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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

November 30, 2020

Laurie Gharis, Chief Clerk
Texas Commission on Environmental Quality
Office of the Chief Clerk (MC-105)
P.O. Box 13087
Austin, Texas 78711-3087

RE: **PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY**
SOAH DOCKET NO. 582-20-1895
TCEQ DOCKET NO. 2019-1156-IWD

Dear Ms. Gharis:

Enclosed for filing is the Office of Public Interest Counsel's Closing Argument in the above-entitled matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Sheldon P. Wayne".

Sheldon P. Wayne, Attorney
Assistant Public Interest Counsel

cc: Mailing List

**SOAH DOCKET NO. 582-20-1895
TCEQ DOCKET NO. 2019-1156-IWD**

APPLICATION OF PORT OF	§	BEFORE THE STATE OFFICE
CORPUS CHRISTI AUTHORITY	§	
OF NUECES COUNTY FOR	§	OF
TPDES PERMIT	§	
NO. WQ0005253000	§	ADMINISTRATIVE HEARINGS

**OFFICE OF PUBLIC INTEREST COUNSEL’S
CLOSING ARGUMENT**

TO THE HONORABLE ADMINISTRATIVE LAW JUDGES:

The Office of Public Interest Counsel (OPIC) at the Texas Commission on Environmental Quality (TCEQ) files this closing argument and would respectfully show the following:

I. INTRODUCTION

A. Background of Facility

The Port of Corpus Christi (POCC or Applicant) has applied to TCEQ for a new Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0005253000 to authorize the discharge of water treatment wastes at a daily average flow not to exceed 95.6 million gallons per day (MGD). The Applicant proposes to operate the Harbor Island Property – Former FINA Tank Farm, which is a seawater desalination facility (the proposed Facility).

According to the application, seawater will be drawn into the proposed Facility from a channel adjacent to Harbor Island through coarse screens that will keep large material from entering the pretreatment processes. The screens will reject captured solids as industrial solid waste into a dumpster and will be sent off-site for disposal.

All domestic wastewater generated must be disposed of in an approved manner, such as routing to an approved on-site septic tank and drainfield system or to an authorized third party for treatment and disposal. The proposed Facility will be located adjacent to State Highway 361 just northeast of the Ferry Landing, Nueces County, Texas 78336.

If the draft permit is issued, the treated effluent will be discharged via pipe directly into Corpus Christi Bay (the Bay) in Segment No. 2481 of the Bays and Estuaries. The designated uses for Segment No. 2481 are primary contact recreation, exceptional aquatic life use, and oyster waters. The effluent limits in the draft permit are intended to maintain and protect the existing instream uses. All determinations are preliminary and subject to additional review and revisions.

B. Procedural Background

The TCEQ received the application on March 7, 2018 and declared it administratively complete on June 26, 2018. The Notice of Receipt and Intent to Obtain a Water Quality Permit (NORI) was published in English on July 25, 2018, in the *Aransas Pass Progress/Ingleside Index* and the *Corpus Christi Caller Times*, and in the *Port Aransas South Jetty* on July 26, 2018. The TCEQ Executive Director's (ED) staff completed the technical review of the application and prepared a draft permit. The Notice of Application and Preliminary Decision (NAPD) was published in English on November 21, 2018 in the *Aransas Pass Progress* and the *Ingleside Index*, and in the *Port Aransas South Jetty* and the *Corpus Christi Caller Times* on November 22, 2018.

A public meeting was held on April 8, 2019 at the Port Aransas Civic Center in Port Aransas, Texas. The public comment period ended on April 8, 2019. The Chief Clerk mailed the ED's Decision and Response to Public Comment on July 12, 2019 and the

deadline for filing requests for a contested case hearing and requests for reconsideration was August 12, 2019. The TCEQ received numerous timely comments, hearing requests, and two timely requests for reconsideration. On November 6, 2019, the Commission considered the hearing requests and requests for reconsideration and the matter was then referred to the State Office of Administrative Hearings (SOAH) to conduct a contested case hearing. By an interim order dated November 21, 2019, the Commission referred the following nine issues to SOAH:

1. Whether the proposed discharge will adversely impact: the marine environment, aquatic life, and wildlife, including birds and endangered or threatened species, spawning eggs, or larval migration;
2. Whether the proposed discharge will adversely impact the health of the requestors and their families, including whether fish and other seafood will be safe for human consumption;
3. Whether the proposed discharge will adversely impact recreational activities, commercial fishing, or fisheries in Corpus Christi Bay and the ship channel;
4. Whether the Application, and representations contained therein, are complete and accurate;
5. Whether the Application substantially complied with applicable public notice requirements;
6. Whether the draft permit is consistent with the Texas Coastal Management Programs goals and policies;
7. Whether the modeling complies with applicable regulations to ensure the draft permit is protective of water quality, including utilizing accurate inputs;
8. Whether the Executive Director's antidegradation review was accurate; and
9. Whether the draft permit includes all appropriate and necessary requirements.

The initial preliminary hearing in this matter was scheduled for March 24, 2020, but was continued “[b]ased on Governor Abbot’s proclamation about COVID-19 and his letter to agencies recommending cancellation of non-essential travel and minimizing all non-

essential in person meetings[.]”¹ The preliminary hearing was rescheduled for and held on July 9, 2020 via Zoom videoconference. Order No. 5 admitted the following as parties: (1) Port of Corpus Christi Authority of Nueces County (Applicant or the Port), represented by Earnest Wotring, Debra Baker, and John Muir; (2) the ED, represented by Kathy Humphreys, Bobby Salehi, and Harrison Malley; (3) the Port Aransas Conservancy (PAC), represented by Craig Bennett, Sue Ayers, Ben Rhem, and Richard Lowerre; (4) the City of Port Aransas, represented by Emily Rogers and Bill Dugat; (5) Mary Abel, Jack Guenther, Sr., Jack Guenther, Jr., Valerie Guenther, Bill Johnson, Kathy Mays Johnson, James Harrison King, Tammy King, Edward Steves, Nancy Steves, Sam Steves, and Sarah Steves (collectively, the Represented Protestants), represented by Richard Lowerre; (6) Phillip Bartlett, Stacey Bartlett, Margo Branscomb, Cara Denney, Aldo Dyer, Barney Farley, Mark Grosse, Jo Krueger, Cameron Pratt, Sarah Searight, Susan Simpson, and Lisa Turcotte (collectively, the Self-Represented Protestants);² and (7) Audubon Texas, represented by Scott Moorhead. OPIC notes that the following parties withdrew and did not participate in the hearing on the merits: the City of Port Aransas, Mary Abell, Phillip Bartlett, Margo Branscomb, Aldo Dyer, Barney Farley, Jack Guenther, Jr., Jack Guenther, Sr., Valerie Guenther, Kathryn Mays Johnson, William Johnson, Cameron Pratt, Susan Simpson, Sarah Steves, and Nancy Steves.

The hearing on the merits was conducted via Zoom on November 4-6 and 9-10, 2020. For the reasons stated herein, the record supports findings and conclusions that the draft permit does not meet applicable requirements regarding the issues referred to hearing,

¹ SOAH Order No. 1.

² OPIC notes that the parties of Stacey Bartlett, Sarah Searight, Lisa Turcotte, and Jo Ellen Krueger were aligned; Lisa Turcotte was designated as their spokesperson and non-party Cathy Fulton acted as their representative.

and thus OPIC recommends that the permit be denied.

II. APPLICABLE LAW

This application was filed after September 1, 2015, and is therefore subject to Senate Bill 709, Tex. S.B. 709, 84th Leg., R.S. (2015) (SB 709). TCEQ rule § 80.118(c) provides that the administrative record includes the application and certified copies of the following documents:

- (1) the ED's final draft permit, including any special provisions or conditions;
- (2) the ED's preliminary decision, or the ED's decision on the permit application, if applicable;
- (3) the summary of the technical review of the permit application;
- (4) the compliance summary of the applicant;
- (5) copies of the public notices relating to the permit application, as well as affidavits regarding public notices; and
- (6) any agency document determined by the ED to be necessary to reflect the administrative and technical review of the application.

Section 80.118(c) also specifies that items 1–6 above should include technical memoranda that demonstrate the draft permit meets all applicable requirements and, if issued, would protect human health and safety, the environment, and physical property.

Regarding the burden of proof in an SB 709 case, § 80.17(c)(1) states that the filing of the administrative record establishes a prima facie demonstration that the ED's draft permit meets all state and federal legal and technical requirements, and, if issued consistent with the ED's draft permit, the permit would protect human health and safety, the environment, and physical property. Section 80.17(c)(2) further states that a party may rebut this presumption by presenting evidence demonstrating that the draft permit violates a specifically applicable state or federal legal or technical requirement.

Regarding the relationship between the administrative record and the burden of proof, § 80.117(b) states that for an application subject to SB 709, an applicant's presentation of evidence to meet its burden of proof may consist solely of the filing with SOAH, and admittance by the Administrative Law Judge (ALJ), of the administrative record.

III. DISCUSSION

1. **Whether the proposed discharge will adversely impact: the marine environment, aquatic life, and wildlife, including birds and endangered or threatened species, spawning eggs, or larval migration.**

The Port has applied to TCEQ for a TPDES permit for a proposed seawater desalination facility. The proposed Facility will emit a discharge that consists principally of saline water. The most contentious issue in this matter is whether the amount of salinity in the discharge, and the resulting salinity content in the respective mixing zones, will adversely impact the marine environment, and specifically larval organisms as they migrate through the Channel. Because numerical standards for salinity have not been set, and consequently, limitations placed in the draft permit are based on best professional judgment, the majority of the evidence presented by Applicant, Protestants, and the ED regarded various aspects of this issue.³

Port Aransas Conservancy's Position

PAC expert, Dr. Brad Erisman testified that the Aransas Pass tidal inlet is the most important multi-species spawning site for the most economically valuable sportfishes in the region and is not an appropriate location for desalination activities.⁴ Further, as a tidal

³ Ex. PAC-3 at 20, lines 12-13; Hearing Transcript Vol. 5 (Nov. 9, 2020) at 91, lines 21-23; Admin. Record, Tab F, ED-0038.

⁴ Ex. PAC-1 at 6, lines 15-16; p. 10, lines 7-8 and 11-14.

inlet, this area has been designated as essential fish habitat—an area that is necessary for fish spawning, breeding, feeding or growth to maturity.⁵ However, during cross-examination, Dr. Erisman acknowledged that he did not know the effect of that designation on TCEQ review of a TPDES permit.⁶ Dr. Erisman argued that the draft permit effluent limits are not calculated in a manner that properly accounts for background salinity and therefore have not been shown to be protective of aquatic life.⁷ However, Dr. Erisman also admitted that he was not familiar with how TCEQ calculates effluent limits.⁸

PAC expert Mr. Scott Holt offered his opinion that the discharge will result in a significant increase in mortality of larvae as they enter Aransas Pass.⁹ He testified that larval stages are not particularly tolerant of a range of salinities, and that dozens of finfish and shellfish species follow similar life cycle patterns, including a larval stage.¹⁰ PAC, the Port, and the ED all agreed at the hearing that larvae lack the ability to swim and are carried by the currents.¹¹ Mr. Holt further opined that larvae will not be able to avoid the proposed discharge route¹² as they journey to nursery habitats.¹³ Finally, he concluded that because larvae cannot cope with substantial changes in external salinities, the proposed Facility will result in increased mortality of larvae.¹⁴

PAC expert Dr. Andrew Esbaugh offered opinions similar to Mr. Holt's regarding

⁵ Ex. PAC-1 at 8, lines 12-14.

⁶ Hearing Transcript Vol. 2 (Nov. 4, 2020) at 63, lines 1-24.

⁷ Ex. PAC-1 at 13, lines 15-17.

⁸ Hearing Transcript Vol. 2 (Nov. 4, 2020) at 64, lines 2-4.

⁹ Ex. PAC-4 at 7, lines 12-14.

¹⁰ Ex. PAC-4 at 9, lines 14-15; p. 11, lines 22-24.

¹¹ Hearing Transcript Vol. 4 (Nov. 6, 2020) at 23, lines 14-16; Hearing Transcript Vol. 6 (Nov. 10, 2020) at 12, lines 11-13; Hearing Transcript Vol. 3 (Nov. 5, 2020) at 12, lines 18-24.

¹² Mr. Holt notes that the aquatic life mixing zone is 92.4 meters wide and 126.4 meters long and that the tidal inlet is approximately 385 meters across. Ex. PAC-4 at 12, lines 11-12.

¹³ Ex. PAC-4 at 12, lines 9-15.

¹⁴ Ex. PAC-4 at 12, lines 22-3.

the effects of the discharge on larvae.¹⁵ Dr. Esbaugh also opined that the natural salinity in the channel is close to the physiological tolerance of the most sensitive species.¹⁶ He further opined that an appropriate criteria for acute salinity exposure for red drum, a fish found in the Bay, would be 37.4 parts per thousand,¹⁷ and that the natural salinity level of the Channel is already 37 parts per thousand at various times.¹⁸ Dr. Mary Anne Wallace, on behalf of the ED, testified that she did not dispute Dr. Esbaugh's proffered acute salinity exposure for red drum of 37.4 parts per thousand or that ambient salinity in the Channel is already at the limit of some marine organisms' physiological tolerance at least ten percent of the time.¹⁹ Dr. Esbaugh also took specific issue with the Application's chosen salinity values of 18 to 22 parts per thousand—because the currently proposed location of the intake in the Gulf is in the range of 32 to 35 parts per thousand.²⁰ He further opined that this would result in effluent which has a salinity of up to 58.5 parts per thousand, which would be very harmful to aquatic life.²¹

Finally, PAC expert Dr. Gregory Stunz offered opinions similar to Mr. Holt's and Dr. Esbaugh's regarding the effect of the discharge on larvae.²²

OPIC recognizes that the PAC experts were unable to quantify all aquatic life that could be impacted,²³ however, their testimony made it clear that the Corpus Christi Bay is

¹⁵ Ex. PAC-5 at 12, lines 14-17.

¹⁶ Ex. PAC-5 at 9, lines 5-6.

¹⁷ OPIC notes that Dr. Esbaugh also stated in his pre-filed testimony that for various aquatic species, the predicted no-effect concentration for salinity is 37.4 parts per thousand. Ex. PAC-5 at 11, lines 13-16.

¹⁸ Hearing Transcript Vol. 3 (Nov. 5, 2020) at 56, lines 1-8; p. 59, lines 25-10.

¹⁹ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 152, lines 5-11; p. 205, lines 11-21.

²⁰ Ex. PAC-5 at 11, lines 5-7.

²¹ Ex. PAC-5 at 11, lines 10-14.

²² Ex. PAC-6 at 11, lines 2-5 and 8-10; p. 12, lines 15-18.

²³ Hearing Transcript Vol. 2 (Nov. 4, 2020) at 73, lines 23-25.

an important ecological area which serves as a spawning site for many different species.²⁴ Additionally, the Marine Seawater Desalination Diversion and Discharge Zones Study states that “[e]stuaries are among the most productive natural systems and are important nursery areas that provide specific salinities to complete development phases, refuge from predation, and are sources of food for many species.”²⁵ The study also notes that Aransas Pass is one of five major passes connecting the Gulf of Mexico with Texas bays and estuaries.²⁶ Therefore, ensuring that the permit is protective of the marine environment and aquatic organisms is of critical importance.

Additionally, many of the arguments presented by PAC’s experts are based on specific criticisms of various aspects of the modeling performed by the Port as part of its Application. PAC argues that these deficiencies show that the Port has failed to establish that the proposed discharge will not cause adverse impacts. Those arguments are addressed in fuller detail in Section III.7.

The Port’s Position

Port expert, Dr. Lial Tischler, testified that the proposed desalination plant flow is 0.5 percent of the daily flow through the channel.²⁷ Based on this, he concludes that outside of the mixing zone, the concentrations of salinity will be negligible and have no impact on aquatic life use.²⁸ Dr. Tischler also testified that there is a zone of passage that assures migrating aquatic life in all life stages is protected from adverse effects.²⁹ However, during

²⁴ Hearing Transcript Vol. 2 (Nov. 4, 2020) at 93, lines 14-16; p. 94, lines 6-12.

²⁵ Ex. PAC-7, p. 13.

²⁶ Ex. PAC-7, p. 13.

²⁷ Ex. APP-LT-1 at 29, lines 26-28.

²⁸ Ex. APP-LT-1 at 29, lines 28-30.

²⁹ Ex. APP-LT-1 at 39, lines 10-12.

cross-examination, Dr. Tischler conceded that some larvae would pass through the zone of initial dilution.³⁰ Dr. Tischler also agreed that there can be no lethality to organisms within the zone of initial dilution, however, he was unable to testify that no larvae would suffer mortality within the zone of initial dilution.³¹ OPIC notes that TCEQ rules prohibit lethality to aquatic organisms within the zone of initial dilution.³²

Finally, Dr. Tischler opined that the eddy at the location of the proposed discharge will actually result in more thorough mixing of the plume than the CORMIX model predicts.³³

Port expert, Dr. Jordan Furnans, testified that he performed SUNTANS modeling to determine whether the discharge would result in a high-salinity layer along the channel bottom or would result in an accumulating increase in salinity throughout the Bay.³⁴ He determined that the increase in computed salinity in the vicinity of the discharge is zero to one part per thousand.³⁵ He opined that this increase is small relative to the eight parts per thousand seasonal variation in salinity in the Bay.³⁶ He concluded that the discharge will not likely result in environmental conditions that are potentially damaging to the Corpus Christi Bay ecosystem.³⁷ He further concluded that the SUNTANS model indicated that it will not “create a durable, persistent high-salinity layer along the channel bottom,” and that the increase in ambient salinity resulting from the discharge will not continuously increase

³⁰ Hearing Transcript Vol. 3 (Nov. 5, 2020) at 244, lines 20-2.

³¹ Hearing Transcript Vol. 3 (Nov. 5, 2020) at 245, lines 9-15 and 17-5.

³² 30 TAC § 307.8(b)(2) (stating in pertinent part “[a]cute criteria and acute total toxicity levels may be exceeded in small zones of initial dilution (ZIDs) at discharge points of permitted discharges, but there must be no lethality to aquatic organisms that move through a ZID.”).

³³ Ex. APP-LT-1 at 33, lines 23-27.

³⁴ Ex. APP-JF-1 at 4, lines 31-3; p. 5, lines 6-9.

³⁵ Ex. APP-JF-1 at 6, lines 12-13.

³⁶ Ex. APP-JF-1 at 6, lines 14-16.

³⁷ Ex. APP-JF-1 at 8, lines 14-15.

over time in the vicinity of the discharge.³⁸

Port expert, Mr. Randy Palachek, testified that the vast majority of time the effluent from the proposed Facility will contribute less than one percent to the salinity in the Corpus Christi Ship Channel at the outfall's location and will result in no adverse effects.³⁹ Mr. Palachek also testified that the draft permit would be protective of applicable Surface Water Quality Standards.⁴⁰ He also stated that the discharge will not affect the migration of fish or larvae because it only affects a small portion of the Channel and does not significantly increase the total salinity load.⁴¹ Mr. Palachek further opined that the discharge velocity "would not allow the larval organisms to be exposed inside the zone of initial dilution or mixing zone because it would push them away from exposure concentrations."⁴² PAC expert Mr. Holt agreed with Mr. Palachek that to a certain extent larvae would be pushed out of the way, however, he observed that this raised issues of turbulence and mechanical damage to the larvae.⁴³

Additionally, Mr. Palachek criticized Dr. Esbaugh's use of a predicted no-effect concentration of 37.4 parts per thousand for lacking a basis.⁴⁴ However, the only no-effect concentration for aquatic species commonly found in the Channel that Mr. Palachek was able to testify to was the sheepshead minnow, which he stated had a no-effect concentration of 48 parts per thousand.⁴⁵ Mr. Palachek also took issue with Dr. Esbaugh's conclusion

³⁸ Ex. APP-JF-1 at 19, lines 1-2 and 28-30.

³⁹ Ex. APP-RP-1 at 13, lines 26-28; p. 14, lines 1-2.

⁴⁰ Ex. APP-RP-1 at 17, lines 7-10 and 13-15.

⁴¹ Ex. APP-RP-1 at 19, lines 22-30.

⁴² Ex. APP-RP-1 at 21, lines 17-19.

⁴³ Hearing Transcript Vol. 3 (Nov. 5, 2020) at 24, lines 11-19.

⁴⁴ Ex. APP-RP-1 at 29, lines 18-21.

⁴⁵ Hearing Transcript Vol. 4 (Nov. 6, 2020) at 16, lines 11-13, 15-14.

that the effluent could have a salinity concentration as high as 58.5 parts per thousand, explaining that this does not account for the effluent being diluted by ambient waters.⁴⁶ Mr. Palachek testified that effluent with a concentration of 58.5 part per thousand would result in a salinity concentration at the boundary of the zone of initial dilution of 39.3 parts per thousand.⁴⁷ Finally, Mr. Palachek disagreed with PAC's opinion that the larvae will not be able to travel around the mixing zone, because the draft permit allows for the required zone of passage.⁴⁸ Additionally, he testified that the modeling establishes that the percent of effluent at the edge of the mixing zone will be at such a level that it will not affect aquatic species there.⁴⁹

The ED's Position

According to the ED, the permit defines mixing zones, which contain boundaries where acute and chronic toxicity criteria apply.⁵⁰ TCEQ uses the CORMIX model to predict the effluent percentages, also known as critical dilutions, at the edges of the mixing zones.⁵¹ These percentages are used to determine water quality based effluent limits for the protection of aquatic life.⁵²

PAC's expert, Dr. Stunz, opined that the ED did not properly evaluate the adverse effect to the marine environment because acute and chronic toxicity criteria apply at the boundaries of the mixing zones and larvae do not have the ability to travel around the edge

⁴⁶ Ex. APP-RP-1 at 30, lines 9-15.

⁴⁷ Hearing Transcript Vol. 4 (Nov. 6, 2020) at 21, lines 1-14.

⁴⁸ Ex. APP-RP-1 at 33, lines 9-19.

⁴⁹ Ex. APP-RP-1 at 33, lines 23-27.

⁵⁰ Ex. ED-KC-1 at 5, lines 4-5.

⁵¹ Ex. ED-KC-1 at 5, lines 12-15.

⁵² Ex. ED-KC-1 at 8, lines 29-2.

of the mixing zones.⁵³ However, Ms. Katie Cunningham testified for the ED that “within the mixing zones, the IP’s [Implementation Procedures] allow for certain numeric water quality criteria to be exceeded but do apply at the edge of the regulatory boundaries.”⁵⁴ Ms. Shannon Gibson testified for the ED that IPs are EPA-approved.⁵⁵ She further testified that water quality criteria are presumed to be protective of aquatic life if they are determined using the methodology established in the IPs.⁵⁶ While the water quality criteria can be exceeded in the mixing zones, ED witness Dr. Wallace testified that it would violate the permit if the discharge caused any death in the zone of initial dilution.⁵⁷ OPIC notes that by TCEQ rule, aquatic organisms must not suffer lethal effects within the zone of initial dilution.⁵⁸ However, Dr. Wallace testified that in performing her antidegradation review, she did not consider whether any death would occur in the zone of initial dilution, and instead focused on the presence of an adequate zone of passage.⁵⁹ Additionally, Ms. Cunningham testified that within the mixing zones, anything in the water will mix with the effluent.⁶⁰

To ensure the draft permit is protective and complies with the Texas Surface Water Quality Standards,⁶¹ the ED developed certain limitations to include in the draft permit, including daily average and maximum effluent limits for flow, and minimum and

⁵³ Ex. PAC-6 at 13, lines 3-7.

⁵⁴ Ex. ED-KC-1 at 22, lines 27-30.

⁵⁵ Ex. ED-SG-1 at 22, lines 7-10.

⁵⁶ Ex. ED-SG-1 at 22, lines 7-10.

⁵⁷ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 165, lines 13-20; p. 178, lines 16-23.

⁵⁸ 30 TAC § 307.8(b)(2). (stating in pertinent part “[a]cute criteria and acute total toxicity levels may be exceeded in small zones of initial dilution (ZIDs) at discharge points of permitted discharges, but there must be no lethality to aquatic organisms that move through a ZID.”).

⁵⁹ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 166, lines 14-1.

⁶⁰ Hearing Transcript Vol. 6 (Nov. 10, 2020) at 74, lines 1-5.

⁶¹ 30 TAC, Chapter 307.

maximum effluent limits for pH.⁶² The ED further explained that because the proposed Facility has not yet been constructed, no analytical data was provided in the application, and therefore screening against water quality based effluent limitations could not be accomplished.⁶³ Because of this, the draft permit includes Other Requirement No. 8,⁶⁴ which requires the Port to conduct effluent sampling upon discharge and submit the data to TCEQ, who then can re-open the permit and add additional requirements if necessary.⁶⁵ The Port has also agreed to perform Whole Effluent Toxicity testing.⁶⁶ Further, the Port is required to complete a study of ambient water velocity at the outfall and submit a report to the TCEQ.⁶⁷

Also, Dr. Wallace opined that existing water quality uses will not be impaired by the draft permit and that no significant degradation of water quality is expected in Corpus Christi Bay.⁶⁸ Regarding endangered species, Dr. Wallace, determined that the piping plover is found in the area, but because the proposed Facility is not a petroleum facility, it is not expected to have an effect on the piping plover.⁶⁹

OPIC's Position

After consideration of the above, OPIC finds that the greater weight of the evidence supports a finding that the Port has not met its burden in proving that the proposed discharge will not adversely impact: the marine environment, aquatic life, and wildlife, including birds and endangered or threatened species, spawning eggs, or larval migration.

⁶² Ex. ED-SG-1, p. 19 at 27-4.

⁶³ Ex. ED-SG-1 at 20, lines 9-11.

⁶⁴ Admin. Record, Tab F, ED-0014-0015.

⁶⁵ Ex. ED-SG-1 at 20, lines 12-18.

⁶⁶ Ex. APP-RP-1 at 16, line 2; Admin. Record, Tab F, ED-0019-0034.

⁶⁷ Ex. ED-KC-1 at 3, lines 25-28; Admin. Record, Tab F, ED-0015.

⁶⁸ Ex. ED-MW-1 at 4, lines 23-26.

⁶⁹ Ex. ED-MW-1 at 26, lines 9-13.

As acknowledged in the testimony of the ED and Applicant, by rule, TCEQ requires that aquatic organisms must not suffer lethal effects in the zone of initial dilution. It appears that the ED and the Port based their conclusion that there will be no lethal effects on the presence of a zone of passage in the Channel and the minimal amount of salinity the discharge will add to the receiving waterbody. However, this does not account for effects of the discharge to individual organisms that are located in close proximity to the discharge. Larvae lack the ability to swim, and the evidence demonstrates that some number of larvae will be carried by the currents into the zone of initial dilution and will likely suffer adverse, if not lethal, effects. Based on this evidence, and in light of the vital importance of the spawning ground and larval migratory route potentially affected by the proposed discharge, OPIC finds that the Applicant has not met its burden of proof on Issue No. 1.

2. Whether the proposed discharge will adversely impact the health of the requestors and their families, including whether fish and other seafood will be safe for human consumption.

Texas Surface Water Quality Standards require, among other things, that water in the state be maintained to preclude adverse toxic effects resulting from contact, consumptions of aquatic organisms, or consumption of water.⁷⁰ Dr. Wallace, on behalf of the ED, testified that the draft permit is in compliance with the Texas Surface Water Quality Standards and that the designated uses of the water body will be maintained and protected.⁷¹ Port expert, Mr. Palachek, testified that there is “no data establishing that any aquatic life that comes into contact with the effluent at the edge of the human health mixing zone will pose any risk to humans from fish consumption.”⁷² Aside from the concerns

⁷⁰ Ex. ED-MW-1 at 6, lines 24-28.

⁷¹ Ex. ED-MW-1 at 6, lines 28-32.

⁷² Ex. APP-RP-1 at 16, lines 19-21.

discussed in Section III.1, and testimony regarding impact to fisheries and commercial fishing discussed in Section III.3, Protestants did not put forth evidence specifically regarding this issue.

OPIC recognizes that any lethality of aquatic organisms within the zone of initial dilution as discussed in Section III.1, is likely a violation of the Texas Surface Water Quality Standards. However, it is larval organisms, and not aquatic organisms that have developed to a stage where they may be consumed by humans, that may be negatively affected within the zone of initial dilution. In light of the existence of the zone of passage, and the relatively small overall increase in salinity in the Bay due to the discharge, OPIC is unable to conclude that fish and other seafood will be unsafe for human consumption. OPIC, therefore, concludes that the greater weight of the evidence supports a finding that the proposed discharge will not adversely impact the health of the requestors and their families based on seafood consumption.

3. Whether the proposed discharge will adversely impact recreational activities, commercial fishing, or fisheries in Corpus Christi Bay and the ship channel.

Dr. Wallace opined that the draft permit will meet Texas Surface Water Quality Standards and the discharge should not adversely impact the designated uses of the water body.⁷³ In making her determination, Dr. Wallace considered the channel's dimensions, amount of tidal mixing, and the use of the diffuser.⁷⁴

PAC expert Dr. Erisman testified that negative impact on the fish population would harm local fisheries and increase the risk of overfishing and collapse of fish populations.⁷⁵ Mr. Holt testified that because of its effect on their larvae, the discharge is likely to cause

⁷³ Ex. ED-MW-1 at 7, lines 6-11.

⁷⁴ Ex. ED-MW-1 at 7, lines 22-25.

⁷⁵ Ex. PAC-1 at 7, lines 17-20.

substantial mortality in the populations of fish and shellfish,⁷⁶ though he did not have enough information to specifically quantify the expected impact on commercial fishing.⁷⁷

Dr. Esbaugh provided opinions similar to Mr. Holt's regarding the effect of the discharge on larvae and consequential effects to fish populations in the area.⁷⁸ Finally, Dr. Stunz offered opinions similar to Mr. Holt's and Dr. Esbaugh's, and concluded that the effect to fish populations could catastrophically damage the commercial and recreational fishing industries.⁷⁹

Port expert Dr. Tischler testified that the discharge will not adversely affect recreational activities, commercial fishing, or fisheries.⁸⁰ Mr. Palachek testified that commercial fishing and fisheries will not be threatened because the total increase in salinity in the Channel attributable to the discharge will be *de minimis*.⁸¹

After consideration of the evidence, and in light of the importance of the larval migratory route that the Channel provides, the impact to larvae carries with it too great of a potential to negatively impact fish populations, which would consequently impact the commercial and recreational fishing industries, therefore, OPIC is unable to conclude that the proposed discharge will not adversely impact recreational activities, commercial fishing, or fisheries in Corpus Christi Bay and the ship channel.

4. Whether the Application, and representations contained therein, are complete and accurate.

Ms. Cunningham and Ms. Gibson, on behalf of the ED, testified that the application

⁷⁶ Ex. PAC-4 at 20, lines 5-7.

⁷⁷ Hearing Transcript Vol. 2 (Nov. 4, 2020) at 258, lines 8-11.

⁷⁸ Ex. PAC-5 at 12, lines 23-2.

⁷⁹ Ex. PAC-6 at 23, lines 15-17.

⁸⁰ Ex. APP-LT-1 at 23, lines 17-22.

⁸¹ Ex. APP-RP-1 at 22, lines 20-1.

and the representations in the application are complete and accurate.⁸² Further, Dr. Wallace testified that she relied on the entire application in conducting the Standards portion of the technical review and that it contained all the information she needed.⁸³ However, upon cross-examination, Ms. Cunningham admitted that there were errors in the application.⁸⁴ Additionally, Ms. Gibson admitted that many parts of the application, such as the channel depth, were not part of her review.⁸⁵ Ms. Gibson also stated that she expects applicants to provide accurate information and to correct incorrect information when they find out about it.⁸⁶

PAC expert Bruce Wiland testified that the application contains errors, including the location of the outfall, the bathymetry and depth of the ship channel at the location of the outfall, the range of discharge rates, the constituents in the effluent, including accurate salinity data, failure to address tidal impacts, and failure to address the far-field (long-term) effects of the discharge.⁸⁷ The majority of these concerns are discussed throughout this Closing and will not be recounted in greater detail here.

Regarding the location of the outfall, Mr. Wiland testified that there are inconsistent locations in the application, including a map that puts the outfall in the middle of the ship channel and two sets of latitude and longitude figures.⁸⁸ Mr. Wiland provided an exhibit showing three locations of the outfall taken from information contained at various places

⁸² Ex. ED-KC-1 at 10, lines 8-9; ED-SG-1 at 12, lines 15-16.

⁸³ Ex. ED-MW-1 at 8, lines 7-12.

⁸⁴ Hearing Transcript Vol. 6 (Nov. 10, 2020) at 84, lines 1-4.

⁸⁵ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 58, lines 17-21.

⁸⁶ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 57, lines 12-18.

⁸⁷ Ex. PAC-3 at 13, lines 9-16; p. 17, lines 14-18.

⁸⁸ Ex. PAC-3 at 13, lines 23-9.

in the application.⁸⁹ However, upon cross-examination, Mr. Wiland admitted that there were multiple places in the application which stated the correct location of the outfall and that while he was confused initially, after reviewing the whole application, he was able to identify the probable location of the outfall.⁹⁰

Dr. Tischler testified for the Port that following referral of this matter to SOAH, he revised the diffuser design in response to issues raised by PAC expert Mr. Joseph Trungale in his pre-filed testimony regarding increased effluent concentrations at current velocities exceeding 0.40 meters per second.⁹¹ Dr. Tischler testified that the revised design had not been submitted to TCEQ for evaluation,⁹² and conceded that the Port would have to use the revised diffuser to meet permit requirements.⁹³ The diffuser's original design, rather than the revised design, was used in TCEQ modeling and is specifically described in the TCEQ Critical Conditions Memorandum.⁹⁴ Ms. Cunningham testified that if the Port changed the diffuser design, the revised design would need to be re-reviewed by TCEQ.⁹⁵ Ms. Gibson testified similarly that if the ED had learned of the revised diffuser design before the matter was referred to SOAH, the ED could have reached out to the Port for updated information and rerun the model.⁹⁶

OPIC finds that the greater weight of the evidence supports a finding that the Application, and representations contained therein, are not complete and accurate. The Port

⁸⁹ Ex. PAC-3 BW-3.

⁹⁰ Hearing Transcript Vol. 2 (Nov. 4, 2020) at 225, lines 11-22 and 24-12.

⁹¹ Ex. APP-LT-1 at 34, lines 17-21; Hearing Transcript Vol. 3 (Nov. 5, 2020) at 253, lines 10-15.

⁹² Hearing Transcript Vol. 3 (Nov. 5, 2020) at 259, lines 2-9.

⁹³ Hearing Transcript Vol. 3 (Nov. 5, 2020) at 264, lines 13-3.

⁹⁴ Admin. Record, Tab F, ED-0050.

⁹⁵ Hearing Transcript Vol. 6 (Nov. 10, 2020) at 109, lines 6-10.

⁹⁶ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 104, lines 24-9.

testified that it would have to use the revised diffuser design to meet the draft permit's requirements and the ED testified that it would need to re-review the revised design. Further, as discussed in Section III.7, the Application contains inaccurate information, including the depth of the channel at the discharge location.

5. Whether the Application substantially complied with applicable public notice requirements.

As discussed in Section III.4, PAC expert Mr. Wiland testified that the Application showed the outfall in different locations. He further testified that the location of the outfall is important because TCEQ uses the information to send mailed notice of the application to certain landowners in the immediate area.⁹⁷

However, no Protestant presented evidence that they themselves did not receive proper notice of the Application or were prejudiced by lack of proper notice. Generally, a party lacks standing to complain about lack of notice to another entity or person.⁹⁸ Therefore, OPIC must conclude that the greater weight of the evidence supports a finding that the Applicant substantially complied with TCEQ's public notice requirements.

6. Whether the draft permit is consistent with the Texas Coastal Management Programs goals and policies.

Ms. Gibson testified that she determined that the draft permit is consistent with the Texas Coastal Management Program's goals and policies.⁹⁹ She arrived at this determination by completing an appropriate worksheet to determine whether the discharge is above threshold.¹⁰⁰ If the discharge is above threshold, it is determined to be consistent

⁹⁷ Ex. PAC-3 at 14, lines 19-24.

⁹⁸ *McDaniel v. Texas Nat. Res. Conservation Comm'n*, 982 S.W.2d 650, 654 (Tex. App.—Austin 1998, pet. denied).

⁹⁹ Ex. ED-SG-1 at 16, lines 29-31.

¹⁰⁰ Ex. ED-SG-1 at 16, lines 16-19.

with the Program's goals and policies.¹⁰¹ From this worksheet, Ms. Gibson was able to determine that the draft permit is considered above threshold and is therefore consistent with the Program's goals and policies.¹⁰²

The Protestants did not put forth any evidence which directly controverted the ED's position on this issue, therefore, based on the greater weight of evidence in the record, OPIC finds that the draft permit is consistent with the Texas Coastal Management Programs goals and policies.

7. Whether the modeling complies with applicable regulations to ensure the draft permit is protective of water quality, including utilizing accurate inputs.

As discussed earlier, CORMIX modeling was performed in connection with this Application to model the mixing of the effluent in the Corpus Christi Bay. Ms. Cunningham, on behalf of the ED, testified that, among other things, the depth of the water body and the discharge port height above the channel are both required model inputs that affect the model predictions.¹⁰³ The Application states that the water depth at the proposed discharge location is approximately 63 feet.¹⁰⁴ Ms. Cunningham stated that the ED relied on the information submitted in the application.¹⁰⁵ Further, based on the application, Ms. Cunningham understood that the diffuser height would be 50.4 feet.¹⁰⁶

However, PAC expert Mr. Trungale testified that at the proposed discharge location an eddy exists, which has deepened the channel to an approximate depth of 90 feet.¹⁰⁷ OPIC notes that both PAC and the Port agreed about the presence of the depression and its

¹⁰¹ Ex. ED-SG-1 at 16, lines 20-22.

¹⁰² Ex. ED-SG-1 at 16, lines 29-31.

¹⁰³ Ex. ED-KC-1 at 21, lines 12-14.

¹⁰⁴ Ex. ED-KC-1 at 12, lines 7-8.

¹⁰⁵ Ex. ED-KC-1 at 16, lines 31-2.

¹⁰⁶ Ex. ED-KC-1 at 21, lines 8-9.

¹⁰⁷ Ex. PAC-2 at 13, lines 27-28.

approximate depth.¹⁰⁸ Mr. Wiland testified that the Port has never identified the size or characteristics of the eddy or provided any evaluation of its impact.¹⁰⁹ Ms. Cunningham stated that she “did not attempt to simulate the presence of an eddy in any of her CORMIX modeling.”¹¹⁰ Mr. Trungale further opined that the plume of effluent will settle into the depression and fill it with high salinity water, adding that it would be hard to see how denser water would flow out of a hole.¹¹¹ In response, Ms. Cunningham stated that evaluating salinity buildup in the depression is beyond the scope of her review.¹¹² However, she agreed that Mr. Trungale’s modeling showed that the effluent falls to the bottom of the Channel in less than ten meters.¹¹³ Port expert Dr. Tischler testified that “assigning a bottom depth less than the true depth has the effect of reducing the calculated dilution of the plume.”¹¹⁴ He also stated that “...sometimes you have to set a false bottom in the receiving water because [CORMIX] has certain limitations on input.”¹¹⁵

PAC expert Mr. Wiland testified that because of the presence of the eddy, and resulting depression, the use of the CORMIX model is inappropriate.¹¹⁶ However, Ms. Cunningham testified that TCEQ does not have any other model to use besides the CORMIX model.¹¹⁷ Further, Port expert Dr. Tischler testified that there is no other modeling program better suited for modeling the discharge from the desalination facility

¹⁰⁸ Ex. PAC-18 at 15, lines 25-3.

¹⁰⁹ Ex. PAC-3 at 21, lines 23-26.

¹¹⁰ Ex. ED-KC-1 at 20, lines 7-8.

¹¹¹ Ex. PAC-2 at 14, lines 21-24; Hearing Transcript Vol. 2 (Nov. 4, 2020) at 176, lines 22-3.

¹¹² Ex. ED-KC-1 at 21, lines 27-32.

¹¹³ Hearing Transcript Vol. 6 (Nov. 10, 2020) at 67, lines 20-15.

¹¹⁴ Ex. APP-LT-1 at 48, lines 1-3.

¹¹⁵ Hearing Transcript Vol. 3 (Nov. 5, 2020) at 234, lines 17-1.

¹¹⁶ Ex. PAC-3 at 21, lines 26-29.

¹¹⁷ Ex. ED-KC-1 at 14, lines 5-6.

and the diffuser design.¹¹⁸ Finally, Mr. Wiland did not identify any other modeling program to use, and conceded on cross-examination that he did not know if the TCEQ had a more appropriate EPA-approved modeling program.¹¹⁹

Additionally, because the Applicant did not provide site-specific information, the model used an assumed ambient water velocity of 0.05 meters per second.¹²⁰ Ms. Cunningham testified that this is a conservative input and would, assumedly, result in less mixing than at higher velocities.¹²¹ Additionally, this is consistent with TCEQ guidance that allows an assumed small velocity for this type of discharge.¹²² However, she also said that she doesn't know what the impact of different water velocities would be on effluent percentages in the Zone of Initial Dilution, which is one of the mixing zones.¹²³

PAC's expert, Mr. Trungale found that running the CORMIX model with a range of discharges and ambient water velocities resulted in poor mixing under certain conditions, with approximately 70 percent of the effluent present at the boundary of the zone of initial dilution.¹²⁴ Further, Mr. Trungale found that these conditions exist up to 73 percent of the time.¹²⁵ In response, Dr. Tischler, on behalf of the Port, performed additional modeling using a revised diffuser design. This is discussed in more detail in Section III.4.

Ms. Cunningham also testified that at the time she reviewed the Application the intake was proposed to be in a channel adjacent to Harbor Island, however, the current

¹¹⁸ Ex. APP-LT-1 at 46, lines 26-29.

¹¹⁹ Hearing Transcript Vol. 2 (Nov. 4, 2020) at 201, lines 1-16.

¹²⁰ Ex. ED-KC-1 at 15, lines 6-8; p. 13, lines 1-3.

¹²¹ Ex. ED-KC-1 at 13, lines 3-5.

¹²² Ex. ED-KC-1 at 13, lines 19-22.

¹²³ Ex. ED-KC-1 at 13, lines 17-19.

¹²⁴ Ex. PAC-2 at 10, lines 22-25.

¹²⁵ Ex. PAC-2 at 16, lines 17-28.

proposed location of the intake is now in the Gulf of Mexico.¹²⁶ This is important because the effluent densities that are used in the modeling are dependent on the intake water's characteristics, including its salinity content. Because the Port has never provided TCEQ with any updated effluent densities representative of the new location of the intake, the modeling is only based on the effluent densities for the intake when it was proposed to be in the channel adjacent to Harbor Island.¹²⁷ Therefore, TCEQ has not evaluated the effect of the relocation of the intake on the relevant modeling. Mr. Trungale testified that the model needs to consider data that is representative of the source water and that the modeling failed to do this.¹²⁸ Further, Mr. Trungale testified that the water in the Gulf has a saline content closer to 30.3 parts per thousand, not the 22.9 parts per thousand that the Port and TCEQ used in their model simulations.¹²⁹ This change will affect the density of the effluent, and consequently, the percentage of effluent at the mixing zones.¹³⁰ However, Mr. Palachek testified that there was no material difference between the ambient salinity of the Lydia Ann Channel and ambient salinity of the Gulf of Mexico.¹³¹ Upon cross-examination, Port expert Dr. Tischler agreed that in the context of an antidegradation review, if an applicant provided incorrect effluent concentration data, that would make any resulting analysis essentially meaningless.¹³²

Further, because the Application did not indicate that the proposed Facility would be run at less than the maximum daily average permitted flow of 95.6 million gallons per

¹²⁶ Ex. ED-KC-1 at 16, lines 5-12.

¹²⁷ Ex. ED-KC-1 at 16, lines 12-15.

¹²⁸ Ex. PAC-2 at 11, lines 5-10.

¹²⁹ Ex. PAC-2 at 18, lines 11-13.

¹³⁰ Ex. PAC-2 at 18, lines 13-16.

¹³¹ Ex. APP-RP-1 at 19, lines 14-16.

¹³² Hearing Transcript Vol. 3 (Nov. 5, 2020) at 212, lines 19-5.

day, this was the only flow rate TCEQ evaluated for purposes of the model.¹³³ However, it appears that the Port may initially operate the proposed Facility at less than full capacity.¹³⁴ PAC expert Mr. Trungale found that at lower flow rates, model results indicate that the discharges do not meet the target dilutions at the mixing zones.¹³⁵ The ED's expert, Ms. Cunningham agreed that the plant capacity affects the discharge flow, and that affects the model results for the percentage of effluent at the zone of initial dilution.¹³⁶ The Port's expert, Dr. Tischler testified that by use of "duckbill" ports on the diffuser, the discharge could achieve the necessary exit velocity to comply with permit requirements.¹³⁷

Finally, Mr. Trungale opined that in connection with the modeling, it was inappropriate for the Port and TCEQ to only consider temperature and salinity for the winter and summer seasons.¹³⁸ Mr. Trungale argues that the worst mixing results were found in the fall, therefore spring and fall seasons should have been considered.¹³⁹ Ms. Cunningham testified that TCEQ guidance specifies that mixing should be evaluated in summer and winter conditions.¹⁴⁰ However, she also stated that it is impossible to know which set of conditions will result in the poorest mixing conditions prior to running the model and that the intent is to capture the worst mixing scenario.¹⁴¹

After considering all of the evidence and testimony presented, OPIC finds that the greater weight of the evidence supports a finding that the modeling does not comply with

¹³³ Ex. ED-KC-1 at 14, lines 23-31.

¹³⁴ Ex. PAC-2 at 15, lines 29-31.

¹³⁵ Ex. PAC-2 at 16, lines 7-10.

¹³⁶ Hearing Transcript Vol. 6 (Nov. 10, 2020) at 58, lines 8-12.

¹³⁷ Ex. APP-LT-1 at 36, lines 26-30; p. 37, lines 2-5.

¹³⁸ Ex. PAC-2 at 19, lines 1-4.

¹³⁹ Ex. PAC-2 at 19, lines 12-15 and 18-19.

¹⁴⁰ Ex. ED-KC-1 at 17, lines 8-10.

¹⁴¹ Ex. ED-KC-1 at 17, lines 10-13 and 20.

applicable regulations to ensure the draft permit is protective of water quality, including utilizing accurate inputs.

8. Whether the Executive Director's antidegradation review was accurate.

Dr. Wallace performed the antidegradation review for the ED.¹⁴² Dr. Wallace testified that she performed both Tier I and Tier II antidegradation reviews. The purpose of a Tier I review is to determine if the discharge is protective of existing designated uses. The current designated uses of Corpus Christi Bay in Segment 2481 of the Bays and Estuaries, where the discharge is proposed to be located, are primary contact recreation, exceptional aquatic life use, oyster waters, and 5.0 milligrams per liter dissolved oxygen.¹⁴³

Dr. Wallace testified that in performing her Tier I review she considered that the increase in the salinity concentration over ambient at the edge of the mixing zone would be no greater than one percent.¹⁴⁴ Dr. Wallace was then able to conclude that this increase was within the tolerances of multiple marine species which are found in the channel.¹⁴⁵ Dr. Wallace further concluded that the designated uses would be maintained and that the proposed discharge will not contribute to any known water quality impairments.¹⁴⁶

However, Dr. Wallace also conceded that she had no basis to disagree with Dr. Esbaugh's position that baseline salinity in the Channel is already at the limit of some marine organisms' physiological tolerance some of the time.¹⁴⁷ She also agreed that if a system were on the edge of collapse, then the amount of salinity found at the edge of the

¹⁴² Ex. ED-MW-1 at 9, lines 10-11.

¹⁴³ Ex. Tab F ED at 0067.

¹⁴⁴ Ex. ED-MW-1 at 16, lines 26-2.

¹⁴⁵ Ex. ED-MW-1 at 16, lines 4-7.

¹⁴⁶ Ex. ED-MW-1 at 18, lines 1-3 and 10-12.

¹⁴⁷ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 205, lines 11-21.

mixing zone could cause collapse.¹⁴⁸

The purpose of a Tier II review is to ensure that no regulatory action will be taken that will cause degradation of existing water quality more than a *de minimis* amount.¹⁴⁹ Dr. Wallace performed a Tier II review, again considering the impact of an increase in ambient salinity concentration of no greater than one percent.¹⁵⁰ Dr. Wallace further determined that there were no visible seagrass or oyster beds in the Corpus Christi Channel and therefore they would not be impacted.¹⁵¹ Finally, Dr. Wallace determined that the zone of passage should be protective of the designated aquatic life use and that the effluent should not have negative impacts for the passage of marine species.¹⁵²

However, Dr. Wallace also testified that it is very difficult to perform antidegradation reviews on new facilities and that she felt uncomfortable performing this review because of the size, nature, and location of the discharge.¹⁵³ Further, Dr. Wallace testified that she used her best professional judgment in performing the antidegradation review,¹⁵⁴ but at the hearing was unable to identify the bases for many of her conclusions.

Upon cross-examination, Dr. Wallace testified that because of the absence of effluent data she had to think and speculate about whether the discharge will be protective of water quality, and ultimately relied on the CORMIX model to do so.¹⁵⁵ She also said that in the absence of data, she does not have enough time to determine whether there is

¹⁴⁸ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 203, lines 13-2; p. 205, lines 2-5.

¹⁴⁹ Ex. APP-LT-1 at 19, lines 3-5.

¹⁵⁰ Ex. ED-MW-1 at 18, lines 24-25.

¹⁵¹ Ex. ED-MW-1 at 18, lines 8-10.

¹⁵² Ex. ED-MW-1 at 19, lines 13-14 and 22-23.

¹⁵³ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 186, lines 4-10 and 16-21.

¹⁵⁴ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 200, lines 11-19.

¹⁵⁵ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 182, lines 5-15.

more than a *de minimis* change.¹⁵⁶ At her deposition Dr. Wallace testified that she was able to conclude that there would be no more than a *de minimis* impact by considering tidal exchange, wind events, and ship traffic.¹⁵⁷ However, at hearing, Dr. Wallace stated that ship traffic did not inform her antidegradation review.¹⁵⁸ Dr. Wallace also said that she did not review any data on wind in the Channel and instead relied on her experience living and working there.¹⁵⁹ Dr. Wallace further testified that she concluded there was adequate tidal exchange based on her review of GIS measurements and the CORMIX report.¹⁶⁰ Specifically, Dr. Wallace used the CORMIX report to determine the extent of the plume that would result from the discharge.¹⁶¹ Dr. Wallace testified a change in the diffuser design might impact antidegradation review.¹⁶² However, as discussed in Section III.4, the diffuser design was revised after the CORMIX modeling relied on by Dr. Wallace was performed.¹⁶³ In light of the Dr. Tischler's testimony that the revised design will have to be used to meet permit requirements, the antidegradation review appears to be based, at least in part, on information that is no longer accurate.

PAC's expert, Dr. Wiland, criticized the ED's Tier II review because it did not, in his opinion, consider baseline conditions in 1975 in order to determine what constitutes a *de minimis* degradation of the marine environment.¹⁶⁴ However, Dr. Wallace explained that the TCEQ's Implementation Procedures address conditions in 1975 and have been

¹⁵⁶ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 184, lines 19-9.

¹⁵⁷ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 188, lines 8-21; p. 192, lines 14-22; p. 195, lines 10-16.

¹⁵⁸ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 195, lines 10-22.

¹⁵⁹ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 192, lines 23-9.

¹⁶⁰ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 189, lines 24-9.

¹⁶¹ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 218, lines 18-23.

¹⁶² Hearing Transcript Vol. 5 (Nov. 9, 2020) at 214, lines 4-10.

¹⁶³ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 219, lines 7-3.

¹⁶⁴ Ex. PAC-3 at 20, lines 9-11.

approved by the EPA.¹⁶⁵ Further, Dr. Wallace opined that TCEQ's antidegradation review complies with all applicable state and federal statutes and regulations.¹⁶⁶ Additionally, Port expert Dr. Tischler testified that because there are no higher designated uses than the uses designated for Segment 2481, by the definition in the rule, application of the existing applicable standards are the only appropriate basis for evaluating antidegradation for a new discharge.¹⁶⁷ Upon cross-examination, Dr. Wiland conceded that "[an antidegradation review] would have to consider the conditions in 1975 or the conditions - the current conditions, if they haven't changed any."

Finally, Dr. Wallace did not perform a new antidegradation review after the effluent percentage at the zone of initial dilution was increased in the draft permit, however, Ms. Cunningham testified that the review did not need to change because the percentage of effluent at the mixing zone boundary stayed the same.¹⁶⁸

After considering all of the evidence and testimony presented, OPIC finds that the greater weight of the evidence supports a finding that the Port has not carried its burden in proving that the antidegradation review is accurate. Dr. Wallace did not have the analytical data necessary to inform her review and, consequently, was unable to substantiate the substantive bases for many of her conclusions. Additionally, in performing her review, Dr. Wallace relied on information taken from now inaccurate CORMIX modeling.

¹⁶⁵ Ex. ED-MW-1 at 21, lines 28-31; p. 23, lines 14-17 and 24-28.

¹⁶⁶ Ex. ED-MW-1 at 25, lines 27-28.

¹⁶⁷ Ex. APP-LT-1 at 42, lines 12-16.

¹⁶⁸ Hearing Transcript Vol. 6 (Nov. 10, 2020) at 99, lines 5-14.

9. Whether the draft permit includes all appropriate and necessary requirements.

The ED's witness, Ms. Gibson testified that in her opinion the draft permit includes all appropriate and necessary requirements.¹⁶⁹

PAC expert Mr. Wiland testified that, among other things, the descriptions of the mixing zones, including the zone of initial dilution are ambiguous.¹⁷⁰ Specifically, the zone of initial dilution is defined as a 49 foot by 160 foot rectangle that is centered on the diffuser barrel.¹⁷¹ According to Mr. Wiland, the term "centered on the diffuser barrel" could be interpreted to mean that the diffuser is in the center of the rectangle or along the edge of the rectangle.¹⁷² Mr. Wiland explains that putting the diffuser along the edge of the mixing zone in tidal waters will likely result in violations of the permit because of the back and forth movement of the water.¹⁷³ Ms. Cunningham testified that you cannot have more than 18 percent effluent at any boundary of the zone of initial dilution.¹⁷⁴

However, Port expert Dr. Tischler testified that the correct way to configure the zone of initial dilution is at the nearshore edge of the diffuser barrel as it was configured by the Port and TCEQ.¹⁷⁵ He further opined that "the fact that the area is tidally impacted does not change this configuration of the mixing zones because during both the ebb and flood tide the discharge of the effluent is cross-channel and perpendicular to the direction of the ambient current."¹⁷⁶

¹⁶⁹ Ex. ED-SG-1 at 18, lines 15-17.

¹⁷⁰ Ex. PAC-3 at 26, lines 21-22.

¹⁷¹ Ex. PAC-3 at 26, lines 24-25; Admin. Record, Tab F, ED-0051.

¹⁷² Ex. PAC-3 at 26, lines 26-29; Ex. PAC-3 BW-8.

¹⁷³ Ex. PAC-3 at 27, lines 4-8.

¹⁷⁴ Hearing Transcript Vol. 6 (Nov. 10, 2020) at 23, lines 5-8.

¹⁷⁵ Ex. APP-LT-1 at 45, lines 4-6.

¹⁷⁶ Ex. APP-LT-1 at 45, lines 8-11.

OPIC finds the Protestants' testimony on this issue to be persuasive. There is ambiguity in the description of the configuration of the diffuser relative to the boundary of the zone of initial dilution; but more significantly, if the diffuser barrel is located along the boundary of the zone of initial dilution, effluent could move behind the diffuser at concentrations that violate the draft permit.

Mr. Wiland also opined because of dissolved copper's presence in the Lydia Ann Channel, there is a potential for it to be present in the discharge. However no copper data is available for the Gulf of Mexico station at Port Aransas near where the intake is currently proposed to be located.¹⁷⁷ Upon cross-examination, Mr. Wiland testified that he was unaware whether the Port would be required to test for copper after it commences discharge, but that testing after the discharge commences would be unacceptable.¹⁷⁸

As discussed in Section III.1, the ED has explained that because the proposed Facility has not yet been constructed, no analytical data was provided in the application, and therefore screening against water-quality based effluent limitations could not be accomplished. Because of this, the draft permit includes Other Requirement No. 8, which requires the Port to conduct effluent sampling upon discharge and submit the data to TCEQ, who then can re-open the permit and add additional requirements if necessary. While OPIC appreciates that testing of the intake water before the proposed Facility begins to operate is preferred by Protestants, sampling and analysis of the effluent upon commencement of discharge is a common practice for facilities that have not commenced discharge at the time of the application.¹⁷⁹

¹⁷⁷ Ex. PAC-3 at 18, lines 3-4 and 8-10.

¹⁷⁸ Hearing Transcript Vol. 2 (Nov. 4, 2020) at 231, lines 16-2.

¹⁷⁹ Ex. ED-SG-1 at 26, lines 6-15.

Other Requirement Nos. 3 and 4 of the Draft Permit define the mixing zone and the zone of initial dilution.¹⁸⁰ PAC expert Mr. Holt testified that the descriptions of the mixing zones are inadequate because they only are described in consideration of width and length, with no consideration of the height, and therefore, no consideration of water volumes.¹⁸¹ However, Mr. Holt did not point to any TCEQ rule that requires the height of a mixing zone to be considered and it appears to OPIC that the ED properly applied TCEQ rules and procedures in using only width and length to describe the mixing zones.

Other Requirement No. 9 requires the Port to complete a study of ambient water velocity at the outfall capturing velocities encompassing at least one tidal cycle and submit a report to TCEQ during the term of the permit.¹⁸² While Ms. Gibson testified that this could be completed at any time during the permit term of five years,¹⁸³ PAC expert Dr. Wiland testified that a tidal cycle could be completed in approximately 25 hours.¹⁸⁴ If the permit is issued, given the short duration of time it would take to complete such a study, it would be reasonable for Other Requirement 9 to require the Port to complete the study no later than six months following commencement of the discharge.

Additionally, the draft permit contains minimum and maximum pH limits.¹⁸⁵ However, the pH screening document contained in the ED's Statement of Basis/Technical Summary¹⁸⁶ utilized inaccurate inputs, including depth of the plume,¹⁸⁷ temperature of the

¹⁸⁰ Admin. Record, Tab F, ED-0014.

¹⁸¹ Ex. PAC-4 at 17, lines 22-3.

¹⁸² Admin. Record, Tab F, ED-0015.

¹⁸³ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 63, lines 9-21.

¹⁸⁴ Hearing Transcript Vol. 2 (Nov. 4, 2020) at 234, lines 20-21.

¹⁸⁵ Admin. Record, Tab F, ED-0002.

¹⁸⁶ Admin. Record, Tab F, ED-0047.

¹⁸⁷ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 233, lines 19-4.

receiving water,¹⁸⁸ and effluent salinity concentration.¹⁸⁹ Given that this information was used to set the pH limits of the draft permit, OPIC is unable to conclude that these limits are accurate.

Finally, as discussed in Section III.7, the proposed Facility, at least initially, is expected to operate at less than the maximum daily average permitted flow of 95.6 million gallons per day. Ms. Cunningham agreed that the plant capacity affects the discharge flow, and that affects the model results for the percent effluent at the zone of initial dilution.¹⁹⁰ However, the draft permit does not contain a minimum flow rate.¹⁹¹ Therefore, it appears reasonable to OPIC to require a minimum flow rate in the draft permit to ensure that required effluent percentages are met.

After considering all of the evidence and testimony presented, OPIC finds that the greater weight of the evidence supports a finding that the draft permit does not include all appropriate and necessary requirements.

IV. CONCLUSION

For the reasons discussed above, the record supports findings and conclusions that the proposed draft permit does not meet applicable requirements regarding Issue nos. 1, 3, 4, 7, 8, and 9. Therefore, OPIC recommends denial of the permit.

Respectfully submitted,

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¹⁸⁸ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 234, lines 14-21.

¹⁸⁹ Hearing Transcript Vol. 5 (Nov. 9, 2020) at 236, lines 18-12.

¹⁹⁰ Hearing Transcript Vol. 6 (Nov. 10, 2020) at 58, lines 8-12.

¹⁹¹ Hearing Transcript Vol. 6 (Nov. 10, 2020) at 107, lines 20-23.

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CERTIFICATE OF SERVICE

I hereby certify that on November 30, 2020, the foregoing document was filed with SOAH, the TCEQ Chief Clerk, and copies were served to all parties on the attached mailing list via e-mail, hand delivery, facsimile transmission, inter-agency mail, or by deposit in the U.S. Mail.


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PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY
SOAH DOCKET NO. 582-20-1895
TCEQ DOCKET NO. 2019-1156-IWD

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