (Labrie Direct) at 0012.

nitrate-nitrogen, since there is no nutrient or public water supply justification for a total nitrogen or nitrate limit.[291]

Even assuming that were not the case, however, Applicant, the ED, and OPIC argue that the preponderant evidence indicates groundwater quality will be protected under the Draft Permit. Applicant's witness Mr. Khorzad testified to searching for wells within a 1.5 mile radius of the proposed discharge outfall using the Texas Water Development Board Groundwater Database, Submitted Drillers Reports Database, and the BRACS database.[292] Of the 66 wells located, he confirmed all but two were completed in the Middle Trinity,[293] as were the Grey Forest Utility public water supply wells located 2.2 miles from the proposed outfall.[294]

This is significant because, according to Mr. Khorzad and several cited studies, there is no hydraulic connection between the Upper and Middle Trinity.[295] Mr. Khorzad explained the base of the Upper Trinity and the top of the Middle Trinity have massive low permeable units that act as an aquitard[296] and

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[291] Applicant's witness Dr. Tuttle, moreover, testified that Dr. Green's assumption that discharge would move through surface water into groundwater in levels at private wells equivalent to levels at the discharge point was not scientifically sound, as it did not account for degradation that would result from several processes, nor the dilution that would occur when discharge mixed with millions of gallons of groundwater before reaching any potential drinking water well. App. Ex. 18 (Tuttle Direct) at 000535-36.

[292] App. Ex. 12 (Khorzad Direct) at 000457.

[293] App. Ex. 12 (Khorzad Direct)at 000457-58; App. Ex. 14 at Appendix A; App. Exs. 16-17.

[294] App. Ex. 12 (Khorzad Direct) at 000451, 000452.

[295] App. Ex. 12 (Khorzad Direct) at 000451, 000452, 000454; *see also* App. Ex. 14 at 5 (stating the Trinity Aquifer is "made up of three aquifers, the Upper Trinity, the Middle Trinity, and the Lower Trinity").

[296] Mr. Khorzad testified that an aquitard is a "formation which limits the ability of groundwater to flow through it" and is typically composed of clay with very low permeability. App. Ex. 12 (Khorzad Direct) at 000452.

severely restrict groundwater flow vertically; consequently, there is no pathway for Applicant's wastewater to contaminate area wells.[297] Dr. Green, likewise, noted the lack of communication between the Upper and Middle Trinity that severely precludes downward migration in his Conceptual Model Report for the Hill Country Trinity Aquifer Groundwater Availability Model,[298] as did a report previously prepared by Mr. Khorzad's company for the Grey Forest Water System.[299] As for the two wells that Mr. Khorzad's investigation could not rule out as having been drilled in the Upper Trinity, one is a non-potable geothermal well, and the other is deep enough at 370 feet, according to Mr. Khorzad, to likely have been completed in the Lower Glen Rose formation of the Middle Trinity, though he could not confirm this without geophysical logs.[300] Thus, even if discharged effluent in Helotes Creek may recharge the Upper Trinity and then flow into the Edwards Aquifer, Applicant urges there is no pathway for contamination, including of nitrate-nitrogen, to the private or public wells in the area.

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[297] App. Ex. 12 (Khorzad Direct) at 000452-53, 000454.

[298] Dr. Green's report states:

> [T]he tight low-permeability interbeds in the Upper and Middle Trinity hydrostratigraphic units can severely restrict vertical flow so that groundwater moves laterally along impermeable bedding (often discharging from seeps and springs) rather than percolating into the underlying Trinity hydrostratigraphic units.... Thus, the low-permeability clays and marls of the Upper Trinity hydrostratigraphic units are thought to restrict flow into underlying units.... Given the low-permeability of the Upper Trinity hydrostratigraphic unit, little flow is expected from the overlying Edwards hydrostratigraphic unit to the Middle and Lower Trinity....

App. Ex. 15 at 88-89.

[299] App. Ex. 12 (Khorzad Direct) at 000448; App. Ex. 14. Mr. Khorzad's report states:

> The Upper Member of the Glen Rose Formation, comprising the Upper Trinity Aquifer, consists of alternating beds of limestone and dolomite with marly sections that act as aquitards and restrict downward migration of groundwater to the Middle and Lower Trinity Aquifers (Weirman et al., 2010).

App. Ex. 14 at 000476.

[300] App. Ex. 12 (Khorzad Direct) at 000457-58.

In response to Protestants' claim that faults provide potential pathways for infiltration, Applicant notes that Dr. Green agreed during his testimony the presence of a fault is not proof of communication between the Upper and Middle Trinity, nor proof of a conduit for groundwater contamination.[301] Protestants' assertion that contaminants can rapidly transport at a rate of one mile per day is also flawed, Applicant alleges, because the dye tracer study cited by Dr. Green in support of this contention had been conducted 10 miles away from Guajolote Ranch.[302] Dr. Green further conceded that no studies had been performed at Guajolote Ranch for any of the wells in question; absent such studies or proof of contaminants in the wells, Dr. Green testified there was no evidence of communication at this time, just an indication of likelihood.[303] Mr. Khorzad corroborated this statement, testifying that we can only make inferences about communication with groundwater in the absence of a dye tracer study, but will not definitively know whether that communication exists.[304]

Mr. Khorzad nevertheless refuted Dr. Green's testimony that there were likely more nonreported wells in the area that had been completed in the Upper Trinity due to cost considerations,[305] testifying that the Upper Trinity is thin in the area of

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[301] Tr. Vol. I at 105-06. Dr. Green's testimony further notes studies have shown that "faults in Trinity and Edwards rocks can act as either barriers or conduits to flow of groundwater." Prot. Ex. 200 (Green Direct) at 8; *see also* Tr. Vol. I at 86.

[302] Tr. Vol. I at 70, 109.

[303] Tr. Vol. I at 71, 113; *see also* Tr. Vol. I at 90 (stating "there's no firm way to anticipate what the flow paths are unless you put in a tracer.").

[304] Tr. Vol. II at 20-21, 22.

[305] Tr. Vol. I at 68.

Guajolote Ranch and does not produce sufficient quantities of water to be a reliable drinking water source.[306] In addition, Mr. Khorzad testified that there was no tangible evidence supporting Dr. Green's belief that the groundwater wells on the Toepperweins' property were completed in the Upper Trinity Aquifer rather than the Middle Trinity, especially considering that Mr. Khorzad's research indicated nearby wells were consistently completed in the Middle Trinity.[307]

Finally, Applicant and the ED disagree with Protestants that TWC section 26.401 is applicable in this TPDES permitting case. Applicant asserts that Section 26.401, located in subchapter J, relates to the creation of the Groundwater Protection Council and requires each state agency-member to prepare reports on groundwater contamination. Like the State's Regionalization Policy (addressed in Issue G),[308] Applicant asserts that the legislative policy of subchapter J (that existing quality of groundwater not be degraded) is stated permissively, as a goal, with the qualification that "this goal of nondegradation does not mean zero contaminant discharge."[309] The ED, meanwhile, notes that the statute describes a policy of the state that pollutants should be discharged in a way that does not impair potential uses of groundwater.[310]

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[306] App. Ex. 12 (Khorzad Direct) at 000457.

[307] Tr. Vol. II at 203-04, 210. The depths of the Toepperwein wells is unknown, and no geophysical logs or other evidence regarding their depth was offered by any party. *See, e.g.*, Tr. Vol. I at 66-67.

[308] *See* App. Closing Brief at 20.

[309] TWC § 26.401(b).

[310] TWC § 26.401(c)(1).

Ultimately, Applicant and OPIC urge that there is insufficient evidence in the record to conclude that the Toepperwein wells exist in the Upper Trinity and are thus susceptible to contamination. And collectively, Applicant, the ED, and OPIC agree that, without additional evidence showing communication between the Middle and Upper Trinity Aquifers, Protestants did not rebut the Prima Facie Demonstration that the Draft Permit is protective of surface water, ground water, and drinking water.

### c) ALJs' Analysis

The ALJs agree with Applicant and OPIC's contention that there is not enough evidence in the record to conclude that the Toepperwein wells exist in the Upper Trinity and are thus susceptible to contamination. Dr. Green testified that it was likely the two Toepperwein wells had been completed in the Upper Glen Rose Aquifer—the shallowest freshwater-bearing horizon of the Trinity Aquifer—making them in close hydraulic connection to surface flow and susceptible to undiluted discharge. Dr. Green, however, provided no evidence supporting his theory that the wells had been completed in the Upper Trinity besides their age. Mr. Khorzad, meanwhile, persuasively testified that the Toepperwein wells more likely had been completed in the Middle Trinity based on his assessment that the Upper Trinity's conditions in the Guajolote Ranch area make it an unreliable drinking water source, and a survey of nearby wells confirming that all drinking water wells except one, which lacked the necessary records for confirmation, were completed in the Middle Trinity. This, coupled with his testimony and various studies confirming there is no hydraulic pathway or connection between the Upper and Middle Trinity, preponderates against a finding that the Toepperwein's drinking

water wells—or any other unreported drinking water wells in the area—are susceptible to contamination from Applicant's discharge.

Protestants' evidence regarding faulting that may or may not affect GFU's public water wells completed in the Middle Trinity, likewise, is more speculative than probative. As several expert witnesses confirmed, the presence of faults in the area is not proof of communication or conduits for groundwater contamination between the Upper and Middle Trinity. Indeed, Dr. Green himself stated that faults can act as conduits or barriers to groundwater flow, and that only the potential for communication exists without a dye tracer study, which has not been done. Protestants have shown only that the *potential* for communication exists, which is insufficient to rebut Applicant's Prima Facie Demonstration.

Protestants' remaining arguments concerning contamination from nitrogen and violations of chapter 309 and TWC section 26.401(c)(1), likewise, are without merit absent additional evidence of a pathway between surface water and groundwater at the relevant wells. Nevertheless, the ALJs note that it is undisputed the Facility satisfies section 309.13's buffer zone requirements, in further protection of groundwater. Moreover, as Ms. Labrie and Mr. Rahim testified, by demonstrating the Draft Permit's conditions are protective of surface water, the protection of groundwater is also ensured.[311]

As for section 309.12's provisions on site selection, these considerations relate to the siting of the Facility itself, not the discharge route generally. In the same vein,

[311] App. Closing Br. at 15.

the location of the discharge point relative to a sensitive aquifer is not, as Protestants claim, an "operational feature"[312] that must be considered under chapter 309 in determining the suitability of the Facility's location. Rather, the regulation of activities and discharge in and around sensitive areas of the Edwards Aquifer to protect existing and potential uses of groundwater is already addressed in the more specific Edwards rules,[313] which Applicant has met or exceeded. The general policy provision in TWC section 26.401(c)(1) adds no additional considerations, as that statute contains legislative findings supporting the creation of an interagency committee, not the evaluation of TPDES permits. Applicant met its burden to show surface water, groundwater, and drinking water will be protected under the Draft Permit's terms.

## B. ISSUE B: WHETHER THE DRAFT PERMIT IS PROTECTIVE OF WILDLIFE, INCLUDING ENDANGERED SPECIES, IN ACCORDANCE WITH THE TSWQS IN 30 TAC CHAPTER 307

Surface waters must not be toxic to humans from the ingestion of water, consumption of aquatic organisms, or contact with the skin, or to terrestrial or aquatic life.[314] Pursuant to narrative requirements implementing the policies of the TSWQS, "[w]ater in the state must not be acutely toxic to aquatic life"[315] nor chronically toxic to aquatic life if it has designated or existing ALUs of limited or greater.[316] In addition, under 30 TAC section 307.6(b)(4), water in the state must be

[312] 30 TAC § 309.10(b).

[313] *See* 30 TAC § 213.20(a).

[314] 30 TAC § 307.4(d).

[315] 30 TAC § 307.6(b)(1).

[316] 30 TAC § 307.6(b)(2).

maintained to preclude adverse toxic effects on aquatic life, terrestrial life, livestock, or domestic animals resulting from contact or from consumption of aquatic organisms or water.[317]

Protestants assert that the above rules require the Commission to consider the impacts of toxic substances like CECs on humans and wildlife because they can result in adverse health and survival effects. The standard enumerated in 30 TAC section 307.6(4), according to Protestants, furthermore "requires [TCEQ] to impose case-specific conditions in TPDES permits to protect aquatic and aquatic-dependent species (including listed species) from the toxic effects of discharges when Texas' other toxic criteria and implementation procedures provide insufficient protection."[318]

### 1. Protestants' Evidence and Arguments

Protestants allege the evidence demonstrated a "reasonable potential" for the discharge to violate section 307.6(4) due to toxic impacts upon humans and wildlife for several reasons. First, Protestants reiterate, as alleged in response to referred Issue A, that the Draft Permit's limits—or lack thereof—for TP, nitrate-nitrogen, TDS, and CECs are insufficient to protect the fishable/swimmable quality of downstream waters, and that CECs and PFAS are considered "toxic substances."[319] Citing EPA's rule establishing primary drinking water standards for CECs,

[317] 30 TAC § 307.6(b)(4).

[318] Prot. Closing Brief at 49-50. Protestants' arguments relating to CECs are found at pages 10, 42-46, and 49-53 of their Closing Brief and pages 11-12 of their Reply Brief.

[319] Protestants' allegations regarding TP, nitrate-nitrogen, and TDS are addressed *supra* in Issue A and are not revisited here.

Protestants claim that these contaminants are toxic substances under 30 TAC sections 307.4(d) and 307.6(b) based on animal toxicity studies reporting adverse health effects, while simultaneously conceding that "no specific regulatory standards exist for CECs."[320]

Protestants further rely on the testimony of Dr. Crago regarding several areas of toxicological concern.[321] First, Dr. Crago opined "there is a potential for the discharge to impact threatened and endangered wildlife" with the watershed providing critical habitat to the Golden-cheeked Warbler and Black-capped Vireo birds, and a potential water source for several karst invertebrates, sometimes referred to as "cave bugs."[322] Notably, the Endangered Species Habitat Assessment Report prepared for Applicant by Pape-Dawson (Pape-Dawson Report) following a field visit identified six surface expression features or solution cavities (labeled S-01, S-03, S-04, S-05, S-07, and S-08) that exhibited the potential to be cave bug habitat.[323] Protestants urge that S-07, S-08, and S-09 are located in the vicinity of the discharge route,[324] and that S-07 and S-08 are cavities in bedrock that extend down vertically.[325]

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[320] *See* PFAS National Primary Drinking Water Regulation, 89 Fed. Reg. 32532 (Apr. 26, 2024).

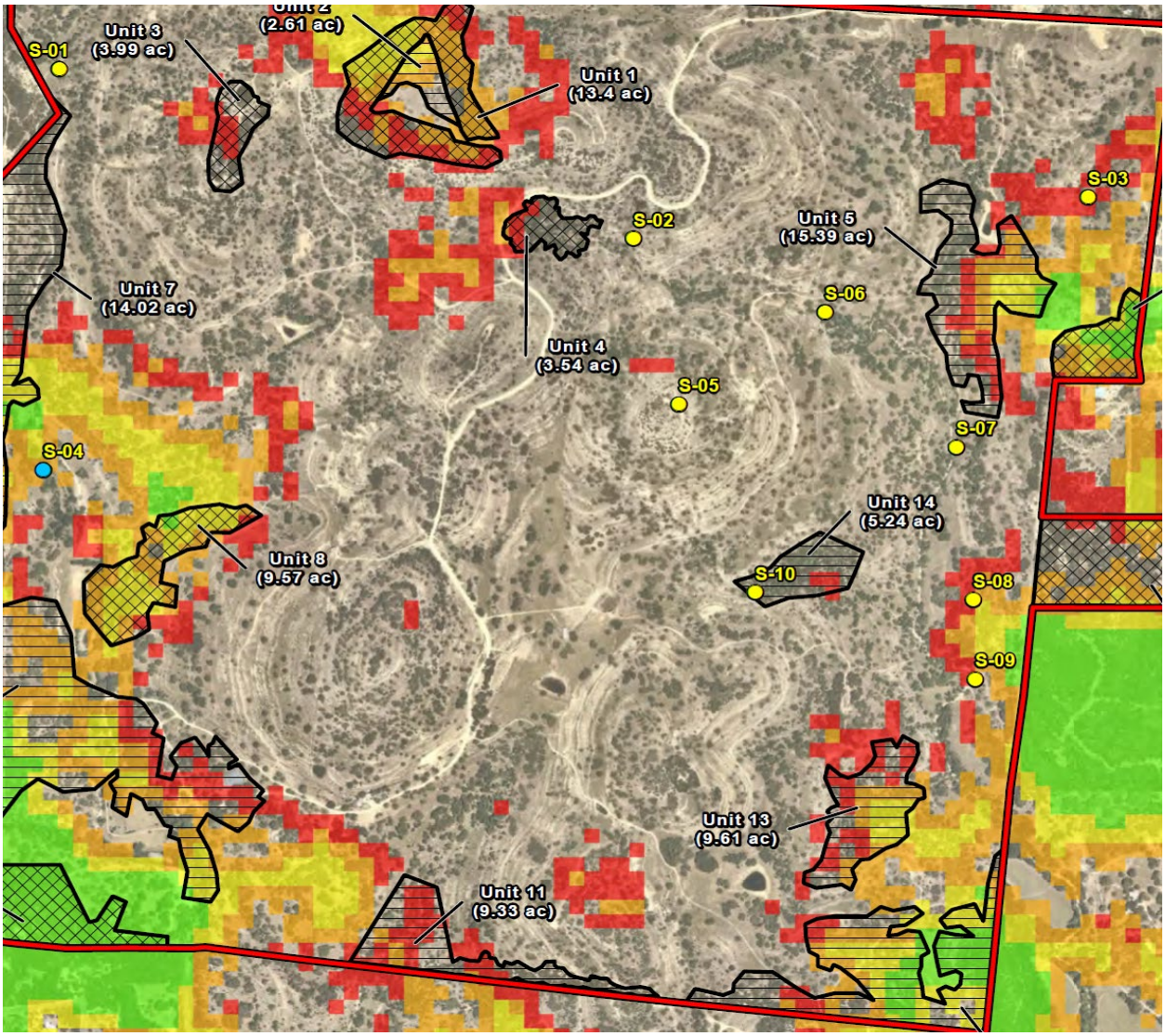
[321] Prot. Ex. 300 (Crago Direct) at 3, 5. Dr. Crago's resume was admitted as Protestant Exhibit 301.

[322] Prot. Ex. 300 (Crago Direct) at 5. Relying on the Southern Edwards Plateau Habitat Conservation Plan (Southern Edwards HCP), Dr. Crago identified resident endangered species as the two previously identified birds and the following karst invertebrates: the Government Canyon Bat Cave Spider (*Neoleptoneta microps*); Madla Cave Meshweaver (*Cicurina madla*); Braken Cave Meshweaver (*Cicurina venii*); Government Canyon Bat Cave Meshweaver (*Cicurina vespera*); Rhadine exilis (a beetle with no common name); Rhadine infernalis (a beetle with no common name); and Helotes Mold Beetle (*Batrisodes venyivi*). Prot. Ex. 300 (Crago Direct) at 5, 7-8; Prot. Ex. 302.

[323] App. Ex. 10 at 000404, 000418; Tr. Vol. I at 241. The solution cavities are identified as yellow dots in the excerpted image. App. Ex. 10 at 000418.

[324] App. Ex. 10 at 000418.

[325] App. Ex. 10 at 000403.




Dr. Crago testified that Applicant's proposed effluent, to be derived from residential housing units, would contain a number of anthropogenic compounds, including pharmaceutical and personal care products, common additives in household items (like phthalates), flame retardants (such as PFAS), brominated (PBDE) and phosphate-containing flame retardants, as well as common household

pesticides (such as fipronil and pyrethroids).[326] While Dr. Crago did not anticipate that the increased presence of anthropogenic contaminants downstream from the discharge site would cause acute mortality, he said it was reasonable to expect chronic toxicity from bioaccumulation if contaminants reach areas where species are present, such as by effluent discharge infiltrating the surrounding underground aquifer.[327]

Dr. Crago opined there would potentially be a direct impact on the population health of karst invertebrates from the discharge.[328] He asserted that the increased presence of anthropogenic contaminants would contribute to chronic toxicity during sensitive life stages such as egg-larval development and metamorphosis, when the invertebrates are most sensitive to pyrethroids, fipronil, and PFAS compounds found in the soil.[329] The Golden-cheeked Warbler and Black-capped Vireo population, he asserted, also may be affected by the transfer of waterborne contaminants from the proposed discharge through insects, an important food source that can pass on contaminants to the terrestrial environment.[330] Dr. Crago testified this may cause long-term harm not seen in short-term studies, with increased concentrations of chemicals like PFAS and PBDE moving up the food chain in predators that eat

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[326] Prot. Ex. 300 (Crago Direct) at 8. Dr. Crago testified that these products and their metabolites and transformation products are commonly found in wastewater effluent. Prot. Ex. 300 (Crago Direct) at 8.

[327] Prot. Ex. 300 (Crago Direct) at 9-10, 21; Tr. Vol. I at 241-42, 243-45. Bioaccumulation occurs when contaminants not eliminated easily through metabolism or other processes are taken in low-level concentrations and remain in organisms for long periods of time, potentially causing long-term harm. Prot. Ex. 300 (Crago Direct) at 12; Tr. Vol. I at 244-45. Dr. Crago could not, however, identify a TCEQ rule relating to the long-term effects of bioaccumulation. Tr. Vol. I at 246-47.

[328] Prot. Ex. 300 (Crago Direct) at 9.

[329] Prot. Ex. 300 (Crago Direct) at 5-6, 9-10.

[330] Prot. Ex. 300 (Crago Direct) at 5-6, 11-12.

contaminated prey, a process known as biomagnification.[331] He further noted that some studies demonstrated adult birds nesting downstream from a WWTP have higher PFAS concentrations, which they pass on to the chick, though he conceded it was difficult to determine the source of the PFAS in those studies.[332]

In addition, Dr. Crago testified there is a potential that other waterborne species downstream of the discharge could be impacted by chronic toxicity from bioaccumulation and biomagnification, including: Spotted Bass, Largemouth Bass, Sun Perch, red-eared slider turtle, black pond hawks, bullfrogs, cottonmouth snakes, crawfish/crayfish, salamanders, skinks, leeches, Texas Cichlid, the Texas Watersnake, the Texas Spiny Softshell Turtle, and pugnose minnows.[333]

The same potential impact existed for various bird species, he asserted, such as the American Bittern, Blue Heron, Great Egret, Night Heron, Wood Ducks, Black-crowned Night Heron, and Sandhill Cranes, which feed on animals in the water.[334] Citing studies showing that tree swallows and other insectivorous birds bioaccumulated effluent-associated PFAS compounds from aquatic invertebrates at or near chronic-level concentrations for PFOS in EPA's 2024 Aquatic Life Criteria standards when they nested downstream from water treatment plants, Dr. Crago

[331] Prot. Ex. 300 (Crago Direct) at 12; Tr. Vol. I at 245-46. Dr. Crago testified that these compounds have half-lives of upwards of eight years. Prot. Ex. 300 (Crago Direct) at 12.

[332] Prot. Ex. 300 (Crago Direct) at 13.

[333] Prot. Ex. 300 (Crago Direct) at 12-13.

[334] Prot. Ex. 300 (Crago Direct) at 12-13.

opined that a similar effect could occur in Helotes Creek near the effluent outfall.[335] While noting it is difficult to identify with certainty adverse outcomes that may result for bird populations with chronic exposures to PFAS, he testified that chronic exposure to PFOS and Perfluorooctanoic acid (PFOA) can lead to alteration in fat production, which can alter egg and chick size and weight and potentially impacts long-term survival, fitness, and age to first brood.[336] Dr. Crago stated that none of these potential impacts have been considered or evaluated as part of the proposed discharge.

Dr. Crago asserted that it would be important for Applicant to determine the anticipated baseline concentrations found within the effluent discharge from similar wastewater discharge facilities that draw from a comparable household demographic, naming those in Austin suburbs as an example.[337] He testified that this information would provide concentrations to base predicted insecticide and PFAS concentrations from the proposed project into Helotes Creek and ensure appropriate regulatory safeguards are in place.[338] Protestants urge such safeguards are necessary, according to Dr. Ross and Dr. Crago's testimony, because biomagnification in humans could occur from consuming contaminated aquatic organisms, and PFAS exposure can impact human health by causing suppressed antibody response, high cholesterol, kidney or testicular cancer, and fertility issues.[339]

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[335] Prot. Ex. 300 (Crago Direct) at 13-14.

[336] Prot. Ex. 300 (Crago Direct) at 6, 14. PFOA is a PFAS compound. Prot. Ex. 300 (Crago Direct) at 14.

[337] Prot. Ex. 300 (Crago Direct) at 6.

[338] Prot. Ex. 300 (Crago Direct) at 6.

[339] Prot. Ex. 100 (Ross Direct) at 21-22; Prot. Ex. 300 (Crago Direct) at 13-14.

According to Dr. Crago, the Draft Permit's acute and chronic Whole Effluent Testing (WET), or biomonitoring, requirements do not address his concerns. They rely on short-term testing that would not capture any of the potential for adverse effects for PFAS compounds from long-term exposures resulting in bioaccumulation and biomagnification, he asserted.[340] In addition, Dr. Crago criticized the Draft Permit's use of testing and exposures to the invertebrate *C. dubia*, saying it was not a representative test organism for karst invertebrates that may be impacted by the Draft Permit; instead, he argued that testing of Chironomids, or mayflies, was a more relevant comparison due to their similar development and growth stages.[341] Studies of these organisms, Dr. Crago stated, revealed that pyrethroids and fipronil are especially toxic, which resulted in the EPA setting the aquatic life benchmark at low parts-per-trillion concentrations for those chemicals.[342] Dr. Crago opined that the Draft Permit's WET sampling list is outdated and does not account for an array of chemicals that EPA has aquatic life criteria in place for, including pyrethroid and fipronil, and PFOA PFOS, and that the impacts he discussed had not been addressed in the Draft Permit.[343]

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[340] Prot. Ex. 300 (Crago Direct) at 14-15. The Draft Permit's WET requirements are found at Applicant Exhibit 1 at 000152-000186.

[341] Prot. Ex. 300 (Crago Direct) at 10-11.

[342] Prot. Ex. 300 (Crago Direct) at 11.

[343] Prot. Ex. 300 (Crago Direct) at 6, 11, 15-16. Applicant can, Dr. Crago asserted, use EPA's published standard methods in EPA Method 537.1 to test for PFAS and Method 1660 to test for pyrethroids through contract labs. Prot. Ex. 300 (Crago Direct) at 16; Prot. Exs. 304, 305. The Standards in EPA Method 537.1 concern the determination of selected PFAS in drinking water, Prot. Ex. 304 at 1-2, while Method 1660 concerns the determination of pyrethrins and pyrethroids in municipal and industrial wastewater. Prot. Ex. 305 at 1-3.

Protestants argue that Applicant failed to rebut evidence of potential harm and toxicity. Mr. Price, for example, did not know whether the karst features identified in the Pape-Dawson Report extend to a depth below the level of the stream receiving discharge, though he stated that the elevation of those solution channels—both surface expressions and full depth—were relevant to analyzing the impacts of discharge on wildlife in the features.[344] The same was true for Mr. Paulson and Ms. Labrie, who did not know how far beneath the ground the Pape-Dawson solution cavities extend, and could not rule out that they extended below the surface of the Helotes Creek streambed.[345] In addition, Mr. Price and Ms. Labrie admitted that they did not know how far karst features S07-09 were from the Helotes Creek streambed.[346]

Protestants also note that Mr. Price reported not knowing whether the karst invertebrates identified by Dr. Crago, or other animals, were living in the features.[347] In addition, Mr. Price did not rule out the potential for karst invertebrates to have a significant likelihood of encountering or being adversely affected by the discharge.[348] Regarding PFAS and PCBs,[349] Mr. Price conceded that they have some toxicity, depending on the specific components, and that longer chain compounds tend to bioaccumulate and be more toxic. However, he noted that these more toxic PFAS

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[344] Tr. Vol. II at 140-43.

[345] Tr. Vol. I at 277-78, 288; Tr. Vol. III at 73-75, 78.

[346] Tr. Vol. II at 148.

[347] Tr. Vol. II at 145-46.

[348] App. Ex. 20 (Price Direct) at 14-15.

[349] Dr. Ross's testimony regarding PCBs being found in fish tissue sampled from Lower Leon Creek is discussed in Issue A.

have been phased out of production since 2015 and that the bioaccumulation of PFAS has not been shown to be acutely toxic.[350]

Protestants also questioned testimony from Mr. Paulson suggesting the solution cavities are upstream and upslope of the discharge point, noting that he testified the discharge point is "probably" at the lowest point or one of the lower points on the property.[351] Specifically, Protestants allege that Mr. Paulson misunderstood the location of the discharge point, as he had questioned the accuracy of the location as depicted on a map provided in the Application, and refused to answer a question regarding the discharge point's location after testifying that it was located in the southeast portion of Guajalote Ranch and that S-09 was located upstream of the discharge route.[352]

### 2. Applicant's Evidence and Arguments

Applicant asserts that the Draft Permit's consistency with the TSWQS and maintenance of ALU in the receiving stream ensures there will be no adverse toxic effects on more sensitive aquatic life as well as terrestrial life, wildlife, and endangered species. According to Applicant, Protestants have not demonstrated any violation of chapter 307 relevant to the protection of wildlife or terrestrial life and are engaging in speculation that animals not shown to have been present on or downstream from Guajolote Ranch may be harmed by unregulated PFAS. Moreover,

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[350] Tr. Vol. II at 180. Mr. Price thereafter testified that long-chain perfluorinated hydrocarbon PFAS and PFOA have an "acute toxicity" and are "present in the Lower Leon Creek fish at fairly high levels, but there's no evidence of the toxicity to the fish." Tr. Vol. II at 181.

[351] Tr. Vol. I at 276-77.

[352] Tr. Vol. I at 280, 281-85; App. Ex. 1, Tab D at 000259.

they argue that Commission precedent demonstrates the Commission does not regulate CECs in TPDES permits and that Protestants impermissibly seek to enact such regulations under the guise of TCEQ's toxicity rules.

At the outset, Applicant claims the ED properly determined that EPA review was not required for the Draft Permit in relation to endangered or threatened species. This determination was based on the 1998 U.S. Fish and Wildlife Service's (USFW) Biological Opinion (Biological Opinion), which states that only aquatic and aquatic-dependent species occurring in watersheds of critical concern or high priority are considered in TPDES permitting cases.[353] Applicant witnesses Mr. Paulson and Mr. Price both testified in support of the ED's interpretation of the Biological Opinion.[354]

Specifically, Applicant notes that the critical or high priority watersheds listed in Appendix A of the Biological Opinion do not include Segment 1906—the first classified segment that Applicant's proposed discharge enters, Lower Leon Creek, or any of its reaches.[355] Additionally, the karst invertebrates, Golden-cheeked Warbler, and Black-capped Vireo are not listed aquatic or aquatic-dependent species in Appendix B of the Biological Opinion,[356] nor are any of them known to dwell on Guajolote Ranch.[357] Finally, regarding the cave bugs, Applicant points to testimony

[353] ED Ex. ML-3 at 18; ED Ex. ML-6 at 0045-48; ED Ex. ML-7; Tr. Vol. III at 12.

[354] App. Ex. 8 (Paulson Direct) at 000372; App. Ex. 20 (Price Direct) at 000561.

[355] ED Ex. ML-7 at 0380-83.

[356] ED Ex. ML-7 at 0384-87.

[357] App. Ex. 8 (Paulson Direct) at 000375, 000378; App. Ex. 11.

from Mr. Price and Ms. Labrie indicating they are terrestrial, rather than aquatic or aquatic-dependent species, because they do not have gills, are not fish, and do not live in the water.[358] Consequently, Applicant claims that the ED's endangered species evaluation was properly performed.

In addition, Applicant alleges that the evidence indicates wildlife will not suffer any adverse effects from the Draft Permit's proposed effluent. Applicant's witness Mr. Paulson[359] testified to visiting the Facility location and discharge route to assess the viability for geological surface expressions identified in the Pape-Dawson Report, areas identified by geologist George Veni as potential cave bug habitat, and if the discharge could impact karst invertebrates.[360] He stated that none of the Pape-Dawson features were recharge or sensitive features associated with Edwards limestone, which typically provide water infiltration through creeks, sinkholes, caves, and faults.[361] He further opined that the features had an "extremely low potential for cave development."[362]

In addition, Mr. Paulson determined that the nearest Critical Habitat Unit (CHU) for cave bugs is 2.7 miles downstream of the project site, near the recharge zone for the Edwards Aquifer, and that all areas identified by Mr. Veni as

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[358] Tr. Vol. II at 142; Tr. Vol. III at 16.

[359] App. Ex. 8 (Paulson Direct) at 000367, 000369.

[360] App. Ex. 8 (Paulson Direct) at 000367, 000369-71, 000372. Areas identified by George Veni are depicted on Applicant Exhibit 11.

[361] App. Ex. 8 (Paulson Direct) at 000373.

[362] App. Ex. 8 (Paulson Direct) at 000373.

potential caves or recharge features that could provide habitat for karst invertebrates are upstream and upslope of the discharge point.[363] He said the same was true for the Pape-Dawson features, which had a higher elevation than the Facility or outfall location, with the difference sometimes as great as 1,600 feet.[364] Mr. Paulson further testified that CHUs for cave bugs are found only on the Edwards Aquifer, while the features identified in the Pape-Dawson Report were on the Glen Rose Aquifer, and that most of the CHUs were "significant distances" from—and none were "in"—Helotes Creek.[365] As a result, Mr. Paulson dismissed the features as having the potential for cave development or serving as habitat for karst invertebrates and opined that the potential for treated effluent to infiltrate the features is extremely low.[366] Ultimately, Mr. Paulson concluded there will be no effect to any federally-listed species as a result of Applicant's proposed discharge and that the Draft Permit's provisions adequately protect federally-listed species.[367]

Mr. Paulson disagreed with Dr. Crago's testimony that the watershed provides critical habitat for the Golden-cheeked Warbler and Black-capped Vireo, stating that there has never been critical habitat designated for the former and that the latter was

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[363] App. Ex. 8 (Paulson Direct) at 000373; App. Ex. 11. The Pape-Dawson Report identified five CHUs in the area, all of which related to karst invertebrates and were outside of the Guajolote Ranch property. App. Ex. 8 (Paulson Direct) at 000373-74; App. Ex. 11; Tr. Vol. I at 263, 277-78.

[364] App. Ex. 8 (Paulson Direct) at 000373-74; Tr. Vol. I at 263, 277-78.

[365] App. Ex. 8 (Paulson Direct) at 000373; Tr. Vol. I at 263-64, 278; Tr. Vol. II at 141-42. After overlaying the cave locations from the five CHUs to get location data and cave depth locations to determine the base elevations of the caves in relation to the elevation of Helotes Creek as it crosses the Recharge Zone for the Edwards Aquifer, Mr. Paulson concluded that all of the base levels of cave development within the CHUs were at a higher elevation than the elevation of Helotes Creek when the creek crosses the CHU protection zones. App. Ex. 8 (Paulson Direct) at 000374.

[366] App. Ex. 8 (Paulson Direct) at 000373-74.

[367] App. Ex. 8 (Paulson Direct) at 000371, 379-80; Tr. Vol. I at 256.

delisted.[368] While Mr. Paulson agreed that the watershed is a potential water source for cave bugs, he testified they are not found in the waterway or creek.[369] He further accused Dr. Crago of making speculative statements about harm to species, the disruption of the Golden-cheeked Warbler's food supply, and impacts to cave bugs from manmade contaminants that were not supported by any evidence of correlation or a direct, indirect, or cumulative effect from wastewater discharge.[370]

Applicant's witness Mr. Price testified that the Draft Permit should be issued, as it was prepared in accordance with all applicable legal and technical requirements, including the IPs and TSWQS.[371] To evaluate listed endangered species potentially affected by the proposed discharge, and the proximity of the Helotes Creek channel to critical habitat areas, Mr. Price reviewed information indicating that only a selection of karst dependent invertebrates, three spiders and three beetles, in northwest Bexar County had any significant likelihood of encountering, or being adversely affected by, the proposed discharge.[372] None of the designated critical

[368] App. Ex. 8 (Paulson Direct) at 000378. Mr. Paulson noted that the Southern Edwards HCP relied on by Dr. Crago for that determination is a voluntary participation plan that deals with impacts from land development and is used by government units with no authority to regulate property from the Endangered Species Act standpoint. App. Ex. 8 (Paulson Direct) at 000375.

[369] App. Ex. 8 (Paulson Direct) at 000378.

[370] App. Ex. 8 (Paulson Direct) at 000375, 000377-79. Mr. Paulson gave an example wherein an assumption that the infiltration of wastewater and nonpoint source pollution in caves would result in death or injury to federally-listed invertebrate species was proven wrong—and the species actually multiplied and flourished. App. Ex. 8 (Paulson Direct) at 000376.

[371] App. Ex. 20 (Price Direct) at 000554, 000555, 000585.

[372] App. Ex. 20 (Price Direct) at 000561-62; App. Ex. 23.

habitats for those species, however, are on the Guajolote Ranch property or intersected by the Helotes Creek channel, according to Mr. Price's sources.[373]

Regarding the solution cavities identified in the Pape-Dawson Report, Mr. Price stated they are located "above the stream channel, at higher elevations" and not within the streambed, based on a quadrangle map of the surface expressions and Mr. Paulson's testimony.[374] He further ruled out the solution cavities as cave developments with endangered species because they were not located on the Edwards Aquifer and lacked air flow.[375] Mr. Price noted that all six karst invertebrates inhabit very humid but dry karst features, which can be subject to temporary flooding during rainfall-runoff events from surface runoff or rising groundwater.[376] However, Mr. Price opined that it would be difficult for the species to be affected by Applicant's effluent, as flooding would be an infrequent event and the discharge would be significantly diluted by both surface water and groundwater.[377] And while he did not know whether the cave bugs were living in the Pape-Dawson solution cavities, Mr. Price opined that they could not be living in any such features in the creek channel because, if they were, they would be flushed out every time that it rained.[378] Even assuming the animals were living in the features, Mr. Price testified that they

[373] App. Ex. 20 (Price Direct) at 000562.

[374] Tr. Vol. II at 141-42, 148.

[375] Tr. Vol. I at 289.

[376] App. Ex. 20 (Price Direct) at 000562.

[377] App. Ex. 20 (Price Direct) at 000562; App. Ex. 24.

[378] Tr. Vol. II at 145-46.

would not be affected by discharge in Helotes Creek.[379] Based on Mr. Paulson and Mr. Price's testimony, Applicant alleges that Pape-Dawson's preliminary determination of *potential* cave bug habitat has been disproven.[380]

Mr. Price also addressed concerns raised by Dr. Ross as to CECs and the presence of PCBs and PFAS in sediments and fish tissue in Segment 1906. He noted that CECs are a diverse set of materials from prescription drugs, hormones originating in human and animal waste, and commercial and industrial chemicals presently circulating in the environment. PFAS, meanwhile, have been detected in the air, soil and water, according to Mr. Price, with maximum exposure appearing to occur within the household and not surrounding media.[381]

While he agreed with Dr. Ross that PFAS may well be present in Applicant's proposed discharge, as they commonly enter waste streams from use of or exposure to common household products, Mr. Price testified they will occur in far lower concentrations than the original households.[382] He further opined that there is no evidence that would indicate how any "loading" would affect PCB/PFAS concentrations in fish tissue in Leon Creek.[383] He testified that reports from Lower Leon Creek show evidence of bioaccumulation of PFAS in fish tissue and in

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[379] Tr. Vol. II at 148.

[380] App. Ex. 10 at 000384, 000404; Tr. Vol. I at 241. Mr. Price also testified that none of designated critical habitats in the area are dissected by the Helotes Creek channel. App. Ex. 20 (Price Direct) at 000562.

[381] App. Ex. 20 (Price Direct) at 000574.

[382] App. Ex. 20 (Price Direct) at 000575-76; Tr. Vol. II at 178-79.

[383] App. Ex. 20 (Price Direct) at 000575.

sediments.[384] Nonetheless, he opined that there is no indication of toxicity or a population-level effect on the fish, which are plentiful.[385] Moreover, he testified that the evidence shows levels of PCBs and PFAS in fish tissues remain constant over a large range of fish sizes, despite the assumption that bioaccumulation would cause higher concentrations in larger-sized members of the population from them living and eating longer.[386]

Regarding CECs generally, Mr. Price and Applicant witness Dr. Tuttle stated that they are not regulated by TCEQ and not part of the TSWQS.[387] Mr. Price opined that this was due to the large number and diversity of the materials, inability to reliably document their occurrence and abundance at environmentally relevant concentrations, lack of understanding of their major sources and pathways through the environment, their persistence, and because thresholds of effect on humans or wildlife have not been established, particularly when encountered at environmental levels.[388]

Because different materials of concern may or may not be present in domestic wastewater, degrade during the treatment processes or in the environment following discharge, or have any significant effect at levels present in receiving waters, he

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[384] Tr. Vol. II at 183.

[385] Tr. Vol. II at 183.

[386] Tr Vol. II at 183.

[387] App. Ex. 18 (Tuttle Direct) at 000539-40; App. Ex. 20 (Price Direct) at 000576. Dr. Price stated that the EPA is currently focused on surveying the prevalence of these materials in public water supplies. App. Ex. 20 (Price Direct) at 000576.

[388] App. Ex. 20 (Price Direct) at 000576.

asserted that CECs cannot be regulated or claimed as a basis for permit denial, due to the lack of an applicable regulatory framework.[389] Dr. Tuttle, similarly, noted that it is difficult to establish appropriate regulations and monitoring standards for these compounds given the evolving science and limited available data, though she noted that for many chemicals, environmental concentrations are often significantly lower than the levels known to cause adverse effects in laboratory studies.[390] Relatedly, Applicant urges it would be improper to consider PFAS and CECs in this case, citing a recent Commission order finding that the CECs are "not relevant and material to TPDES permits" because "[n]o federal or state law regulates CECs in TPDES permits…."[391] Thus, they allege that testimony from Protestants' witnesses regarding CECs and PFAS should be disregarded.

Nevertheless, Mr. Price urged that the TSWQS in place and biomonitoring requirements incorporated into the Draft Permit ensure receiving waters are not toxic to humans or wildlife and that uses of the receiving waters are not impaired. Dr. Tuttle further emphasized that if the Draft Permit is protective of aquatic species, it will also be protective of human health, as the standards for aquatic life are typically more stringent given that the animals spend most or all of their lives in an aquatic environment.[392]

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[389] App. Ex. 20 (Price Direct) at 000576.

[390] App. Ex. 20 (Tuttle Direct) at 000539.

[391] *An Order Granting the Application by Highland Lakes Midlothian I, LLC for TPDES Permit No. WQ0015999001*, SOAH Docket No. 582-23-23818, TCEQ Docket No. 2023-0844-MWD, Explanation of Changes at 12 (Aug. 5, 2024).

[392] Tr. Vol. II at 87-88.

### 3. ED's Evidence and Arguments

The ED argues that the terms of the Draft Permit are protective of human health and wildlife, including endangered species, despite Protestants' claims that the Draft Permit's effluent limits are insufficient under 30 TAC section 307.6(b)(4).

Mr. Rahim, a permit writer on the Commission's Municipal Permits Team in TCEQ's Water Quality Division, testified that the Draft Permit contains provisions adequately protective of water quality, including the protection of wildlife to comply with 30 TAC chapters 307 and 309.[393] He reported that the Draft Permit will ensure the TSWQS will be maintained and the proposed discharge is protective of livestock, domestic animals, wildlife, and the environment.[394] Likewise, he opined, the proposed effluent limits will protect the uses and quality of the waterbodies in the route of the proposed discharge for the benefit of the aquatic and terrestrial life that depend on it.[395]

Ms. Labrie testified in support of the ED's interpretation of the Biological Opinion, that the Golden-cheeked Warbler and karst invertebrates relevant to this case have no critical habitat crossing with the proposed discharge site, and that the Golden-cheeked Warbler is not an aquatic or aquatic-dependent species.[396] She further opined that, if the solution cavities identified in the

[393] ED Ex. AR-1 (Rahim Direct) at 559, 565-66.

[394] ED Ex. AR-1 (Rahim Direct) at 565.

[395] ED Ex. AR-1 (Rahim Direct) at 565.

[396] Tr. Vol. III at 12-15. Ms. Labrie also testified that she consults the USFW's Environmental Conservation Online System to check for more recently listed endangered species. ED Ex. ML-1 (Labrie Direct) at 13.

Pape-Dawson Report were all uphill and higher in elevation than the creek, as Mr. Paulson stated, she would not have any concerns that the wastewater would impact the cave bugs.[397] In short, she testified that no threatened or endangered species would be impacted by the Draft Permit's proposed discharge.[398]

Ms. Lu, who performs DO modeling analyses for the ED, also testified that she believed the Draft Permit will protect aquatic life.[399] She opined that the ED's Standards Implementation Team determined the appropriate ALU and corresponding DO criteria for the receiving waters, and her DO modeling review showed the proposed limits would keep DO levels above those criteria, ensuring protection of aquatic life.[400] Regarding other wildlife, she stated that the TSWQS are otherwise protective of terrestrial life, though there are currently no standards relating to PFAS.[401]

In response to Protestants' concerns relating to the discharge's effects on karst invertebrates that could be on Applicant's property,[402] the ED argues that Protestants did not provide corroborating evidence that the solution cavities are inhabited by cave bugs. Moreover, the ED pointed to Mr. Paulson's testimony that the solution cavities do not have the ability to support karst invertebrates because the features do not have

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[397] Tr. Vol. III at 16-17.

[398] ED Ex. MD-1 (Labrie Direct) at 13.

[399] ED Ex. XL-1 (Lu Direct) at 410.

[400] ED Ex. XL-1 (Lu Direct) at 410.

[401] ED Ex. MD-7 at 7; Tr. Vol. III at 62-63, 65.

[402] *See* Prot. Ex. 300 (Crago Direct) at 5-6, 9-10; Tr. Vol. I at 241; App. Ex. 10 at 384, 404.

cave potential and are not part of the Edwards Aquifer.[403] As for Protestants' claim that the Draft Permit is not protective of several endangered species of birds, the ED asserts that birds are not an aquatic or aquatic-dependent species that are considered pursuant to the Biological Opinion relating to endangered species.[404] Given the lack of any definitive evidence of karst invertebrates in the solution features, the ED claims that there is insufficient evidence the cave bugs will experience toxic effects as a result of the discharge effluent as prohibited under 30 TAC section 307.6(b)(4).

### 4. OPIC's Arguments

OPIC states that Protestants' arguments regarding Issue B hinge on the presence of PFAS and/or CECs in Applicant's proposed effluent. Citing Dr. Crago's testimony, OPIC summarizes his chief concerns as the failure to consider the effects of contaminants such as household insecticides, pyrethroids, fipronil, and PFAS concentrations in the proposed discharge, and failure to consider baseline PFAS concentrations within discharge from similar wastewater facilities drawing from a comparable demographic.[405]

Despite sharing Protestants' concerns regarding the potential negative effects resulting from CECs and PFAS, OPIC takes the position that these and similar contaminants cannot serve as a basis for denying the Draft Permit given that they lack a governing regulatory framework. In support, OPIC noted Ms. Labrie's

[403] Tr. Vol. I at 278.

[404] *See* ED-ML-7.

[405] Prot. Ex. 300 (Crago Direct) at 5-6.

testimony that TCEQ does not account for these contaminants because there is no established guidance from EPA for PFAS.[406] Applicant's expert Dr. Tuttle likewise echoed this statement regarding the lack of any meaningful regulation with respect to CECs and PFAS. She testified that, due to the emerging nature of these compounds, limited data on their toxicity and environmental fate make it difficult to establish appropriate regulations and monitoring standards.[407]

Having already alleged that the Draft Permit does not sufficiently protect surface water quality with respect to its total phosphorus limit, and that an increased phosphorous concentration would significantly impact aquatic life, OPIC nevertheless urges that the Applicant did not meet its burden on Issue B for that reason.[408]

### 5. ALJs' Analysis

To start, the ALJs find that the ED correctly determined—based on the Biological Opinion—that EPA review was not necessary for the Draft Permit concerning endangered or threatened species. Such review was unnecessary because Segment 1906, Lower Leon Creek, and Lower Leon Creek's reaches are not included in the Biological Opinion's list of watersheds of critical concern or high priority. The cave bugs identified by Dr. Crago, the Golden-cheeked Warbler, and the Black-capped Vireo, moreover, are not aquatic or aquatic-dependent species, and the Black-capped Vireo, despite being listed in the Biological Opinion, has since been

[406] ED Ex. ML-1 (Labrie Direct) at 7.

[407] App. Ex. 18 (Tuttle Direct) at 000539-40.

[408] OPIC's position was previously addressed *supra* in Issue A and is not restated here.

delisted entirely. This does not, however, end the inquiry, as the Draft Permit must still be protective of wildlife and endangered species in accordance with chapter 307 of the TSWQS, regardless of whether EPA review was required.

Turning to this issue, the ALJs find that Applicant met its burden on Issue B. TCEQ does not account for CECs and PFAS because there is no established guidance from EPA for these contaminants with respect to TPDES permits. Although the EPA has been studying and started taking steps towards regulating CECs, PFAS, and similar constituents in certain contexts, no binding regulations exist at this time. Furthermore, the record indicates that it is difficult to establish appropriate regulations and monitoring standards given the large number and diversity of materials making up CECs, their prevalence in the environment despite uncertainty regarding their sources, and limited data regarding their toxicity and appropriate thresholds. Consequently, the ALJs do not consider the lack of limits for CECs, PFAS, or similar constituents in the Draft Permit—including any "case-specific" limits advocated by Protestants—as a basis for denying the permit.

To the extent Protestants allege that the effluent would injure or harm endangered species and wildlife from other constituents not adequately regulated by the Draft Permit, the evidence indicated that the species in question are too far removed from the waterways to be negatively impacted. The only CHUs identified near the project site were for karst invertebrates, and these CHUs are only found in the Edwards Aquifer. The closest CHU to Guajolote Ranch was located off the property, 2.7 miles downstream of the discharge point. Moreover, none of the CHUs were in or intersected by the Helotes Creek channel.

As for the solution cavities and features identified as *potential* habitat for karst invertebrates, the ALJs agree with Applicant that the preponderant evidence did not indicate cave bugs actually inhabit these features. Credible and persuasive testimony from Mr. Paulson and Mr. Price indicated the features were likely not caves due to the lack of air flow, and that they did not serve as habitat because they are in the Glen Rose, rather than the Edwards, Aquifer. Of course, even if karst invertebrates did occupy those features, the evidence preponderated against effluent reaching the solution cavities and features in question, as they were located upstream and/or upslope from the discharge point and stream channel.[409] Even still, any effluent that might reach the features due to infrequent rainfall-runoff events would be significantly diluted by surface water and groundwater, and unlikely to affect the cave bugs. Thus, the preponderant evidence did not indicate karst invertebrates would be affected by the effluent.

Taken together, Applicant has met its burden to show that the Draft Permit is protective of wildlife, including endangered species, under chapter 307 of the TSWQS, as well as protective of human health.

[409] Protestants noted some confusion during Mr. Paulson's live testimony as to the location of some of the solution cavities identified in the Pape-Dawson Report, which he said were located downstream of the discharge point. Tr. Vol. I at 280, 281-85; App. Ex. 1, Tab D at 000259. The preponderant evidence, as supported by Mr. Paulson's and other's written testimony, however, indicates that areas identified by Mr. Veni as potential karst invertebrate habitat are located upstream and upslope from the discharge point, while the solution cavities identified in the Pape-Dawson Report are located downstream from the discharge point but at higher elevations than the outfall and the stream channel. App. Ex. 8 (Paulson Direct) at 000373-74; Tr. Vol. I at 263, 277-78; Appl. Ex. 11; Tr. Vol. II at 141-42, 148.

### C. ISSUE C: WHETHER THE DRAFT PERMIT ADEQUATELY ADDRESSES NUISANCE ODOR, IN ACCORDANCE WITH 30 TAC § 309.13(E)

No party presented evidence rebutting the Prima Facie Demonstration that the Draft Permit adequately addresses nuisance odor in accordance with 30 TAC section 309.13(e), and summary disposition was granted in Applicant's favor.

### D. ISSUE D: WHETHER THE DRAFT PERMIT COMPLIES WITH SITING REQUIREMENTS REGARDING FLOOD PLAINS AND WETLANDS, IN ACCORDANCE WITH 30 TAC CHAPTER 309

The Commission's rules in 30 TAC chapter 309, subchapter B establish minimum standards for the location of domestic wastewater treatment facilities.[410] A facility's location must minimize possible contamination of ground and surface waters, minimize the possibility of exposing the public to nuisance conditions, and may not be in an area determined to be unsuitable or inappropriate, unless the designs, construction, and operational features of the facility will mitigate the unsuitable site characteristics.[411]

A WWTP may not be located in a 100-year flood plain, unless the plant unit is protected from inundation and damage that may occur during that flood event.[412] Nor

[410] 30 TAC § 309.10(a).

[411] 30 TAC § 309.10(b).

[412] 30 TAC § 309.13(a).

may a WWTP be located in a wetland.[413] Moreover, section 309.12, titled "Site Selection to Protect Water in the State," states that TCEQ may not issue a permit unless it finds that the proposed site, when evaluated in light of the proposed design, construction or operational features, and taking into consideration groundwater conditions and aquifer recharge or discharge conditions, minimizes possible contamination of water in the state.[414]

### 1. Protestants' Evidence and Arguments

Protestants allege that the Draft Permit fails to adequately protect groundwater from potential contamination under TWC section 26.401(c)(1) and 30 TAC section 309.12 and incorporate their prior arguments regarding the impact of the proposed effluent on groundwater conditions and quality in support of this position.[415]

In addition, Protestants claim that the Draft Permit does not comply with siting requirements under 30 TAC section 309.12 due to evidence of potential flooding, a "climatological condition." According to Protestants, Mr. McEntire described historic flooding directly attributable to siting the facility at its proposed location. He reported seeing Helotes Creek, downstream of the proposed discharge at Scenic Loop Road, rise over the low water crossing, and Helotes Creek at

[413] 30 TAC § 309.13(b). Wetlands are defined as areas that are inundated or saturated by water and normally support vegetation typically adapted to such conditions. 30 TAC § 309.11(10).

[414] 30 TAC § 309.12.

[415] Prot. Closing Brief at 53. Protestants refer to prior arguments from Section III, Subsection 8, of their Closing Brief, though no such section exists. It appears Protestants were referring to arguments made in Section III, Subsection 8.A.

Sherwood Trail rise six feet over the low water crossing after heavy rains.[416] He noted that flooding at Sherwood Trail caused him to be trapped for days in his neighborhood and his children's bus to be stranded, resulting in them being rescued by the fire department.[417]

Mr. McEntire reported being concerned about "increased flood risk" from Applicant's proposed discharge of 1.0 MGD of effluent.[418] He stated that his concerns were not assuaged by Applicant's proposal to reuse 100 percent of the effluent because the plant would add significant impervious cover to the land upstream of these areas, thus increasing the amount of runoff.[419]

Protestants assert that no demonstration has been made that the addition of impervious cover to upstream areas vulnerable to flooding impacts will not cause erosion and contamination of state waters. This gap, Protestants allege, constitutes a deficiency in the Application rather than a term of the Draft Permit, meaning that the prima facie presumption does not apply. However, even if the presumption were applicable, Protestants urge that Applicant failed to meet its burden on this issue.

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[416] Prot. Ex. 600 (McEntire Direct) at 7; Tr. Vol. I at 40. He stated the Sherwood Trail is located approximately two miles from the proposed outfall. Tr. Vol. I at 40.

[417] Prot. Ex. 600 (McEntire Direct) at 7; Tr. Vol. I at 39-40.

[418] Prot. Ex. 600 (McEntire Direct) at 7; Tr. Vol. I at 37-38.

[419] Tr. Vol. I at 37-38.

### 2. Applicant and ED's Evidence and Arguments

Applicant and the ED claim that the Draft Permit complies with the siting requirements in chapter 309, including the specific prohibitions in 30 TAC section 309.13 regarding locating a WWTP in a 100-year flood plain or wetland.[420]

Applicant and the ED highlight testimony from Mr. Hotchkiss, who prepared the Application and stated that site investigations showed there are no flood plains or wetlands on the site.[421] More specifically, he stated that the proposed *plant site*—which he opined is the proper subject of 30 TAC section 309.13—is not located within the 100-year flood plain or a wetland.[422] A wetlands investigation was not performed, according to Mr. Hotchkiss, because it was not required by the Commission. Mr. Hotchkiss further testified that such an investigation was unnecessary in this case based on his review of a national wetlands mapping tool and other sources, which indicated that wetlands were unlikely to be in the area. In addition, site conditions he observed at the plant site did not support typical wetlands conditions.[423] Applicant notes that Mr. McEntire did not dispute Mr. Hotchkiss's testimony regarding section 309.13's factors and was unaware of any sources indicating a 100-year floodplain is present on, or a wetland determination has been made for, Guajolote Ranch.[424]

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[420] 30 TAC § 309.13(a), (b).

[421] App. Ex. 2 (Hotchkiss Direct) at 000321, 323, 326.

[422] App. Ex. 2 (Hotchkiss Direct) at 000321, 326.

[423] App. Ex. 2 (Hotchkiss Direct) at 000327.

[424] Tr. Vol. I at 39, 41.

After performing a permit review, Mr. Rahim also determined the proposed facility would not be located in the 100-year floodplain or in a wetland, which he said satisfies the Commission's siting requirements.[425] He further agreed with Mr. Hotchkiss that section 309.13's requirements relate solely to the location of the treatment plant, not the location of the outfall or discharge route.[426]

As for Mr. McEntire's purported concerns of increased flood risks, the ED and Applicant assert that he has never visited the Facility site, conducted any floodplain studies, or reviewed any such studies.[427] Moreover, flooding—whether due to discharge, impervious cover, or some combination—is not within TCEQ's jurisdiction and is not a referred issue, according to Applicant and Mr. Rahim.[428] Finally, Applicant asserts that section 309.12 generally applies to TLAP permits and the location of the plant site but does not address the potential for groundwater migration miles away from the plant site. Thus, Applicant and the ED maintain that Protestants provided no testimony about the location of the Facility relative to the 100-year flood plain or wetlands and failed to rebut the Prima Facie Demonstration that the Draft Permit complies with floodplain and wetlands siting requirements.

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[425] ED Ex. AR-1 (Rahim Direct) at 0567; Tr. Vol. III at 178-179, 180-82.

[426] Tr. Vol. III at 179.

[427] Tr. Vol. I at 38-39.

[428] App. Ex. 2 at 000327; Tr. Vol. I at 41; Tr. Vol. III at 180; ED Closing Brief at 6; ED Reply Brief at 19. Applicant also claims this is speculative, given that only one half of the Guajolote Ranch property will be developed, and impervious cover is significantly restricted by the City of San Antonio. App. Ex. 1, Tab D, at 000304.

### 3. OPIC's Arguments

According to OPIC, Applicant has met its burden with respect to this issue because the preponderance of the evidence shows neither the plant nor the outfall would be located in wetlands or a 100-year floodplain. OPIC alleges Protestants did not present evidence disputing the testimony of Mr. Hotchkiss and Mr. Rahim that the proposed plant location is not in a 100-year floodplain and that that no further investigation of the presence of wetlands was justified based on observed site conditions and a review of wetlands mapping and survey tools.[429] While noting that Applicant's own map in the Application shows a limited 100-year floodplain on the proposed development site, OPIC argues that none of the flood plain is proximate to the proposed locations of the plant or the outfall.[430] Moreover, despite the map showing that the discharge route enters a 100-year floodplain area after it leaves the project site more than a mile downstream from the outfall, Mr. Rahim opined that it is only the location of the plant that is relevant to this analysis.[431]

### 4. ALJs' Analysis

Protestants' arguments regarding groundwater are addressed above (under Issue A) and are not reiterated here. This discussion focuses on the siting requirements regarding flood plains and wetlands, located in section 309.13. The preponderant evidence demonstrated that, pursuant to section 309.13, the WWTP

[429] App. Exs. 2, 9.

[430] App Ex. 10, Internal Ex. 3 at 000414; App. Ex. 16 (depicting proposed outfall on the northeast corner of the project site).

[431] App Ex. 10, Internal Ex. 3 at 000414; Tr. Vol. III at 179.

authorized in the Draft Permit is not located in the 100-year floodplain, nor will the plant unit be located within wetlands. Protestants offered no evidence contradicting testimony from Mr. Hotchkiss and Mr. Rahim that the Draft Permit was compliant with the siting requirements. Protestants' concerns regarding potential flooding due to discharge and/or impervious cover, meanwhile, are not within the Commission's jurisdiction and do not relate to referred issues. Accordingly, the ALJs conclude that the record demonstrates that the Draft Permit complies with the 100-year floodplain and wetland location standards.

### E. ISSUE E: WHETHER APPLICANT SUBSTANTIALLY COMPLIED WITH APPLICABLE PUBLIC NOTICE REQUIREMENTS

No party presented evidence rebutting the Prima Facie Demonstration that Applicant substantially complied with applicable public notice requirements, and summary disposition was granted in Applicant's favor.

### F. ISSUE F: WHETHER APPLICANT ADEQUATELY IDENTIFIED THE OPERATOR IN THE APPLICATION

No party presented evidence rebutting the Prima Facie Demonstration that Applicant adequately identified the operator in the Application, and summary disposition was granted in Applicant's favor.

## G. ISSUE G: WHETHER THE COMMISSION SHOULD DENY OR ALTER THE TERMS AND CONDITIONS OF THE DRAFT PERMIT BASED ON CONSIDERATION OF NEED, UNDER TWC § 26.0282 AND THE GENERAL POLICY TO PROMOTE REGIONAL OR AREA-WIDE SYSTEMS, UNDER TWC § 26.081

The Texas Legislature adopted TWC section 26.003 to encourage and promote regionalization, which provides:

> It is the policy of this state and the purpose of this subchapter to maintain the quality of water in the state consistent with the public health and enjoyment, the propagation and protection of terrestrial and aquatic life, and the operation of existing industries, taking into consideration the economic development of the state; to encourage and promote the development and use of regional and areawide waste collection, treatment, and disposal systems to serve the waste disposal needs of the citizens of the state; and to require the use of all reasonable methods to implement this policy.[432]

Under TWC section 26.081(a), it is "state policy to encourage and promote the development and use of regional and area-wide waste collection, treatment, and disposal systems…to prevent pollution and maintain and enhance the quality of the water in the state."[433]

In considering whether to issue a permit to discharge waste, the Commission may, pursuant to TWC section 26.0282, "deny or alter the terms and conditions of the proposed permit . . . based on consideration of need, including the expected volume and quality of the influent and the availability of existing or proposed

[432] TWC § 26.003; *see also* TWC § 26.002 ("It is the policy of this state and the purpose of this subchapter…to encourage and promote the development and use or regional and areawide waste collection, treatment, and disposal systems to serve the waste disposal needs of the citizens of this state ….").

[433] TWC § 26.081.

areawide or regional waste collection, treatment, and disposal systems not designated as such by [C]ommission order…."[434]

### 1. Protestants' Evidence and Arguments

According to Protestants, the "need" for a WWTP is directly dependent on the need for the housing development relied upon to justify the plant. They allege that the preponderant evidence here failed to show there is a need for Applicant's dense housing development and rebuts the Prima Facie Demonstration that Draft Permit complies with TWC section 26.0282.

In support, Protestants rely on the testimony of Mayor Garro, who stated that Grey Forest is built around Helotes Creek and has historically prided itself on developing extensive parklands, including a 28-acre wildlife sanctuary and greenspace known as the "Scenic Loop Playground" along Helotes Creek downstream of the proposed discharge.[435] In addition, Mayor Garro stated that Grey Forest actively works to limit high density developments and avoid traffic and sound pollution.[436]

Mayor Garro further described Grey Forest Resolution Nos. 2021-17R, 2022-28R, and 2022-24R, all of which expressed opposition to the development of Guajolote Ranch tract or established an oversight committee to follow and advise on

[434] TWC § 26.0282.

[435] Prot. Ex. 400 (Garro Direct) at 3, 4-5. The town motto of Grey Forest is "A Scenic Playground." Prot. Ex. 400 (Garro Direct) at 4.

[436] Prot. Ex. 400 (Garro Direct) at 8.

developments related to the project.[437] He opined that there is "no need for such a dense development" at Guajolote Ranch's proposed location, stating:

> The density of development would not only pollute our Superior Water System, it would also increase air and noise pollution with increased traffic. The development would create light pollution that destroys the privilege of enjoying the night sky and fundamentally destroys the foundational and generational purpose of the City of Grey Forest. Essentially, the City thinks the development would be contrary to the City's goals to preserve the natural resources and the natural environment in and around Grey Forest.[438]

### 2. Applicant's, ED's and OPIC's Evidence and Arguments

The Applicant, ED, and OPIC assert the Draft Permit complies with the regionalization policy articulated in TWC sections 26.0282 and 26.081. The parties note that Commission guidance regarding regionalization states TCEQ may approve applications for wastewater discharge in four situations:

1. there is no wastewater treatment facility or collection system within three miles of the proposed facility;
2. the applicant requested service from wastewater treatment facilities within the three miles, and the request was denied;
3. the applicant can successfully demonstrate that an exception to regionalization should be granted based on costs, affordable rates, and/or other relevant factors; and

[437] Prot. Ex. 400 (Garro Direct) at 7; Prot. Exs. 1, 2, 403.

[438] Prot. Ex. 400 (Garro Direct) at 8-9.

4. the applicant has obtained a Certificate of Convenience and Necessity (CCN) for the service area of the proposed new facility or the proposed expansion of the existing facility.[439]

Consequently, the ED requires applicants for a TPDES permit to state in their applications:

1. whether any portion of the proposed service area is located in an incorporated city;
2. whether any portion of the proposed service area is located inside another utility's CCN area; and
3. whether there are any domestic permitted wastewater treatment facilities or collection systems located within a three-mile radius of the proposed facility.[440]

If there is another facility or system within three miles, applicants must provide information on whether the facility has sufficient capacity and is willing to expand to accept the additional wastewater, and must provide copies of relevant correspondence with such facility.[441] Similarly, if an applicant's service area is located within another utility's CCN area, the ED demands that the applicant provide a justification for the proposed facility.[442]

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[439] TCEQ, Water Quality Division, *Evaluating Regionalization for Proposed Wastewater Systems*, RG-632 (August 2023). Available at: https://www.tceq.texas.gov/downloads/permitting/wastewater/general/regionalization-rg-632-final.pdf at 4.

[440] ED-AR-1 (Rahim Direct) at 0571; App. Ex. 1, Tab D at 000286-87. If there is another facility or system within three miles, applicants must provide information on whether the facility has sufficient capacity and is willing to expand to accept the additional wastewater and provide copies of relevant correspondence. App. Ex. I at 000286.

[441] App. Ex. 1, Tab D at 000286.

[442] *See* ED Ex. AR-1 (Rahim Direct) at 0570-71.

Mr. Rahim and Mr. Hotchkiss both testified that Applicant addressed these factors in Domestic Technical Report 1.1, Section 1, Justification for Permit. The report explained that the planned residential subdivision with approximately 2,900 living unit equivalents (LUEs) or connections would result in daily flows greater than 5,000 gallons per day and, consequently, would require a wastewater permit.[443] In addition, Applicant stated that the service area was not located in an incorporated city, there are no alternate providers within three miles, it would not be economical to transport to any facilities beyond that distance, and the San Antonio Water Service (SAWS) had declined to provide wastewater service.[444] An attachment to the Application clarified that the proposed development is within SAWS' water CCN but outside of their wastewater CCN, and that Applicant is not permitted to discharge into SAWS's wastewater system because it would have to develop infrastructure and possibly increase fees to provide service to the proposed development.[445]

As Mr. Hotchkiss testified and the Application indicated, the Medio Creek plant owned by SAWs was the closest viable alternate provider and was located 17 miles away.[446] Consequently, Mr. Hotchkiss and Mr. Rahim stated that Applicant had shown a need for the permit and that regionalization was not feasible.[447] They

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[443] ED Ex. AR-1 (Rahim Direct) at 0570; Tr. Vol. I at 179; Tr. Vol. III at 183-84, 185.

[444] App. Ex. 1, Tab D at 000286-87. The Utility Service Agreement attached to the Application's Domestic Technical Report 1.1 expressly states that the development cannot discharge into the SAWS system. App. Ex. 1, Tab D at 000303.

[445] App. Ex. 1 at 000303; App. Ex. 2 (Hotchkiss Direct) at 000329.

[446] Tr. Vol. I at 183; App. Ex. 1, Tab D at 000287. The only closer WWTP is approximately five to five and a half miles away and reportedly did not have the capacity to serve Applicant's proposed development. Tr. Vol. I at 183.

[447] App. Ex. 2 (Hotchkiss Direct) at 000328-29; ED Ex. AR-1 (Rahim Direct) at 0569–72; Tr. Vol. III at 188.

further testified that providing wastewater service by onsite sewage facilities, or septic systems, was not a viable long-term solution as it is less protective of the environment and would prevent the development from beneficially reusing its treated effluent for irrigation.[448] Mr. Hotchkiss opined that the proposed Facility is the only viable, sustainable solution, and that it would provide superior treatment to all alternatives.[449]

Although Mayor Garro opined that there was "no need for such a dense development at that location," as it is contrary to Grey Forest's goals of preserving the area's natural environment,[450] Applicant notes that the State's Regionalization Policy relates to the need for centralized wastewater treatment, not housing density.[451] Mr. Rahim and Mr. Hotchkiss respectively testified that the Commission does not regulate housing density or direct land development in any way, other than regulating the associated discharges,[452] and there is no authority indicating TCEQ has jurisdiction over light and noise pollution or increased traffic. Furthermore, the State's Regionalization Policy is permissively stated as a goal to encourage and promote regionalization and is not a mandate.[453]

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[448] Appl. Ex. 2 (Hotchkiss Direct) at 000329; Tr. Vol. I at 180-81; Tr. Vol. III at 187-88.

[449] App. Ex. 2 (Hotchkiss Direct) at 000329; Tr. Vol. I at 180.

[450] Prot. Ex. 400 (Garro Direct) at 8-9.

[451] Tr. Vol. III at 186.

[452] Tr. Vol. I at 182-83.

[453] *See Order Granting the Application by Crystal Clear Special Utility District and MCLB Land, LLC for TPDES Permit No. WQ0015266002*, SOAH Docket No. 582-20-4141, TCEQ Docket No. 2020-0411-MWD, Conclusion of Law No. 13 ( June 14, 2021).

The ED, Applicant, and OPIC urge that Applicant provided information showing a need under current development plans and that no facilities were available to accept their flows within three miles of the proposed facility.[454] Because Protestants did not present sufficient evidence rebutting the Prima Facie Demonstration that issuing the Draft Permit would not violate the applicable regionalization laws, they assert that Applicant met its burden on this issue.

### 3. ALJs' Analysis

The ALJs agree that the Draft Permit satisfies the regionalization statutes. Applicant made a prima facie showing that the Guajolote Ranch development plans justify the need for issuing the Draft Permit without modification, and that there is no wastewater treatment facility or collection system within three miles of the proposed facility. Protestants did not present any evidence rebutting this showing, and their arguments opposing the need for the development based on concerns about density, increased traffic, and noise pollution are not within the Commission's jurisdiction. Consequently, the ALJs find that the Draft Permit complies with the applicable regionalization rules and regulations.

## V. TRANSCRIPT COSTS

Applicant incurred a total of $11,719 in reporting and transcription costs for the three-day hearing on the merits.[455] Applicant proposes that one-half of the total

[454] ED Ex. AR-1 (Rahim Direct) at 0570.

[455] App. Closing Brief at 21. Although Applicant did not appear to submit receipts for the costs, Protestants did not address or dispute the amount of such costs in their closing or reply briefs.

costs should be allocated to Applicant and one-half to the Protestants, collectively.[456] Protestants, meanwhile, urge that all transcript costs should be borne by Applicant.

The Commission's rules require consideration of the following factors in assessing transcription costs:

(A) the party who requested the transcript;

(B) the financial ability of the party to pay the costs;

(C) the extent to which the party participated in the hearing;

(D) the relative benefits to the various parties of having a transcript;

(E) the budgetary constraints of a state or federal administrative agency participating in the proceeding;

(F) in rate proceedings, the extent to which the expense of the rate proceeding is included in the utility's allowable expenses; and

(G) any other factor which is relevant to a just and reasonable assessment of costs.[457]

The ALJs required that the hearing be transcribed. All parties participated in the hearing and benefitted equally from having a copy of the transcript. Neither Applicant nor Protestants presented evidence on their respective ability to pay costs. Protestants consist of a nonprofit organization participating on behalf of local members, and a local government that is reliant on taxpayers for expenses, which

[456] Neither OPIC nor the ED may be assessed transcript costs. 30 TAC § 80.23(d)(2).

[457] 30 TAC § 80.23(d)(1).

might suggest they lack resources compared to Applicant. However, Protestants were represented in this case by experienced lawyers and had the resources to retain several expert witnesses, which indicates they can bear litigation costs and expenses.

The ALJs find it appropriate and consistent with Commission rules to allocate one-half of the total reporting and transcription costs to Applicant and one-half to Protestants.

## VI. CONCLUSION

Based on the foregoing analysis, the ALJs recommend that the Commission grant the Application and issue the Draft Permit as proposed by the ED. The ALJs further recommend that the Commission adopt all Findings of Fact and Conclusions of Law contained in the Proposed Order and decline to adopt any findings and conclusions proposed by the parties that are not contained in the Proposed Order.[458] Finally, the ALJs recommend that the Commission allocate one-half of the total reporting and transcription costs to Applicant and one-half to the Protestants.

**Signed May 19, 2025.**

Pratibha J. Shenoy
Administrative Law Judge

Shelly M. Doggett
Administrative Law Judge

[458] Applicant included proposed findings and conclusions with its Closing Brief; Protestants did the same with their Reply Brief.

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

**AN ORDER**
**GRANTING THE APPLICATION BY**
**MUNICIPAL OPERATIONS, LLC**
**FOR NEW TPDES PERMIT NO. WQ0016171001**
**TCEQ DOCKET NO. 2024-0670-MWD;**
**SOAH DOCKET NO. 582-25-01778**

On _____, the Texas Commission on Environmental Quality (TCEQ or Commission) considered the application (Application) of Municipal Operations, LLC (Applicant) for new Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0016171001 to discharge treated domestic wastewater from a proposed wastewater treatment facility (Facility) to be located in Bexar County, Texas. A Proposal for Decision (PFD) was issued by Pratibha J. Shenoy and Shelly M. Doggett, Administrative Law Judges (ALJs) with the State Office of Administrative Hearings (SOAH) and considered by the Commission.

After considering the PFD, the Commission makes the following findings of fact and conclusions of law.

# I. FINDINGS OF FACT

## *Application*

1. Applicant filed its Application for a new TPDES permit with TCEQ on May 23, 2022. The Application requests authorization to discharge treated domestic wastewater from a proposed Facility to be located approximately 1.75 miles west-southwest of the intersection of Babcock Road and Scenic Loop Road in Bexar County, Texas.

2. The treated effluent will be discharged via pipe to Helotes Creek, then to an on-site pond, then to Helotes Creek, then to Culebra Creek, then to Lower Leon Creek in Segment No. 1906 of the San Antonio River Basin. The unclassified receiving water use is limited aquatic life for Helotes Creek. The designated uses for Segment No. 1906 are primary contact recreation, public water supply, and high aquatic life use.

3. TCEQ's Executive Director (ED) declared the Application administratively complete on August 30, 2022.

4. The ED completed the technical review of the Application on November 16, 2022, prepared a draft permit (Draft Permit), and made the Draft Permit available for public review and comment.

## *Draft Permit*

5. The Draft Permit would authorize a discharge of treated domestic wastewater at a daily average flow not to exceed 0.2 million gallons per day (MGD) in the Interim I Phase, 0.4 MGD in the Interim II Phase, and 1.0 MGD in the Final Phase.

6. The Facility will operate as a membrane bioreactor (MBR) wastewater treatment system which operates in conventional mode with chemical phosphorus removal capability.

7. The Facility would have treatment units in the Interim I Phase that will include a primary fine screen, an equalization tank, a secondary fine screen, an anoxic tank, an aeration basin, an aerated MBR tank, a sludge holding tank, and an

ultraviolet light (UV) disinfection system. Treatment units in the Interim II Phase will include a primary fine screen, two equalization tanks, two secondary fine screens, two anoxic tanks, two aeration basins, two aerated MBR tanks, a sludge holding tank, and an UV disinfection system. Treatment units in the Final Phase will include a primary fine screen, four equalization tanks, four secondary fine screens, four anoxic tanks, four aeration basins, four aerated MBR tanks, a sludge holding tank, and an UV disinfection system. The facility has not been constructed.

8. The Draft Permit includes effluent limits, general requirements, and other requirements, such as disinfection, monitoring procedures and frequencies for conventional parameters. The Draft Permit also requires biomonitoring or Whole Effluent Toxicity testing once the permitted flow reaches 1.0 MGD.

9. The effluent limitations in all Phases of the Draft Permit, based on a 30-day average, are 5.0 milligrams per liter (mg/L) five-day carbonaceous biochemical oxygen demand ($CBOD_5$), 5.0 mg/L total suspended solids (TSS), 2.0 mg/L ammonia-nitrogen ($NH_3$-N), 0.15 mg/L of total phosphorous (TP), 4.0 mg/L minimum dissolved oxygen (DO), and 126 colony forming units (CFU) or most probable number (MPN) of *E. coli* per 100 milliliters (ml) of effluent.

10. A Tier 1 antidegradation review has determined that existing water quality uses will not be impaired by this permit action, and numerical and narrative criteria to protect existing uses will be maintained.

11. A Tier 2 antidegradation review has determined that no significant degradation of water quality is expected in the Lower Leon Creek, which has been identified as having high aquatic life uses; and that existing uses will be maintained and protected.

12. The end-of-pipe compliance with pH limits between 6.0 and 9.0 standard units reasonably assures instream compliance with the Texas Surface Water Quality Standards (TSWQS) for pH.

13. The discharge from the Facility is not expected to have an effect on any federal endangered or threatened aquatic or aquatic-dependent species or proposed species, or their critical habitat.

14. Segment No. 1906 of the San Antonio River Basin is currently listed on the State's inventory of impaired and threatened waters. The listing is for bacteria (*E. coli*) and for polychlorinated biphenyls (PCBs) and per- and polyfluoroalkyl substances (PFAS) in bottom sediment and edible fish tissue.

15. The Draft Permit requires Applicant to comply with the requirements of 30 Texas Administrative Code (TAC) § 309.13(a) and to provide facilities for the protection of its wastewater treatment facility from a 100-year flood.

***Notice and Jurisdiction***

16. The Notice of Receipt of the Application and Intent to Obtain a Water Quality Permit (NORI) was published in English on September 22, 2022, in the *San Antonio Express-News* and in Spanish on September 28, 2022, in the *Conexión*.

17. The Notice of Application and Preliminary Decision (NAPD) was published in English on April 5, 2023, in the *San Antonio Express-News* and in Spanish in the *Conexión* on April 5, 2023.

18. Complete copies of the Application and the Draft Permit were placed at the Igo Library located at 13330 Kyle Seale Parkway, San Antonio, Texas 78249, for public viewing and comment.

19. A public meeting was held on May 9, 2023, which closed the comment period for the Application.

20. TCEQ received timely hearing requests from: San Antonio Metropolitan Health District (MetroHealth), Greater Edwards Aquifer Alliance (GEAA), the City of Grey Forest (Grey Forest), and Elizabeth Ann Toepperwein based upon issues raised during the public comment period.

21. TCEQ issued its Response to Comments on January 5, 2024.

22. On August 4, 2024, the Commission considered the hearing requests at its open meeting and, on August 22, 2024, issued an Interim Order, granting the hearing request of MetroHealth, GEAA and Ms. Toepperwein, denying the request of Grey Forest, referring the following seven issues to SOAH, denying all issues not referred, and setting the maximum duration of the hearing at

180 days from the date of the preliminary hearing until the date the PFD is issued by SOAH:

A. Whether the draft permit is adequately protective of water quality, including the protection of surface water, groundwater, and drinking water wells;

B. Whether the draft permit is protective of wildlife, including endangered species, in accordance with the TSWQS in 30 TAC chapter 307;

C. Whether the draft permit adequately addresses nuisance odor, in accordance with 30 TAC § 309.13(e);

D. Whether the draft permit complies with siting requirements regarding flood plains and wetlands, in accordance with 30 TAC chapter 309;

E. Whether Applicant substantially complied with applicable public notice requirements;

F. Whether Applicant adequately identified the operator in the application; and

G. Whether the Commission should deny or alter the terms and conditions of the draft permit based on consideration of need, under Texas Water Code (TWC) § 26.0282 and the general policy to promote regional or area-wide systems, under TWC § 26.081.

23. On October 17, 2024, notice of the preliminary hearing was published in English in the *San Antonio Express-News*. The notice included the time, date, and place of the hearing, as well as the matters asserted, in accordance with the applicable statutes and rules.

***Proceedings at SOAH***

24. On November 21, 2024, a preliminary hearing was convened in this case via videoconference by SOAH ALJs Shenoy and Doggett. The following appeared and were admitted as parties: Applicant, MetroHealth, GEAA, Ms. Toepperwein, the ED, and the TCEQ Office of Public Interest Counsel (OPIC). Grey Forest moved for reconsideration of its request to be considered an affected person, which motion was granted. GEAA, Grey Forest, and

Ms. Toepperwein, all represented by the same counsel, were aligned as parties. Ms. Toepperwein later clarified that she was participating as a member of GEAA and did not seek standing as an individual. MetroHealth was not aligned with any of the parties.

25. Jurisdiction was taken by the ALJs and the Administrative Record, comprised of Applicant's Exhibit 1, was admitted at the preliminary hearing.

26. On December 30, 2024, MetroHealth filed a motion to withdraw, stating that it had reached a settlement with Applicant.

27. On January 17, 2025, Applicant filed a motion for partial summary disposition (MPSD) and asserted that summary disposition should be granted on referred Issues C, D, E, F and G.

28. On February 4, 2025, the ALJs issued Order No. 2, granting MetroHealth's motion to withdraw and dismissing MetroHealth from the case, among other things.

29. A prehearing conference was held via videoconference on February 12, 2025, at which the ALJs heard oral argument on Applicant's MPSD.

30. On February 13, 2025, the ALJs issued Order No. 3, granting Applicant's MPSD on referred Issues C, E and F, and denying the MPSD as to referred Issues D and G.

31. The ALJs convened the hearing on the merits via videoconference on February 18-21, 2025. Applicant was represented by attorneys Helen Gilbert and John Manning; the ED was represented by attorneys Bradford Eckhart and Fernando Salazar Martinez; OPIC was represented by attorneys Jennifer Jamison and Josiah Mercer; and Protestants were represented by attorneys Eric Allmon, Lauren Ice, and Lauren Alexander.

32. The parties filed closing briefs on March 11, 2025, and reply briefs on March 21, 2025. The record closed on March 21, 2025.

**Referred Issue A: Whether the draft permit is adequately protective of water quality, including surface water, groundwater, and drinking water wells.**

33. The TSWQS apply to surface water in the state and are set by the Commission to be protective of water quality consistent with public health and enjoyment, propagation and protection of terrestrial and aquatic life, operation of existing industries, and other environmental and economic resources.

34. TCEQ has standard procedures for implementing the TSWQS, referred to as the Implementation Procedures (IPs), which are approved by the federal Environmental Protection Agency (EPA).

35. The proposed Facility is located on an undeveloped approximately 1,167-acre tract known as the Guajolote Ranch and is located over the Contributing Zone of the Edwards Aquifer. The Commission establishes effluent limits for TPDES-permitted wastewater treatment plants (WWTPs) that affect the Edwards Aquifer in 30 TAC chapter 213.

***DO Modeling***

36. The treated effluent will be discharged via pipe to Helotes Creek, then to an on-site pond, then to Helotes Creek, then to Culebra Creek, then to Lower Leon Creek in Segment No. 1906 of the San Antonio River Basin. The ED assigned minimal aquatic life use (2.0 mg/L minimum DO criterion) to Helotes Creek upstream of the unnamed tributary on the Facility site and limited aquatic life use (3.0 mg/L minimum DO) to Helotes Creek at the pond and downstream until the confluence with Lower Leon Creek/Segment 1906. The designated uses for Segment No. 1906 are primary contact recreation, public water supply, and high aquatic life use (5.0 mg/L minimum DO).

37. The assigned aquatic life use designations for the water bodies at issue in this Application are accurate.

38. Helotes Creek is an intermittent stream and is normally dry at the proposed discharge point.

39. In the absence of adequate site-specific width, depth, flow, and velocity data for the receiving water body, the ED uses standardized hydraulic coefficient

assumptions in an uncalibrated QUAL-TX model to predict the effects of an effluent discharge on DO concentrations downstream. These assumptions have been shown to be representative of Texas streams and have been approved by TCEQ and the EPA.

40. The standardized hydraulic coefficients assume zero ambient flow, full discharge flow, and a temperature of 30.5 degrees Celsius to simulate critical conditions.

41. The ED's standard practice is to consider a DO criterion to be met if the QUAL-TX model predicts a DO concentration that is within 0.2 mg/L of the assigned criterion.

42. The ED's DO modeling predicts that the minimum DO concentrations will be met or exceeded for all water bodies in the discharge route based on effluent limits of 5.0 mg/L $CBOD_5$, 5.0 mg/L TSS, 2.0 mg/L $NH_3$-N, 0.15 mg/L TP, and 4.0 mg/L minimum DO per grab.

43. The ED's DO modeling complied with applicable regulations to ensure the Draft Permit is protective of water quality.

***Nutrient Screening***

44. When setting nutrient limits for wastewater discharges, TCEQ focuses on TP instead of total nitrogen (TN) because substantially less data exists on TN for Texas waters; phosphorus is a primary nutrient in freshwaters; nitrogen can be fixed directly from the atmosphere by most of the noxious forms of blue-green algae; and available technologies make reducing phosphorus more effective than reducing nitrogen as a means of limiting algal production.

45. Based on nutrient screening, the ED determined a TP limit was appropriate to prevent excess accumulation of algae in the receiving waters.

46. Hill Country streams such as Helotes Creek typically have mineral content that forms insoluble precipitates making phosphorus biologically unavailable for algae growth. Some of the algae growing in these streams deposit calcium carbonate that traps phosphorus. These processes are reasonably expected to continue and will reduce the impact of TP in the discharge.

47. The proposed 0.15 mg/L TP limit in the Draft Permit is stricter than the typical limit of 1.0 to 0.5 mg/L recommended by the IPs for a flow of 0.5 to 3.0 MGD and is more stringent than the 1.0 mg/L TP limit required by the Commission for discharges over the Edwards Aquifer's Recharge Zone (which does not encompass the Facility).

48. The absence of a TN limit in the Draft Permit is consistent with the IPs, given that the TP limit is already low enough to avoid growth of nuisance algae, the only drinking water supply is nearly 20 miles away from the outfall, and no unusually sensitive tidal waters are at issue.

***Antidegradation Review***

49. The ED properly conducted a Tier 1 review for all water bodies at issue in this case.

50. The predicted DO concentrations for the receiving waters and the *E. coli* limit (set at the most stringent level assigned for primary contact recreation) for the discharge will be adequate to maintain existing uses and water quality sufficient to protect those existing uses, satisfying a Tier 1 review.

51. The ED properly conducted a Tier 2 review for Segment 1906.

52. Although Segment 1906 is listed as impaired for bacteria in the Draft 2024 Texas Integrated Report of Water Quality Impairments (Draft 2024 Integrated Report), only one of 201 samples exceeded the criterion for *E. coli*.

53. The Draft 2024 Integrated Report lists Segment 1906 as impaired for PCBs and PFAS in bottom sediment and edible fish tissue from the confluence with Indian Creek upstream to a point 100 meters upstream of State Highway 16 northwest of San Antonio. However, there is no indication that the Facility's discharge will contain PCBs, and TCEQ has no rules regulating PFAS.

54. The preponderant evidence indicates water quality as a whole in Segment 1906 will not be lowered by more than a *de minimis* amount, satisfying a Tier 2 review.

***Toxicity Concerns***

55. Similar to PFAS, TCEQ has no rules regulating Contaminants of Emerging Concern (CECs) in TPDES permits.

56. TCEQ's rules concerning toxicity do not regulate PFAS or CECs.

***Protection of Groundwater and Drinking Water Wells***

57. The Facility's discharge point is more than 250 feet from any private wells and more than 500 feet from any public wells. Grey Forest's two wells, operated by Grey Forest Utilities (GFU), are located approximately 2.2 miles from the discharge point.

58. GFU's two wells are completed in the Middle Trinity Aquifer.

59. Domestic drinking water wells in the vicinity of the discharge are completed in the Middle Trinity Aquifer.

60. There is no geologic pathway for the treated discharge to contaminate area drinking water wells because there is an aquitard between the Upper and Middle Trinity Aquifers.

61. The discharge's compliance with the TSWQS, which ensure that surface water will be protected and not degraded, also ensures that groundwater will not be degraded.

**Referred Issue B: Whether the draft permit is protective of wildlife, including endangered species, in accordance with the TSWQS in 30 TAC Chapter 307.**

62. There are no threatened or endangered species, or critical habitat for endangered or threatened species, on Guajolote Ranch.

63. The closest designated Critical Habitat Units (CHUs) are for karst invertebrates (or cave bugs) in the Helotes Creek watershed and are located approximately 2.7 miles from the outfall. Solution cavities that could be designated as potential cave bug habitat in the future are upgradient or upslope from and not located in Helotes Creek.

64. The ED's endangered species review is compliant with the 1998 U.S. Fish and Wildlife Service Biological Opinion, which requires the evaluation of only aquatic or aquatic-dependent species in priority watersheds of critical concern in TPDES permitting. Applicant's discharge will not flow to any priority watersheds of critical concern.

65. The Golden-cheeked Warbler, Black-capped Vireo, and karst invertebrates are not aquatic or aquatic-dependent species.

66. There will be no effect to any federally-listed species because of the discharge from Applicant's WWTP.

67. The Draft Permit's maintenance of aquatic life uses protects aquatic life, terrestrial life, and wildlife, including endangered species.

68. The TCEQ has no rules regulating PFAS and CECs in TPDES permits. TCEQ's rules concerning toxicity do not regulate PFAS or CECs.

**Referred Issue C**: **Whether the draft permit adequately addresses nuisance odor, in accordance with 30 TAC § 309.13(e).**

69. No party presented evidence rebutting the prima facie demonstration that the Draft Permit adequately addresses nuisance odor in accordance with 30 TAC § 309.13(e).

70. The Draft Permit adequately addresses nuisance odor in accordance with 30 TAC § 309.13(e).

**Referred Issue D**: **Whether the draft permit complies with the siting requirements regarding flood plains and wetlands, in accordance with 30 TAC Chapter 309.**

71. The proposed Facility will not be located in a 100-year floodplain or within a wetland.

72. No party presented evidence that the Draft Permit would violate the chapter 309 rules regarding siting of treatment facilities in floodplains or wetlands.

73. A review of the National Wetlands Inventory Mapper tool and the USDA NRCS Web Soil Survey tool indicated that wetlands were not likely on the Site, and no wetlands delineation is required to be prepared for a TPDES application by TCEQ.

74. The 30 TAC chapter 309 requirements only pertain to the WWTP site.

**Referred Issue E: Whether Applicant substantially complied with applicable notice requirements.**

75. No party presented evidence rebutting the prima facie demonstration that Applicant substantially complied with applicable notice requirements.

76. Applicant substantially complied with applicable notice requirements.

**Referred Issue F: Whether the Applicant adequately identified the operator in the Application.**

77. No party presented evidence rebutting the prima facie demonstration that Applicant adequately identified the operator in the Application.

78. Applicant adequately identified the operator in the Application.

**Referred Issue G: Whether the Commission should deny or alter the terms and conditions of the draft permit based on considerations of need, under TWC § 26.0282 and the general policy to promote regional or area-wide systems, under TWC § 26.081.**

79. No permitted wastewater treatment facilities or collections systems are located within three miles of the Site.

80. There is a determined need for a WWTP to provide treatment for the wastewater generated by approximately 2,900 Living Unit Equivalent connections that will inhabit the Site, as the closest WWTP with capacity to serve the Site is approximately 17 miles away and service from that San Antonio Water System WWTP is not feasible.

81. The only alternative to the proposed WWTP would be to utilize septic tanks, which provide inferior standards of treatment and groundwater protection.

82. The terms and conditions of the Draft Permit should not be altered, and the Draft Permit should not be denied, based on considerations of need under TWC § 26.0282 and the regionalization policy under TWC § 26.081.

***Transcription Costs***

83. Protestants and Applicant fully participated in the hearing by presenting witnesses and cross-examining witnesses, and both benefitted from the preparation of a transcript.

84. There was no evidence that any party subject to allocation of costs is financially unable to pay a share of the costs.

85. The total cost for recording and transcribing the hearing on the merits was $11,719.

## II. CONCLUSIONS OF LAW

1. TCEQ has jurisdiction over this matter. TWC chs. 5, 26.

2. SOAH has jurisdiction to conduct a hearing and to prepare a PFD in contested cases referred by the Commission under Texas Government Code § 2003.047.

3. Notice was provided in accordance with TWC §§ 5.114 and 26.028, Texas Government Code §§ 2001.051-.052, and 30 TAC §§ 39.405 and .551.

4. The Application is subject to the requirements in Senate Bill 709, effective September 1, 2015. Tex. Gov't Code § 2003.047(i-1)-(i-3).

5. The Administrative Record established a prima facie demonstration that: (1) the Draft Permit meets all state and federal legal and technical requirements; and (2) a permit, if issued consistent with the Draft Permit, would protect human health and safety, the environment, and physical property. Tex. Gov't Code § 2003.047(i-1); 30 TAC § 80.17(c)(1).

6. Applicant retains the burden of proof on the issues regarding the sufficiency of the Application and compliance with the necessary statutory and regulatory requirements. 30 TAC § 80.17(a).

7. To rebut the prima facie demonstration, a party must present evidence that (1) relates to a matter referred under TWC § 5.557; and (2) demonstrates that one or more provisions in the Draft Permit violates a specifically applicable state or federal requirement. Tex. Gov't Code § 2003.047(i-2); 30 TAC § 80.17(c)(2).

8. No party rebutted the prima facie demonstration. Tex. Gov't Code § 2003.047(i-2); 30 TAC § 80.117(c).

9. To ensure adequate protections to potable water sources and supplies, a WWTP unit may not be located closer than 500 feet from a public water well, nor 250 feet from a private water well. 30 TAC § 309.13(c).

10. The Draft Permit is adequately protective of water quality, including surface water, groundwater, and drinking water wells.

11. A discharge of effluent from the Facility that is compliant with the effluent limits in the Draft Permit will comply with the TSWQS in 30 TAC chapter 307.

12. The Draft Permit is protective of wildlife, including endangered species, in accordance with the TSWQS in 30 TAC chapter 307.

13. The Draft Permit adequately addresses nuisance odor, in accordance with 30 TAC § 309.13(e).

14. A WWTP may not be located in a 100-year flood plain, unless the plant unit is protected from inundation and damage that may occur during that flood event, nor may a WWTP be located in a wetland. 30 Tex. Admin. Code § 309.13(a)-(b).

15. The Draft Permit complies with siting requirements regarding flood plains and wetlands, in accordance with 30 TAC chapter 309.

16. Applicant substantially complied with applicable public notice requirements.

17. Applicant adequately identified the operator in the application.

18. The Commission should not deny or alter the terms and conditions of the Draft Permit based on consideration of need, under TWC § 26.0282 and the general policy to promote regional or area-wide systems, under TWC § 26.081.

19. No transcript costs may be assessed against the ED or OPIC because the TCEQ's rules prohibit the assessment of any cost to a statutory party who is precluded by law from appealing any ruling, decision, or other act of the Commission. 30 TAC § 80.23(d)(2).

20. Factors to be considered in assessing transcript costs include: the party who requested the transcript; the financial ability of the party to pay the costs; the extent to which the party participated in the hearing; the relative benefits to the various parties of having a transcript; the budgetary constraints of a state or federal administrative agency participating in the proceeding; and any other factor which is relevant to a just and reasonable assessment of the costs. 30 TAC § 80.23(d)(1).

21. Considering the factors in 30 TAC § 80.23(d)(1), a reasonable assessment of hearing transcript costs against parties to the contested case proceeding is 50 percent to Applicant and 50 percent collectively to Protestants.

**NOW, THEREFORE, BE IT ORDERED BY THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY, IN ACCORDANCE WITH THESE FINDINGS OF FACT AND CONCLUSIONS OF LAW, THAT**:

1. Applicant's Application for TPDES Permit No. WQ0016171001 is granted as set forth in the Draft Permit.

2. Applicant must pay 50 percent of the reporting and transcription costs. Protestants (Greater Edwards Aquifer Alliance and the City of Grey Forest) must collectively pay 50 percent of the reporting and transcription costs.

3. The Commission adopts the ED's Response to Public Comment in accordance with 30 TAC § 50.117(f).

4. All other motions, requests for entry of specific Findings of Fact or Conclusions of Law, and any other requests for general or specific relief, if not expressly granted herein, are hereby denied.

5. The effective date of this Order is the date the Order is final, as provided by Texas Government Code § 2001.144 and 30 TAC § 80.273.

6. TCEQ's Chief Clerk shall forward a copy of this Order to all parties.

7. If any provision, sentence, clause, or phrase of this Order is for any reason held to be invalid, the invalidity of any provision shall not affect the validity of the remaining portions of this Order.

ISSUED:

**TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

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Brooke T. Paup, Chairwoman, For the Commission