TCEQ DOCKET NO. 2021-0421-WR

APPLICATION BY THE PORT OF CORPUS CHRISTI AUTHORITY OF NUECES COUNTY FOR WATER RIGHTS PERMIT NO. 13630	**§ § § § §**	**BEFORE THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY**

INGLESIDE ON THE BAY COASTAL WATCH ASSOCIATION'S REPLY TO RESPONSES TO HEARING REQUESTS

TO THE HONORABLE MEMBERS OF THE TEXAS COMMISSION ON ENVIRONMENTAL QUALITY:

Ingleside on the Bay Coastal Watch Association ("IOBCWA") hereby submits this Reply to the Executive Director's ("ED") and the Office of Public Interest Counsel's ("OPIC") Responses to Hearing Requests regarding the Application by the Port of Corpus Christi Authority of Nueces County for Water Rights Permit No. 13630. IOBCWA has satisfied all the criteria to demonstrate associational standing and to demonstrate that the organization includes at least one member who is an affected person entitled to a contested case hearing in their own right. IOBCWA's hearing request must therefore be granted. For support, IOBCWA respectfully offers the following:

I. IOBCWA satisfies the associational standing test.

Among the requirements to demonstrate associational standing, under TCEQ's rules, are:

> (1) one or more members of the group or association would otherwise have standing to request a hearing in their own right;
>
> (2) the interests the group or association seeks to protect are germane to the organization's purpose; and

> (3) neither the claim asserted nor the relief requested requires the participation of the individual members in the case.

30 Tex. Admin. Code § 55.252(a).

Neither the ED nor OPIC disputes that IOBCWA has satisfied the second and third criteria listed above. And OPIC correctly recognized that IOBCWA has several members who demonstrated that they are affected persons and have standing to request a hearing in their own right.[1]

The ED, however, argues that none of the members identified by IOBCWA has standing to request a hearing in their own right "because they do not hold water rights and do not have a riparian interest in Corpus Christi Bay."[2] But the ED misinterprets the legal standard for determining whether one is an affected person. As discussed more fully below, one need not possess a water right or a riparian interest to demonstrate standing. In fact, one need not even possess a property right, so long as the hearing requestor possesses a personal justiciable interest that is not common to the general public; this interest could be related to a recreational interest or an economic interest or other legal right or privilege. *See* Tex. Water Code § 5.115(a); 30 Tex. Admin. Code § 55.256(a).

A. Standard for determination of affected person, under TCEQ's rules & relevant "standing" caselaw

TCEQ rules define an affected person as "one who has a personal justiciable interest related to a legal right, duty, privilege, power, or economic interest affected by the application. An interest common to members of the general public does not qualify as a

[1] OPIC's Response to Hearing Requests, pp. 5-6.
[2] ED's Response to Hearing Requests, p. 6.

personal justiciable interest." 30 Tex. Admin. Code § 55.256(a); *see also* Tex. Water Code § 5.115(a).

The rules also list factors to be considered in determining whether a hearing requestor is an affected person:

> (1) whether the interest claimed is one protected by the law under which the application will be considered;
> (2) distance restrictions or other limitations imposed by law on the affected interest;
> (3) whether a reasonable relationship exists between the interest claimed and the activity regulated;
> (4) likely impact of the regulated activity on the health, safety, and use of property of the person;
> (5) *likely impact of the regulated activity on use of the impacted natural resource by the person*; and
> (6) for governmental entities, their statutory authority over or interest in the issues relevant to the application.

30 Tex. Admin. Code § 55.256(c).

Members of IOBCWA have alleged personal justiciable interests related to their property interests, economic interests, and recreational interests—interests not common to members of the general public—and they have explained how those interests will be affected by the proposed water right at issue here. An economic interest is specifically recognized under the statutory definition of an affected person. Tex. Water Code § 5.115(a). Property rights are likewise considered legal rights, not common to members of the general public under Section 5.115(a).

As to recreational interests, the United States Supreme Court has already settled the issue of whether a recreational interest is sufficient for purposes of standing. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs.*, 528 U.S. 167, 182 (2000). In *Laidlaw*, the Court

explained that "plaintiffs adequately allege injury in fact when they aver that they use the affected area and are persons 'for whom the aesthetic and recreational values of the area will be lessened' by the challenged activity." *Id.* (quoting *Sierra Club v. Morton*, 405 U.S. 727, 735 (1972), and citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 562-563 (1992)). "Reasonable concerns" about the impacts of the challenged activity may be sufficient to show that the recreational, aesthetic, and economic interests are directly affected, and thus, that an injury in fact exists for purposes of standing. *Id*. at 183-84.

TCEQ's own rules also acknowledge that a recreational interest is a factor that the Commission must consider when evaluating hearing requests. Among the factors listed in TCEQ's rules is the "likely impact of the regulated activity on use of the impacted natural resource by the person." 30 Tex. Admin. Code § 55.256(b)(5).

In addition, the statutory scheme applicable to water rights further supports a determination that a recreational interest is a justiciable interest. The Legislature has recognized recreational uses as "beneficial uses" for purposes of issuing a water right. Tex. Water Code § 11.023(a)(5), (6) ("state water may be appropriated for . . . navigation; recreation and pleasure"). Likewise, TCEQ's rules list recreation as one of the beneficial uses for which State water may be appropriated. 30 Tex. Admin. Code § 297.43(a)(7). If both the Legislature and the TCEQ recognize that recreational use is a beneficial use for appropriating State water, then, it must also be a sufficient interest for one seeking to protest the appropriation of State water.

In short, the applicable statutes, rules, and relevant caselaw support a finding that IOBCWA members possess personal justiciable interests and are affected persons; their hearing requests should therefore be granted.

B. The ED misinterprets the applicable law.

In his Response to Hearing Requests, the ED includes arguments that purportedly support his recommendation of denial of all hearing requests, but these legal arguments are inaccurate, inapposite, and irrelevant to the issue of whether IOBCWA's members are affected persons.

First, the ED maintains that IOBCWA's hearing request should be denied because none of its identified members "have a riparian interest in Corpus Christi Bay";[3] "their land is not riparian because it is not located on the bank of a river, stream, or lake."[4] But the ED failed to recognize that waterfront property owners possess a littoral interest.[5] *See* Tex. Nat. Res. Code § 61.001(6) ("'Littoral owner' means the owner of land adjacent to the shore"). No waterfront property owner has a riparian interest, because the bay is not a river, stream, or lake. Riparian interests are not relevant here.[6]

Next, the ED cites *Save Our Springs Alliance v. City of Dripping Springs*, 304 S.W.3d 871 (Tex. App.—Austin, pet. denied), in support of his recommendation of denial of the hearing requests. The ED maintains that this case supports the proposition that certain interests are sufficient to establish standing only "if coupled with riparian property

[3] ED's Response to Hearing Requests, p. 6.
[4] ED's Response to Hearing Requests, p. 3.
[5] OPIC, on the other hand, properly recognized IOBCWA members' littoral interests. OPIC's Response to Hearing Requests, p. 9.
[6] *See* OPIC's Response to Hearing Requests, p. 1, n.1 for a discussion of relevant caselaw regarding littoral rights.

ownership."[7] But, as explained above, the bay is not a river, stream, or lake, and so riparian interests are not relevant here. It simply does not make sense to require a riparian interest, when the challenged application does not involve a river, stream, or lake.

Moreover, the *Dripping Springs* case, cited by the ED, did not involve a decision by an administrative agency; it was a case based on the Open Meetings Act. In fact, in the *Dripping Springs* case the court of appeals was careful to distinguish the Save Our Springs Alliance's Open Meetings Act claims from administrative appeals authorized under Section 5.351 of the Texas Water Code. *Id*. at 882, n.7. The court explained that its holding regarding SOSA's standing "will not likely affect [a party's] future ability to [] file suit under" Texas Water Code Section 5.351. *Id*. In other words, the court's opinion in *Dripping Springs* is not relevant to determining whether one has standing to seek judicial review of a TCEQ permitting decision, and it is likewise not relevant to determining whether one is an affected person for purposes of a TCEQ permitting matter.

Next, the ED cites the Open Beaches Act for the proposition that the hearing requestors' properties do not extend to the water, because the Act allows the general public access to the water via the "wet beach," or the land from the mean high tide mark to the water.[8] This interpretation of the law is inaccurate, and the Open Beaches Act is irrelevant to the issue of whether IOBCWA's members are affected persons.

Under the Open Beaches Act, "beach" means: "state-owned beaches to which the public has the right of ingress and egress bordering on the seaward shore of the Gulf of

[7] ED's Response to Hearing Requests, p. 2.
[8] ED's Response to Hearing Requests, p. 3.

Mexico or any larger area extending from the line of mean low tide to the line of vegetation bordering on the Gulf of Mexico *if the public has acquired a right of use or easement to or over the area by prescription, dedication, or has retained a right by virtue of continuous right in the public*." Tex. Nat. Res. Code § 61.012 (emphasis added).

"Public beach" means: "any beach area, whether publicly or privately owned, extending inland from the line of mean low tide to the line of vegetation bordering on the Gulf of Mexico *to which the public has acquired the right of use or easement* to or over the area by prescription, dedication, presumption, or has retained a right by virtue of continuous right in the public since time immemorial, as recognized in law and custom." *Id.* § 61.001(8) (emphasis added).

These two definitions, in the Open Beaches Act, define public beaches by recognizing two criteria: physical location and right of use. *Severance v. Patterson*, 370 S.W.3d 705, 713, 714 (Tex. 2012). "Wet beaches," or those areas from the mean low tide to mean high tide, are owned by the State. *Id.* "Dry beaches," or the area from mean high tide to the vegetation line, may be privately owned; they are not necessarily State-owned beaches. If a dry beach is privately owned, then, it may nevertheless fall within the definition of a "public beach" *if the State establishes a right to public use—a public easement*. *Id.* at 715.

The ED has failed to delineate any State-owned "wet beach" here. He makes no attempt to delineate the mean low tide or mean high tide. Nor has the ED delineated the boundaries of a "dry beach." He has made no attempt to delineate the vegetation line, for

instance. And the ED has failed to establish that a public easement exists on any of the hearing requestors' waterfront properties. *See* Tex. Nat. Res. Code §§ 61.001(8); 61.012.

As discussed more fully below, Mr. Serna and Mr. Nye both possess waterfront property interests and littoral rights, and the ED has presented no evidence to the contrary. The ED has failed to cite to any law in support of his argument that their legal property rights and littoral rights are insufficient for purposes of standing.

Even if the ED could demonstrate that State-owned beach exists near Mr. Serna's and Mr. Nye's properties or that a public easement exists on their properties, this does not negate their personal justiciable interests for purposes of their "affected person" status. As the Supreme Court has recognized, "the fact that particular environmental interests are shared by the many rather than the few does not make them less deserving of legal protection," so long as the party seeking review is himself among the injured. *Morton*, 405 U.S. at 734. In other words, even if the general public has a right of access to the bay, and even if members of the general public will be adversely impacted by the proposed water right, this does not negate Mr. Serna's and Mr. Nye's personal justiciable interests; nor does it make their justiciable interests less deserving of legal protection from the harmful impacts of the proposed water right. In any event, as discussed below, Mr. Nye's and Mr. Serna's personal justiciable interests are not common to the general public.

C. Several IOBCWA members satisfy the definition of affected person.

For brevity, IOBCWA will not, in this reply, reiterate the personal justiciable interests identified by the various members who submitted hearing requests. For purposes

of this reply, IOBCWA will focus its discussion on only a few of the members identified in its hearing request.

1. Encarnacion Serna

It is undisputed that Mr. Serna owns waterfront property, that the proposed intake structure is approximately 3250 feet away from his property, and that the main facility will be located approximately one mile from Mr. Serna's home.[9] Mr. Serna also owns a boardwalk or pier appurtenant to the property, extending into the bay. Mr. Serna's property and associated pier provide him with a legal property right and a justiciable interest that is not common to the general public.

[9] ED's Response to Hearing Requests, pp. 16-17; OPIC's Response to Hearing Requests, p. 9.

Figure 1: Mr. Serna's property is identified in the above figure as Property ID Number 65246.

Based on these representations, OPIC recommended that Mr. Serna's hearing request be granted. As OPIC explained, Mr. Serna's property was "identified on the map created by the executive director," he owns "waterfront property and, accordingly, . . . would have littoral interests and water rights."[10]

The ED, in his response to hearing requests, also acknowledged that Mr. Serna owns "waterfront property that is located approximately one mile from the Applicant's proposed diversion point."[11] Without explanation, however, the ED recommended denial of Mr. Serna's hearing request because he "disagrees that the requestor's location and identified interests establish a personal justiciable interest."[12] The ED failed to explain how a legal property right is not a personal justiciable interest.

In an abundance of caution, and because the ED's rationale for recommending denial of Mr. Serna's hearing request is unclear, attached to this Reply as Exhibit 1 is a copy of a survey, establishing Mr. Serna's waterfront property right, which extends to the bay.[13] Also attached as Exhibit 2 are photos of the pier extending from Mr. Serna's property into the bay. These additional exhibits illustrate the extent of Mr. Serna's property, which extends to the water.

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[10] OPIC's Response to Hearing Requests, p. 9.
[11] ED's Response to Hearing Requests, p. 17.
[12] ED's Response to Hearing Requests, p. 17.
[13] Several of the photos depict vegetation up to the shoreline. *See* photos 1-4 from Exhibit 2, and photo 1 from Exhibit 3.

As noted in IOBCWA's hearing request, Mr. Serna also identified recreational interests that will be impacted by the proposed water right. More specifically, Mr. Serna explained that he and his family regularly fish, swim, and kayak in the bay, near his property, less than 1 mile from the proposed diversion point. Mr. Serna often catches fish that he and his family, including 10 grandchildren who frequently visit, consume. Attached as Exhibit 3 are photos of Mr. Serna's family recreating in the bay or on Mr. Serna's property.

The attached exhibits demonstrate that Mr. Serna possesses personal, legal, justiciable interests that are not common to members of the general public. Members of the general public do not own waterfront property and a pier extending into the bay, less than 1 mile from the proposed diversion point; members of the public do not regularly recreate—fish, swim, and kayak—in the bay, less than 1 mile from the proposed diversion point; members of the public do not regularly consume fish caught from the bay within 1 mile from the proposed diversion point. The ED points to legal authority to support the proposition that these interests are not personal, justiciable interests. Indeed, the relevant legal authority establishes that these interests satisfy the test for standing. *See, e.g., Laidlaw Envtl. Servs.*, 528 U.S. at 182-84.

Further, as discussed more fully below, Mr. Serna's personal justiciable interests will be impacted by the requested water right, if it is granted. *See id.* ("reasonable concerns" about impacts of challenged activity may be sufficient to show that recreational, aesthetic, and economic interests are directly affected for purposes of standing). The proximity of Mr. Serna's property interest to the proposed facility intake and his history of fishing and

recreating near the proposed facility and diversion point establish that Mr. Serna and his family will be directly impacted by the proposed water right. The harmful impacts of the proposed intake, including harmful impacts upon aquatic life in the area, will impact his ability to use and enjoy his property. The ED, in his response to hearing requests, did not discuss or dispute that Mr. Serna's interests would be impacted by the proposed water right.[14]

2. Patrick Nye

Patrick Nye also owns waterfront property, as acknowledged by OPIC and the ED. The ED recommended denial of Mr. Nye's hearing request on behalf of IOBCWA because he "does not identify a personal justiciable interest."[15] The ED does not explain how it is that Mr. Nye's legal property right is not a personal justiciable interest, but it appears that the ED erroneously believes that Mr. Nye must have a riparian property right to satisfy the definition of an affected person. The ED also assumes that a wet beach separates Mr. Nye's property from the bay, which, somehow, negates his personal justiciable interest related to his property right. As with Mr. Serna, the ED is mistaken on both counts.

Mr. Nye does not possess a riparian property right, but he does possess littoral rights.[16] Although the ED claims, without any support, that wet beach separates Mr. Nye's

[14] The basis for the ED's recommendation of denial of the hearing request was based on his failure to recognize that Mr. Serna's property and identified interests "establish a personal justiciable interest." ED's Response to Hearing Requests, p. 17. *See also id.*, p. 6 (hearing requestors have not demonstrated standing "because they do not hold water rights and do not have a riparian interest in Corpus Christi Bay").
[15] ED's Response to Hearing Requests, p. 7.
[16] *See* Exhibit 4, p. 3 (Special Warranty Deed conveying property, with southeasterly boundary that "follows the meanders of the shoreline of Corpus Christi Bay" including littoral rights, bulkhead, and fishing pier).

property from the bay, the Appraisal District records, and Mr. Nye's photos demonstrate that there is no beach on Mr. Nye's property.

Figure 2: Mr. Nye's property, shown above, bears the San Patricio County Property ID Number 68229.

Figure 3: Photo of the bulkhead at Mr. Nye's property, which directly abuts Corpus Christi Bay.

Figure 4: Photo of pier extending from Mr. Nye's property to Corpus Christi Bay.

Further, like Mr. Serna, Mr. Nye also possesses a recreational interest that is not common to members of the general public. He, his family, and family friends swim and fish regularly in the waters of the bay. *See* Exhibit 5 (photos of Mr. Nye and his family and friends at his property recreating).

Mr. Nye has established that he possesses a personal justiciable interest related to a property right and recreational interest that is not common to the general public. He has thus demonstrated that he has standing to request a hearing in his own right.

3. Uneeda Laitinen

Ms. Laitinen does not own waterfront property, but her property is sufficiently close to the proposed diversion point—less than 1 mile from the proposed facility intake—that her use and enjoyment of her property would still be impacted by the water right sought by the PoCCA. Moreover, Ms. Laitinen possesses a recreational interest that is not common to the general public. She regularly uses the nearby Bayside Park and recreates, along with her husband, in the bay. As described in the hearing request, Ms. Laitinen and her husband own a boat, which is often used for fishing.

A recreational interest, as discussed above, is sufficient for purposes of establishing standing. In this case, Ms. Laitinen owns property within a mile of the proposed diversion point, and she has a recreational interest that is not common to the general public. She has satisfied the test to show she is an affected person.

4. Captain Wilkerson and Captain Harmon

Both Captain Wilkerson and Captain Harmon possess economic interests (in addition to recreational interests) that would be impacted by the proposed water right, and their economic interests are not common to the general public. Both are fishing guides, and both regularly take individuals to the bay near the area of the proposed diversion point. Captain Harmon also owns a fishing tackle retail store.

Captain Harmon's and Captain Wilkerson's economic interests will be impacted if the bay's ecological health and productivity are adversely impacted by the proposed water right. If the proposed water right adversely impacts fish and wildlife habitat, Captain

Harmon's and Captain Wilkerson's economic interests will also be adversely impacted (as will their recreational interests).

Captain Harmon and Captain Wilkerson have satisfied the definition of an affected person, because both have personal, justiciable interests related to their economic interests that will be affected by the proposed water right, and their interests are not common to the general public. These interests are sufficient to confer standing. *See STOP v. City of New Braunfels*, 306 S.W.3d 919, 928 (Tex. App.—Austin 2010, no pet.) (citing *Lake Medina Conserv. Soc'y v. Texas Natural Res. Conserv. Comm'n*, 980 S.W.2d 511, 516 (Tex. App.—Austin 1998, pet. denied) (association comprised of lakeside property owners and waterfront businesses had standing to challenge administrative action that would cause lake levels to drop); and *Texas Rivers Prot. Ass'n v. Texas Natural Res. Conserv. Comm'n*, 910 S.W.2d 147, 151-52 (Tex. App.—Austin 1995, writ denied) (citing harm to canoe trip guides' "business opportunities" as supporting individual guides' standing to challenge agency action that would lower river levels)).

D. IOBCWA's members' justiciable interests will be adversely impacted by the proposed water right.

IOBCWA's members have also alleged sufficient facts to demonstrate that their justiciable interests will be affected by the proposed water right.

Texas Water Code Chapter 11 and relevant TCEQ rules protect the types of interests that IOBCWA's members possess—property interests, recreational interests, and economic interests. For instance, Section 11.025(b) of the Water Code provides:

"Maintaining the biological soundness of the state's rivers, lakes, bays, and estuaries is of great importance to the public's economic health and general well-being."

And TCEQ Rule 297.41(a)(3)(E) requires the Commission to consider whether the requested water right is consistent with the state water plan, which includes the regional water plans. The regional water plan for Region N (the region that applies here) acknowledges the potential environmental impacts of the La Quinta desalination plant—impacts that affect IOBCWA's members' justiciable interests. The plan provides as follows: "The potential environmental effects resulting from the construction of a desalination plant in the vicinity of Nueces Bay and/or Corpus Christi Bay will be sensitive to the siting of the plant and its appurtenances. Environmental analyses including impingement and entrainment will need to be considered as part of the intake evaluation." *Coastal Bend Regional Water Planning Area Region N, 2021 Regional Water Plan*, pp. 5D.10-7 through 5D.10-8.

The document goes on to note that recommendations from the Texas Parks and Wildlife Department and the General Land Office may be applicable to the La Quinta intake facility, including:

> • Keeping the flow-through velocity of seawater at the intake structure below 0.5 feet per second;
> • Design intake structures to adjust or adaptively manage with varying flows and water quality;
> • Design intake structures and reduce velocity so marine organisms can escape the intake; and
> • Use exclusion devices, such as screens or booms, to exclude organisms from the intake.
> • If possible and feasible, the study suggested drawing water down through a sandy bottom to below ground piping which would prevent impingement of marine organisms and entrainment of other organisms on the intake screen.

Id. p. 5D.10-8.

Corpus Christi Bay has limited circulation, and the intake has the potential to have widespread impacts that would reach to the area of Mr. Serna's and Mr. Nye's piers and the areas in which they fish and recreate.

Again, in an abundance of caution, IOBCWA has provided as Exhibit 6 the declaration of Dr. Kristin Nielsen—an expert in aquatic biology and toxicology.[17] As explained by Dr. Nielsen in her declaration: As proposed to be designed and operated, the intake of seawater will potentially reduce the abundance and diversity of aquatic species and aquatic-dependent species in the area of the intake, including in the near vicinity Mr. Serna's property, which is only approximately 3,000 feet away from the proposed intake point.[18] Dr. Nielsen further explained that: Due to the impact of the intake upon the abundance of aquatic life, the proposed location and operation of the proposed intake would potentially adversely impact the ability of persons to successfully catch fish and to engage in successful bird-watching in the area of Mr. Serna's property. Dr. Nielsen also explained that: Due to potential impacts on habitat quality and/or alterations in the safety, abundance, and/or diversity of lower trophic level aquatic life, both the construction and operational phases of the intake may lead to adverse impacts on fish and shellfish populations in proximity to Mr. Nye's property, especially red drum, reef fish, coastal migratory pelagic fishes, and shrimp that are dependent on Essential Fish Habitats

[17] Dr.. Nielsen's resume is attached to her Declaration as Exhibit A.
[18] Exhibit 6, p. 3

within/near the Ingleside on the Bay community. Of particular importance to Dr. Nielsen's testimony that the proposed intake may impact fish, shellfish, and bird populations in the vicinity of Mr. Serna's home and the Ingleside on the Bay community, is that the dredging necessary for the type and location of intake proposed is known to resuspend environmental contaminants sequestered in buried sediments, including persistent organic pollutants and heavy metals released by industrial processes, which have the ability to enter the food web. Also of importance, is that the wedge wire screens selected for the intake design increase the potential for aquatic organisms to become impinged and are expected to increase mortality of marine life relative to other intake types.

The testimony of Dr. Nielsen establishes that the proposed water right will affect the justiciable interests of IOBCWA's members.

II. Conclusion

For the reasons stated above, IOBCWA respectfully requests that the Commission grant its hearing request and refer this case to the State Office of Administrative Hearings.

Respectfully submitted,

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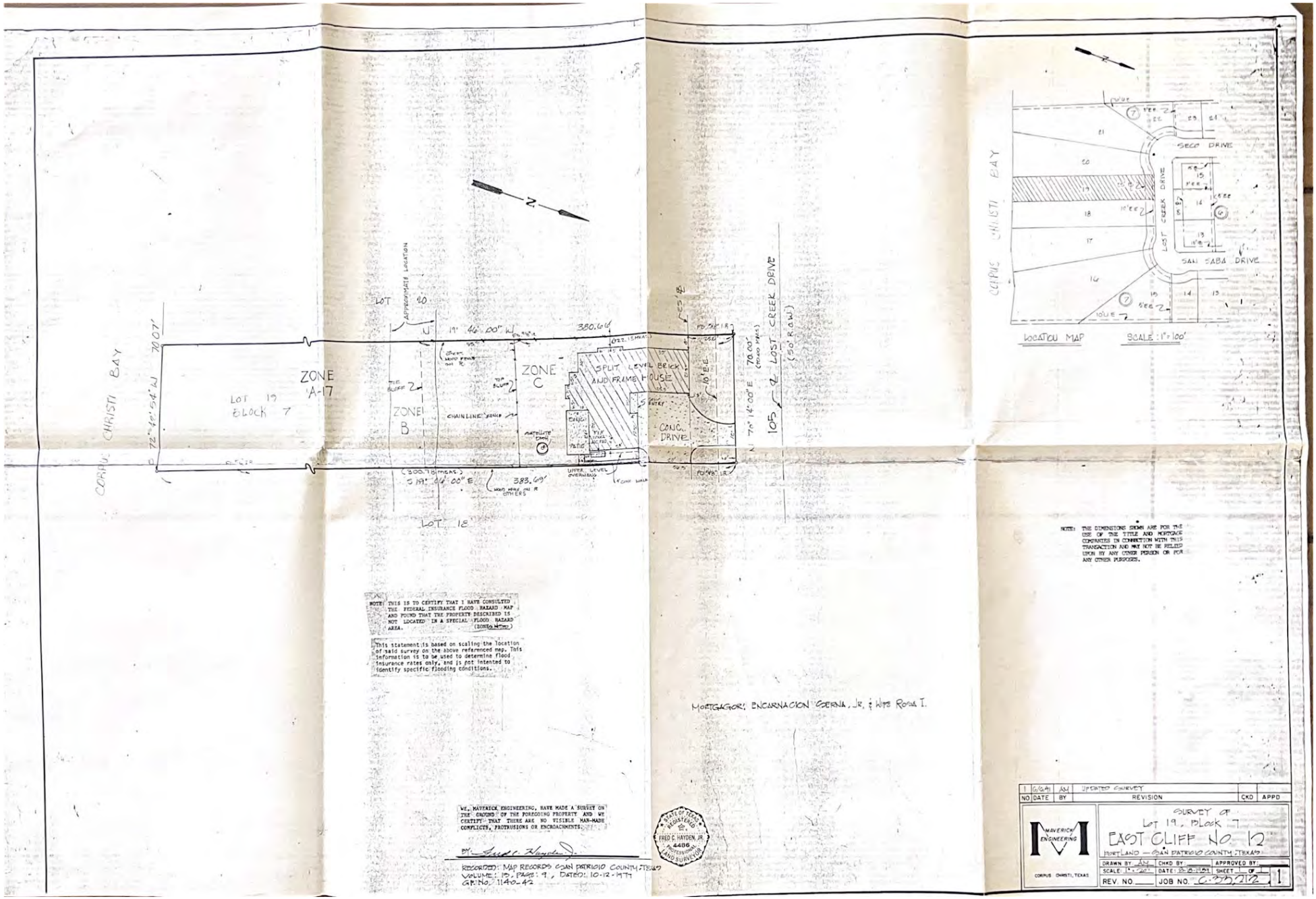
WATCH ASSOCIATION

CERTIFICATE OF SERVICE

I hereby certify that, on July 11, 2022, a true and correct copy of the Reply to Responses to Hearing Requests was electronically filed with the Chief Clerk of TCEQ, and that copies were served upon the following parties via deposit in the U.S. mail or e-mail.

/s/ Marisa Perales
Marisa Perales

EXHIBIT 1



NOTE: THIS IS TO CERTIFY THAT I HAVE CONSULTED THE FEDERAL INSURANCE FLOOD HAZARD MAP AND FOUND THAT THE PROPERTY DESCRIBED IS NOT LOCATED IN A SPECIAL FLOOD HAZARD AREA. (ZONE C MAP)

This statement is based on scaling the location of said survey on the above referenced map. This information is to be used to determine flood insurance rates only, and is not intented to identify specific flooding conditions.

NOTE: THE DIMENSIONS SHOWN ARE FOR THE USE OF THE TITLE AND MORTGAGE COMPANIES IN CONNECTION WITH THIS TRANSACTION AND MAY NOT BE RELIED UPON BY ANY OTHER PERSON OR FOR ANY OTHER PURPOSES.

MORTGAGOR: ENCARNACION GARNA, JR. & WIFE ROSA I.

WE, MAVERICK ENGINEERING, HAVE MADE A SURVEY ON THE GROUND OF THE FOREGOING PROPERTY AND WE CERTIFY THAT THERE ARE NO VISIBLE MAN-MADE CONFLICTS, PROTRUSIONS OR ENCROACHMENTS.

BY: Fred C. Hayden Jr.

STATE OF TEXAS REGISTERED FRED C. HAYDEN, JR. 4486 PROFESSIONAL LAND SURVEYOR

RECORDED: MAP RECORDS SAN PATRICIO COUNTY, TEXAS
VOLUME: 17, PAGE: 9, DATED: 10-12-1977
GP. NO. 1140-42

NO	DATE	BY	REVISION	CKD	APPD
1	6/6/91	AM	UPDATED SURVEY		

MAVERICK ENGINEERING
CORPUS CHRISTI, TEXAS

SURVEY OF
LOT 19, BLOCK 7
EAST CLIFF NO. 12
PORTLAND — SAN PATRICIO COUNTY, TEXAS

DRAWN BY: AM	CHKD BY:	APPROVED BY:
SCALE: 1" = 20'	DATE: 25-8-1981	SHEET 1 OF 1
REV. NO.	JOB NO. C-77,212	

EXHIBIT 2

Photo 1: Pier extending from Mr. Encarnacion Serna's property into the Corpus Christi Bay.

Photo 2: Pier extending from Mr. Encarnacion Serna's property into the Corpus Christi Bay.

Photo 3: End of the pier extending from Mr. Encarnacion Serna's property into the Corpus Christi Bay.

Photo 4: End of the pier extending from Mr. Encarnacion Serna's property into the Corpus Christi Bay.

EXHIBIT 3

Photo 1: Mr. Serna's family members recreating on his property and in the Corpus Christi Bay.

Photo 2: Mr. Serna's family member kayaking and fishing in the Corpus Christi Bay.

Photo 3: Mr. Serna's family member with fish caught offshore from Mr. Serna's property.

Photo 4: Mr. Serna's family members recreating on his property and in the Corpus Christi Bay.

Photo 5: Photo taken by Mr. Serna's family member kayaking and birdwatching in the Corpus Christi Bay.

Photo 6: Mr. Serna's family member recreating in the Corpus Christi Bay offshore of his property.

EXHIBIT 4

FILE NO.

452187

SPECIAL WARRANTY DEED

THE STATE OF TEXAS §
§ KNOW ALL MEN BY THESE PRESENTS:
COUNTY OF SAN PATRICIO §

THAT Paul W. Nye and wife, Nina E. Nye ("Grantor"), for and in consideration of the sum of Ten Dollars ($10.00) and other good and valuable consideration paid to Grantor by Patrick A. Nye and wife, Julie E. Nye ("Grantee"), whose address is 224 Montclair Drive, Corpus Christi, Texas 78412, the receipt of such consideration being hereby acknowledged, has GRANTED, SOLD AND CONVEYED, and by these presents does GRANT, SELL AND CONVEY, subject to the matters herein set forth, unto Grantee, all of the property located in San Patricio County, Texas (herein called the "Property") described in Exhibit "A" attached hereto and made a part hereof for all purposes.

TO HAVE AND TO HOLD the said Property, subject to the matters herein set forth, together with all and singular the rights and appurtenances thereto in anywise belonging unto Grantee and Grantee's heirs, legal representatives, successors and assigns forever; and Grantor does hereby bind Grantor and Grantor's successors, heirs and legal representatives to WARRANT AND FOREVER DEFEND all and singular said Property, subject to the matters herein set forth, unto Grantee and Grantee's heirs, legal representatives, successors and assigns, against every person whomsoever lawfully claiming or to claim the same or any part thereof, by, through, or under Grantor, but not otherwise;

GRANTEE CONFIRMS THAT GRANTEE HAS BEEN AFFORDED FULL OPPORTUNITY AND COMPLETE ACCESS TO INSPECT THE PROPERTY TO DETERMINE ITS CONDITION, APPEARANCE AND REPAIR. GRANTEE ACCEPTS THE PROPERTY **"AS IS"** AND **"WHERE IS"** AND **"WITH ALL FAULTS".** EXCEPT AS SPECIFICALLY STATED HEREIN, GRANTOR AND GRANTOR'S AGENTS HEREBY SPECIFICALLY DISCLAIM ANY WARRANTY, GUARANTY, OR REPRESENTATION, OF, AS TO, OR CONCERNING THE NATURE AND CONDITION OF THE PROPERTY, THE SUITABILITY THEREOF FOR ANY AND ALL ACTIVITIES AND USES WHICH GRANTEE MAY ELECT TO CONDUCT THEREON, THE EXISTENCE OF ANY ENVIRONMENTAL HAZARDS OR CONDITIONS THEREON OR COMPLIANCE WITH ALL APPLICABLE LAWS, RULES OR REGULATIONS. EXCEPT FOR TITLE WARRANTIES, AND THE WARRANTIES EXPRESSLY SET FORTH HEREIN, NEITHER GRANTOR NOR GRANTOR'S AGENTS MAKE ANY WARRANTY OR REPRESENTATION IN RESPECT TO THE PROPERTY, EXPRESS OR IMPLIED, OR ARISING BY OPERATION OF LAW, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTY OF CONDITION, HABITABILITY, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE.

FILE NO. 452187

This conveyance, the Property, and all of Grantor's warranties are subject to the following:

1. Taxes and assessments on the Property becoming due and payable after the date of this Deed, the payment of which is assumed by Grantee.

2. Any and all existing leases covering oil, gas or other minerals and all outstanding royalty and mineral interests in and to the oil, gas and other minerals situated in, on or under the Property, to the extent the same are valid and still in force and effect.

3. Any and all covenants, conditions, easements, reservations, rights-of-way and restrictions affecting the Property as evidenced by instruments filed in the public records of San Patricio County, Texas, to the extent the same are valid and still in force and effect.

4. All statutes, ordinances, regulations and laws of any municipality or other governmental authority having jurisdiction of the Property.

5. Rights of parties in possession, if any, and any visible and apparent easements or rights-of-way upon or affecting the Property.

6. Matters which would be revealed by a current survey of the Property.

7. The Addendums attached as Exhibit "B".

Executed effective April 19, 1989.

GRANTEE	GRANTOR
Patrick A. Nye	Paul W. Nye
Julie E. Nye	Nina E. Nye

FILE NO. 452187

EXHIBIT "A"

PROPERTY

Lot Five (5), Block One Hundred Thirty-nine A (139-A), INGLESIDE TOWNSITE, Ingleside, San Patricio County, Texas, as shown by the replat thereof recorded in Volume 6 at page 6 of the Map Records of San Patricio County, Texas, together with all fixtures, furniture, furnishings, equipment, contracts, accounts and property (as they may be more particularly defined in the Texas Uniform Commercial Code - Secured Transactions) of any kind or character as of April 19, 1989, or thereafter related to, situated on or used or acquired for use, on or in connection with the use of the Property, or any improvements now ore hereafter constructed thereon, the term "equipment" to include, but not be limited to, all furnishings, articles of personal property, building materials, supplies, machines, engines, wiring, screens, furniture, cabinets and equipment, and all littoral rights and rights which may be held in the names Paul W. Nye and wife, Nina E. Nye, in and to the bulkhead, fishing pier and permit for fishing pier.

The Southeasterly boundary of this tract follows the meanders of the shoreline of Corpus Christi Bay; and Sellers hereby release, relinquish and quitclaim unto the Buyers, their heirs and assigns, all right, title and interest of Sellers in and to all accretion and alluvion incident thereto.

EXHIBIT 5

Nye Photo 1

Nye Photo 2

Nye Photo 3

Nye Photo 4

Nye Photo 5

Nye Photo 6

Nye Photo 7

Nye Photo 8

Nye Photo 9

Nye Photo 10

EXHIBIT 6

DECLARATION OF DR. KRISTIN NIELSEN

STATE OF TEXAS §
§
COUNTY OF NUECES §

1. My name is Kristin Marie Nielsen. I am over eighteen (18) years of age and of sound mind and am otherwise competent and capable of making this declaration. The facts testified to in this declaration are within my personal knowledge and are true and correct.

2. I live at 15345 Beaufort Court, Corpus Christi, TX 78418.

3. I am currently an Assistant Professor at the University of Texas at Austin Marine Science Institute in Port Aransas, TX, where my lab researches how chemical and physical environmental stressors (separately and in combination with one another) adversely impact the health of aquatic ecosystems. Although my work incorporates levels of biological organization through the whole ecosystem level, I primarily focus on how environmental stressors impact fish development. I also have professional experience in the government and private sectors in ecological and human health risk assessment, as well as environmental public health.

4. I earned a B.A. in Biology from Texas A&M University and a Ph.D. in Aquatic Toxicology from the University of North Texas, where I also completed a postdoctoral fellowship in Aquatic Toxicology. My teaching responsibilities at the University of Texas include Marine Environmental Science, as well as a graduate level course in Aquatic Toxicology and Risk Assessment. A copy of my resume is attached as **Exhibit A** to this declaration. Exhibit A is a true and correct copy of my resume.

5. I am aware of the proposed location of the intake proposed by the Port of Corpus Christi Authority of Nueces County (the "Port") as proposed in its application for Water Right Permit No. 13630. That location is near the La Quinta Channel within Corpus Christi Bay, depicted in **Exhibit B** to this declaration.

6. The proposed location of the intake is in close proximity to a spoil island that shelters valuable seagrass habitat of a type that serves important nursery functions for many aquatic organisms, including Redfish and other estuarine-dependent species.

7. By its application for Permit No. 13630, the Port proposes a facility that would have a seawater design intake flow of 90.4 million gallons per day (MGD).

8. The intake design for the proposed facility is proposed to consist of wedgewire screen with a mesh size of ¼ inch by ¼ inch square, and a through screen velocity of less than 0.5 ft/sec.

9. As proposed to be designed and operated, the intake of seawater will potentially reduce the abundance and diversity of aquatic life and alter community structure in the area of the

intake. This may have downstream adverse effects on the abundance and diversity of aquatic-dependent species, such as certain species of birds.

10. The wedgewire screens selected for the intake design increase the potential for aquatic organisms to become impinged and are expected to increase mortality of marine life relative to other intake types.

11. To accommodate the large screens, construction of the intake will require dredging a 40,000 ft^2 area with an average depth of 10 feet, to a depth of -20 ft mean lower-low water (MLLW).

12. As depicted in **Exhibit C,** proposed dredge area surrounding the intake is in close proximity to three separate sites included in the Texas Commission on Environmental Quality's Industrial and Hazardous Waste Corrective Action Program, which oversees the cleanup of sites with soil and groundwater contamination from industrial and municipal hazardous and industrial non-hazardous waste.

13. The proposed dredge area is also near Federally designated critical habitat for the piping plover (*Charadrius melodus*), a small migratory shorebird that is protected under the Endangered Species Act of 1973. The U.S. Fish and Wildlife Service states that recovery of this species requires restoration of ecosystem functions on both breeding and wintering grounds, such as those identified in **Exhibit D**.

14. Dredging is known to resuspend environmental contaminants sequestered in buried sediments, including persistent organic pollutants and heavy metals released by industrial processes. A wide range of industrial contaminants are known to accumulate in sediments, subsequently entering the food web. Bioaccumulation and biomagnification of resuspended industrial contaminants may lead to adverse effects on the health of ecological receptors, including aquatic life (e.g., fish, shellfish) and aquatic-dependent organisms (e.g., waterfowl, wading birds).

15. For example, I reviewed sediment and water samples taken in the La Quinta Channel by USACE in 2000 related to proposed dredging activities. At that time, samples were only tested for 21 possible contaminants. Of those 21 contaminants, 10 samples either exceeded EPA's ecological screening values (ESVs), the method detection limit was not sufficiently sensitive to allow for a confident determination of risk relative to current ESVs, or no ESV was available for the contaminant of interest, as depicted in **Exhibit E**. Per EPA Ecological Risk Assessment Guidance, potential risk cannot be eliminated for contaminants of potential ecological concern on the basis of missing ESVs without further toxicological evaluation.

16. Contaminants like those found in the 2000 sediment samples can be the result of contamination from nearby industrial operations along the coastline that makes its way into the channel. Large storm events and dredging operations have the ability remobilize such

contaminants and increase their bioavailability to aquatic and aquatic-dependent organisms.

17. Given that this sampling was done prior to the Deepwater Horizon oil spill, and the area has undergone additional industrial development since 2000, it is reasonable to suggest that contaminant burdens in sediments may have increased relative to those measured in the 2000 sampling event. In order to confidently evaluate potential risk to ecological receptors in the area related to remobilization of sequestered contaminants due to dredging, samples should be analyzed for a broader suite of industrial contaminants.

18. Many species of waterfowl, including the piping plover, forage for invertebrates in sediments. Thus, remobilization of sequestered contamination via dredging may adversely impact the safety and availability of food in surrounding habitats.

19. I am aware that Mr. Encarnacion Serna owns property, which is on the shoreline approximately 3,000 feet away from the proposed intake point, as depicted in **Exhibit F** to this declaration.

20. The impacts of both the construction and operation phases of the intake may adversely affect the safety, diversity and abundance of aquatic and aquatic-dependent species in the vicinity of property owned by Mr. Encarnacion Serna.

21. Due to potential impacts on habitat quality and/or alterations in the safety, abundance, and/or diversity of lower trophic level aquatic life, both the construction and operational phases of the intake may lead to adverse impacts on fish and shellfish populations in the area of Mr. Serna's property.

22. Due to the impact of the intake upon the abundance of aquatic-dependent wildlife, such as birds, the proposed location and operation of the proposed intake would potentially adversely impact the ability of persons to engage in successful bird watching in the area of Mr. Serna's property, including the Federally protected piping plover.

23. I am aware that Mr. Patrick Nye owns property, which is on the shoreline in the community of Ingleside on the Bay, as depicted in Exhibit E to this declaration.

24. As depicted in **Exhibit D**, the National Oceanic and Atmospheric Administration (NOAA) Fisheries and the Gulf of Mexico Fishery Management Council have designated several areas within/near the Ingleside on the Bay community as Essential Fish Habitat (EFH) under Section 303(a)(7) of the Magnuson-Stevens Fishery Conservation and Management Act. EFH in proximity to the community of Ingleside on the Bay has been specifically identified for the protection of red drum, reef fish, coastal migratory pelagic fishes, and shrimp.

25. The potential impacts of the construction and/or operational phases of the intake may include impacts upon the diversity and abundance of aquatic and aquatic-dependent species in the vicinity of property owned by Mr. Patrick Nye.

26. Due to potential impacts on habitat quality and/or alterations in the safety, abundance, and/or diversity of lower trophic level aquatic life, both the construction and operational phases of the intake may lead to adverse impacts on fish and shellfish populations in proximity to Mr. Nye's property, especially red drum, reef fish, coastal migratory pelagic fishes, and shrimp that are dependent on nearby EFH.

27. Due to the impact of the intake upon the abundance of aquatic-dependent wildlife, such as birds, the proposed location and operation of the intake would potentially adversely impact the ability of persons to engage in successful bird watching near Mr. Nye's property.

My name is Kristin Marie Nielsen, my date of birth is January 29th, 1984, and my address is 15345 Beaufort Court, Corpus Christi, TX 78418, United States.

I declare under penalty of perjury that the foregoing is true and correct.

Executed in Nueces County, State of Texas, on the 11th day of July 2022.

_____

Kristin Nielsen

EXHIBIT A

to Declaration of Dr. Kristin Nielsen

Kristin Nielsen, Ph.D.

Department of Marine Science, University of Texas at Austin

750 Channel View Dr.
Port Aransas, TX 78373
907.538.1720
kristin.nielsen@austin.utexas.edu

EDUCATION

2018 Postdoctoral Research Fellowship in Aquatic Toxicology, University of North Texas, Denton, TX

2016 Ph.D. in Aquatic Toxicology, University of North Texas, Denton, TX

Dissertation Topic: Maternal transfer of dietary methylmercury and implications for embryotoxicity in *Pimephales promelas*

2005 B.A. in Biology, English, Texas A&M University, College Station, TX

PROFESSIONAL EXPERIENCE

2020 – Present Assistant Professor; The University of Texas at Austin Marine Science Institute; Port Aransas, TX

Current Research: Dr. Nielsen is an aquatic toxicologist who uses a systems approach to investigate the developmental and reproductive toxicity of ubiquitous environmental contaminants to both freshwater and marine organisms. She is particularly interested in linking contaminant-mediated molecular initiating events to higher level adverse effects in fish models, from both an ecotoxicological and translational perspective. She has specific expertise in the toxicological effects of per- and polyfluoroalkyl substances (PFAS), heavy metals, select pharmaceuticals and their degradation products, as well as the photo-induced toxicity of oil spills to early life stage aquatic organisms. Dr. Nielsen also builds on her experience as a professional ecological and human health risk assessor in a research context, specifically as it pertains to subsistence fishing resources. As part of this work, Dr. Nielsen develops novel, multiple-lines-of-evidence risk assessment frameworks that consider the role of understudied qualitative determinants of risk (e.g., socio-economic, demographic, traditional, and location-specific environmental factors).

Advising:

Kerri Ackerly, Postdoctoral Fellow

Tamara Rivera, PhD Student (Co-Advised by Dr. Simon Brandl)

Rachel Roday, PhD Student

Kathleen Roark, PhD Student

Lily DeCamp, Undergraduate Student

Mona Birgisson, Undergraduate Student

Teaching:

MNS 354Q. Marine Environmental Science

MNS 193. Aquatic Toxicology and Risk Assessment

2019 – 2020 *Ecological and Human Health Risk Assessor and Toxicologist; Geosyntec Consultants; Anchorage, AK*

2018 – 2019 *State Toxicologist & Environmental Public Health Program Manager, Alaska Division of Public Health; Anchorage, AK*

2016 – 2018 Postdoctoral Research Fellow & Adjunct Faculty; University of North Texas; Denton, TX

Postdoctoral Research Topics:

Photo-induced toxicity of Gulf of Mexico oil to early life stage marine biota

Developmental toxicity of pharmaceutical compounds to non-target aquatic vertebrates

Courses Taught:

BIOL 4380. Fundamentals of Aquatic Toxicology

2008 – 2012 Department Chair and Science Teacher; Grand Prairie Independent School District; Grand Prairie, TX.

Courses Taught: Pre-AP Biology, Chemistry, Integrated Physics and Chemistry

2006 – 2008 Science Teacher and Coach; Pearsall Independent School District; Pearsall, TX.

Courses Taught: Biology, Chemistry, and Geology, Meteorology, and Oceanography

FUNDING

Current National Academies of Sciences, Engineering and Medicine (NASEM), Gulf Research Program Early-Career Research Fellowship (PI), $76,000; 2022 - 2024

Matagorda Bay Mitigation Trust. Assessing the threat of tire leachate and urban runoff on Matagorda Bay fish populations (PI) $399,965; 2022 – 2025.

Stengl-Weyer Endowment, Danger Downstream? Investigating indirect mechanisms of urban runoff toxicity using a whole ecosystem approach (PI) $87,598; 2021-2022

Completed Health Canada, Chemical Management Plan to Investigate Metformin Environmental Fate and Effects (Co-PI) $148,000; 2019 - 2021

Centers for Disease Control & Prevention (CDC), ATSDR Partnership to Promote Local Efforts to Reduce Environmental Exposure (PI) $404,467; 2018 – 2019

CDC, Childhood Lead Poisoning Prevention (PI) $263,278; 2018 - 2019

Pending Prince William Sound Regional Advisory Council Toxicity of Oxygenated Polycyclic Aromatic Hydrocarbons in Treated Ballast Water Effluent to Calanoid Copepods: Implications for Food Webs in PWS, Alaska (PI) $166,747; 2022-2024.

National Science Foundation Postdoctoral Research Fellowship in Biology – Competitive Area 2. Integrative Research Investigating the Rules of Life Governing Interactions Between Genomes, Environment and Phenotypes (Primary Sponsor)

In Preparation National Science Foundation, Climate-related changes to fish communities: Engaging Alaskan Native communities to identify impacts to food safety and security (PI), approximately $1, 000,000; 2023 – 2026.

HONORS, MEMBERSHIPS & AWARDS

NASEM Early Career Fellow (2022)

University of Texas at Austin, College of Pharmacy, Center for Molecular Carcinogenesis & Toxicology Invited Member (2022 – present)

Alaska Pacific University Affiliate Faculty (2019 - 2022)

SETAC Presidential Citation Award Recipient (2018)

Department of Biological Sciences Outstanding Teaching Award, University of North Texas, Denton, TX (2015)

Beth Baird Scholarship, University of North Texas, Denton, TX (2014 -2016)

SERVICE TO THE FIELD

Department

PhD Committee – Xiangtao Jiang (Current)
PhD Committee – Kathryn Appler (Current)
Analytical Core Committee, Department of Marine Science, University of Texas at Austin (2020 – Present)
Graduate Record Examination Waiver Committee, Department of Marine Science, University of Texas at Austin (2021 – 2022)
Marine Science Institute Director and Department of Marine Science Chair Search Committee, College of Natural Science, University of Texas at Austin (2021 - 2022)

Scientific Community

Board and Committee Positions

Secretary, South Central Regional SETAC (2022 – Present)
Executive Board, South Central Regional SETAC (2021 – Present)
Development Committee, SETAC North America (2018-2020)
Early Career Committee (ECC), SETAC North America (2018 – 2020)
ECC Outreach & Media Sub-Committee Chair, SETAC North America (2018 – 2020)
Environmental Public Health Program Development Committee, Alaska Pacific University (2018 – 2019)

Conference Chair Positions

Session Chair, SETAC North America 39th Annual Meeting, Sacramento, CA (2018)
Session Chair, SETAC North America 36th Annual Meeting, Salt Lake City, UT (2015)

Conference Planning Committees

National Academies and Alaska Sea Grant Oil Spill Science and Disaster Preparedness Workshop Steering Committee, Anchorage, AK (2019)
SETAC North America Early Career Scientist Social Planning Committee, Sacramento, CA (2018)

Journal, Conference, and Book Reviewing

Environmental Science & Technology
Environmental Science & Technology Letters
Environmental Toxicology & Chemistry
ACS Omega
Ecotoxicology
Aquatic Toxicology
Environmental Pollution
Journal of Hazardous Materials
Comparative Biochemistry and Physiology

Grant Proposal Reviewing

NIH/NIEHS P42 Superfund Hazardous Substance Research and Training Program (2021)
NSF Major Research Instrumentation Program (2021)

PUBLICATIONS

Nielsen, K; DeCamp, L; Birgisson, M; Palace, V; Kidd, K; Parrott, J; McMaster, M; Ussery, E. (Accepted) Comparative effects of embryonic metformin exposure on wild, and laboratory-spawned fathead minnow (*Pimephales promelas*) populations. Environmental Science & Technology.

Ackerly, K; Roark, K; **Nielsen, K** (Accepted) Short term salinity stress during early development impacts the growth and survival of red drum (*Sciaenops ocellatus*). Estuaries & Coasts.

Ussery, E; **Nielsen, K**; Simmons, D; Pandelides, Z; Mansfield, C; Holdway, D. (2021) An ‘omics approach to

investigate the growth effects of environmentally relevant concentrations of guanylurea exposure on Japanese medaka *(Oryzias latipes)*, Aquatic Toxicology, 232, 105761

Nielsen, K (2021). Proposed Harbor Island Seawater Reverse Osmosis Desalination Facility. University of Texas at Austin, Austin, TX. Marine Science Institute Technical Reports https://repositories.lib.utexas.edu/handle/2152/85059

Nielsen, K; Furin C; Gerlach B. (2020). Subsistence fish consumption in rural Alaska: Using regional monitoring data to evaluate risk and bioavailability of dietary methylmercury. Science of the Total Environment. 139676.

Nielsen, K; Alloy MM; Damaré LM; Palmer I; Forth HP; Morris JM; Stoeckel J; Roberts, AP (2020). Planktonic fiddler crab *(Uca longisignalis)* are susceptible to photo-induced toxicity following developmental exposure to oiled terrestrial habitat. Environmental Science & Technology: 54 (10), 6254-6261.

Nielsen, K; Curran TE; Magnuson JT; Barker A; Baxter D; Venables BJ (2019). Alterations to the vision-associated transcriptome of zebrafish *(Danio rerio)* following developmental norethindrone exposure. Environmental Toxicology & Pharmacology: 69, 137-142.

Ussery EJ; **Nielsen, K**; Pandelides Z; Kirkwood AE; Bonetta D; Guchardi J; Holdway D (2019). Developmental and full life-cycle exposures to guanylurea, and guanylurea-metformin mixtures causes adverse effects in Japanese medaka *(Oryzias latipes).* Environmental Toxicology & Chemistry: 38(5), 1023-1028.

Nielsen, K. (2019) Letter Health Consult: PFAS Exposure Assessment, Pioneer Farm and Alaskan Farm, North Pole, Alaska; State of Alaska Department of Health and Social Services, Anchorage, AK. 2019.

Ussery EJ; **Nielsen, K**; Pandelides Z; Kirkwood AE; Bonetta D; Guchardi J; Holdway D (2018). Developmental effects of metformin on early life stages of Japanese medaka *(Oryzias latipes).* Aquatic Toxicology: 205: 58-65.

Nielsen, K; Krasnec M; Magnuson JT; Morris JM; Gielazyn ML; Chavez R; Roberts AP. (2018) Influence of UV and PAH exposure duration on survival of red drum *(Sciaenops ocellatus)* larvae. Environmental Toxicology & Chemistry: 37(9), 2372- 2379.

Nielsen, K; Zhang Y; Curran TE; Magnuson JT; Venables BJ; Durrer, KE, Allen M; Roberts AP. (2018). Alterations to the intestinal microbiome and metabolome *of Pimephales promelas* and *Mus musculus* following exposure to dietary methylmercury. Environmental Science & Technology: 52(15), 8774-8784.

Nielsen, K; Lay CR; Alloy MM; Gielazyn ML; Morris JM; Forth HP; Takeshita R; Travers C; Oris JT; Roberts AP (2018). Estimating incident ultraviolet (UV) radiation exposure in the Northern Gulf of Mexico during the Deepwater Horizon Oil Spill. Environmental Toxicology & Chemistry: 37(6), 1679-1687.

Damaré LM; **Nielsen, K**; Forth HP; Lay CR; Morris JM; Stoeckel J; Curran TE; Soulen BK; Alloy MM; Roberts AP (2018). Photo- induced toxicity in early lifestage fiddler crab *(Uca longisignalis)* following exposure to Deepwater Horizon spill oil. Ecotoxicology: 27(4), 440-447.

Nielsen, K., Venables, B. and Roberts, A. (2017), Effects of dietary methylmercury on the dopaminergic system of adult fathead minnows and their offspring. Environmental Toxicology & Chemistry, 36: 1077-1084.

Alloy MM; Garner TG; **Nielsen, K**; Mansfield CM; Carney M; Forth HP; Krasnec M; Lay CR; Takeshita R; Morris JM; Oris JT; Roberts AP (2017). Co-exposure to sunlight enhances the toxicity of naturally weathered Deepwater Horizon oil to early lifestage red drum *(Sciaenops ocellatus)* and speckled seatrout *(Cynoscion nebulosus).* Environmental Toxicology & Chemistry: 36(3), 780-785.

Nielsen, K; Soulen B; Overturf C; Drevnick P; Roberts A (2016). Embryotoxicity of maternally transferred methylmercury to *Pimephales promelas.* Environmental Toxicology & Chemistry: 35(6), 1436-41.

Lay CR; Morris JM; Takeshita R; Forth HP; Travers CL; Roberts AP; Alloy MM; Garner TR; **Nielsen, K** (2015) Incident Ultraviolet (UV) Radiation and Extinction Coefficients in the Northern Gulf of Mexico During the Deepwater Horizon Oil Spill. (TOX_TR.06). Boulder, CO. DWH Toxicity NRDA Technical Working Group Report. https://www.doi.gov/deepwaterhorizon/adminrecord

Barst BD; **Nielsen, K**; Korbas M; Roberts AP; Van Kirk K; McNeel K; Drevnick PE (2015). The role of melano-macrophage aggregates in the storage of mercury and other metals: An example from yelloweye rockfish *(Sebastes ruberrimus).* Environmental Toxicology & Chemistry: 34(8), 1918-1925.

Additional Publications in Preparation

Khursigara, A. J., Roark, K., Soulen, B. K., Condini, M. V., **Nielsen, K**., Garcia, A., Hoeinghaus, D.; Roberts, AP (In Preparation) Dusky grouper (*Epinephelus marginatus*) mercury concentrations along the Southern Brazilian coast. Anticipated submission: February 2022.

Ussery, E**; Nielsen, K**; Blandford, N; Parrott, J; Kidd, K; Palace, V; McMaster, M; Birceanu, O; Wilson, J (In preparation) Effects of experimentally added metformin on the aquatic food web in a boreal lake aquatic environment via in-lake mesocosm exposure. Anticipated submission: February 2022.

Blandford, N; Parrott, J; Kidd, K; Palace, V; McMaster, M; Sumarah, M; Renaud, J; Alaee, M; **Nielsen, K**; Ussery, E (In Preparation). Fate and remediation of experimentally added metformin in a boreal lake ecosystem via in-lake mesocosm exposure. Anticipated submission: February 2022.

Nichols, C., Khursigara, A; Garner, TR; Alloy, MM; **Nielsen, K**; Soulen, BK; Gnau, JL; Wormington, AM; Sweet, LE; Morris, JM; Roberts, AP. (Submitted) Factors Affecting Photo-Induced Toxicity in Mysid Shrimp (*Americamysis bahia*) Exposed to Weathered Crude Oil and Ultraviolet Radiation. Anticipated Submission: March 2022

Alloy, MM; Garner, TR; Khursigara, AJ; Nichols, CLD; O'Shaughnessy, KA; **Nielsen, K**., Van Aken, M., Chesney, EJ; Roberts, AP. (In Preparation) Photo-induced toxicity of crude oil to bay anchovy (*Anchoa mitchilli*) and red snapper (*Lutjanus campechanus*). Anticipated Submission: March 2022

SELECT PRESENTATIONS

Conference Presentations (Presenting author platforms only; * denotes invited talks)

SETAC North America (2021; Virtual) Metformin exposure impacts development of wild-spawned embryo-larval fish. *

Assessing the Ecological Risks of Per-and Polyfluoroalkyl Substances (PFAS) at Aqueous Film Forming Foam Sites (2020; Westminster, CO) Emerging Contaminants Summit.

PFAS Toxicology and Risk Assessment: State of the Science (2020; Virtual) Geosyntec Global PFAS Technical Webinar.

SETAC North America, 40th Annual Meeting (2019; Toronto; Ontario; Canada) Subsistence Fish Consumption in Alaska: Using Regional Monitoring Data to Evaluate Risk and Bioavailability of Dietary Methylmercury. *

SETAC North America, 39th Annual Meeting (2018; Sacramento, CA) Alterations to the intestinal microbiome and metabolome of Pimephales promelas and Mus musculus following exposure to dietary methylmercury. *

SETAC Europe, 28th Annual Meeting (2018; Rome, Italy) Photoperiod, exposure duration, and latent mortality: Photo-induced toxicity effects in aquatic organisms.

SETAC Europe, 28th Annual Meeting (2018; Rome, Italy) Alterations to the intestinal microbiome and metabolome of Pimephales promelas and Mus musculus following exposure to dietary methylmercury.

Gulf of Mexico Oil Spill and Ecosystem Science Conference (2018; New Orleans; LA) Photoperiod, exposure duration, and latent mortality: Photo-induced toxicity effects in aquatic organisms.

SETAC North America 38th Annual Meeting (2017; Minneapolis, MN) Photoperiod, exposure duration, and latent mortality: Photo-induced toxicity effects in aquatic organisms.

International Conference on Environmental Pollution, Restoration, and Management (2017; Quy Nhon, Vietnam) The photo-induced toxicity of Australian northwest shelf crude oil to yellowtail kingfish (Seriola lalandi) and black bream (Acanthopagrus butcheri).

International Conference on Environmental Pollution, Restoration, and Management (2017; Quy Nhon, Vietnam) Effects of dietary methylmercury on the dopaminergic system in adult fathead minnows and their offspring.

SETAC North America 37th Annual Meeting (2016, Orlando, FL) Effects of dietary methylmercury on the dopaminergic system in adult fathead minnows and their offspring.

SETAC North America 36th Annual Meeting (2015; Salt Lake City, UT) Embryo-toxicity of maternally transferred methylmercury to fathead minnows (Pimephales promelas).

SETAC South Central Regional Meeting (2014; San Marcos, Texas) Effects of maternally derived methylmercury on

fathead minnow (Pimephales promelas) reproductive metrics and embryonic development.

SETAC North America 34th Annual Meeting (2013; Nashville, TN) Effects of maternally derived methylmercury on fathead minnow (*Pimephales promelas*) reproductive metrics and embryonic development.

Invited Institutional Seminars

University of Texas at Austin, College of Pharmacy (2022; Austin, TX)

University of Alaska Fairbanks, Water and Environmental Research Center (2021; Virtual) Potential ecological and human health risks of PFAS contamination in Alaska.

Alaska Pacific University, Environmental Public Health Program (2020; Anchorage, AK) The Role of Toxicology and Risk Assessment in Environmental Public Health Practice.

University of Georgia, College of Forestry (2020; Athens, GA) Ecotoxicological Effects of Developmental Exposure to Ubiquitous Aquatic Contaminants Across Levels of Biological Organization.

University of North Carolina at Wilmington, Center for Marine Science (2020; Wilmington, NC) Ecotoxicological Effects of Developmental Exposure to Ubiquitous Aquatic Contaminants Across Levels of Biological Organization.

Alaska Pacific University, Environmental Public Health Program (2019; Anchorage, AK) Toxicology and Risk Assessment: Alaska Edition.

University of Alaska Southeast, Department of Biology and Marine Biology (2019; Juneau, AK) Photo-induced Toxicity of Oil Spills to Early Life Stage Marine Biota.

Alaska Pacific University, Environmental Health Program (2019; Anchorage, AK) Risk Assessment and Communication in Environmental Justice Communities in Rural Alaska.

Marshall University, Department of Biological Sciences (2017; Huntington, WV). Effects of maternally transferred methylmercury on development of early life stage fish.

Invited Public Seminars and Select Media Appearances

UTMSI Science Festival Public Lecture Series (2021; Virtual) Examining Risks in Perspective: Subsistence Fishing.

Alaska Tribal Consortium on Environmental Management (2019; Anchorage, Alaska) An Overview of PFAS Concerns for Communities in Rural Alaska.

Alaska Public Media: Talk of Alaska Radio Interview (2019; Anchorage, AK). PFAS contamination in Alaska.

Alaska Public Media: Alaska Insight TV Interview (2019; Anchorage, AK. How Dangerous are PFAS Chemicals and What's Being Done to Clean Them Up?

Alaska Department of Health and Social Services, Section of Public Health Nursing (2019; Anchorage, AK) PFAS & Public Health for Nurses.

Dillingham Public Meeting (2019; Dillingham, AK) Public Health Concerns related to PFAS Exposures.

Utqiagvik Public Meeting (2019; Utquiagvik, AK) Public Health Concerns related to PFAS Exposures

Gustavus Public Meeting (2018; Gustavus, AK) Public Health Concerns related to PFAS Exposures.

EXHIBIT B

to Declaration of Dr. Kristin Nielsen

PORT CORPUS CHRISTI

wood.

Property Boundary

DredgeBox

Intake Route

N

0 500 1,000

Feet

Intake Structures for Proposed Desalination Plant

La Quinta Terminal

DATE	MAY 2019
SCALE	1" = 833'
PROJECT NO.	6703180030
FIGURE	Attachment 3 - Map

EXHIBIT C

to Declaration of Dr. Kristin Nielsen

A)

B)

C)

Exhibit C. Stars denote sites that are included in the Texas Commission on Environmental Quality (TCEQ) Industrial Hazardous Waste Corrective Action (IHWCA) program. TCEQ states that the goal of the IHWCA program is to cleanup of sites with soil and groundwater contamination from industrial and municipal hazardous and industrial non-hazardous waste to protect human health and the environment. As seen in the figure above, the area to be dredged (to accommodate the construction of large intake screens) is less than 2 miles from the approximate boundaries of three separate IHWCA sites, including a steel production facility (A) and B) an aluminum refinery (B and C).

EXHIBIT D

to Declaration of Dr. Kristin Nielsen

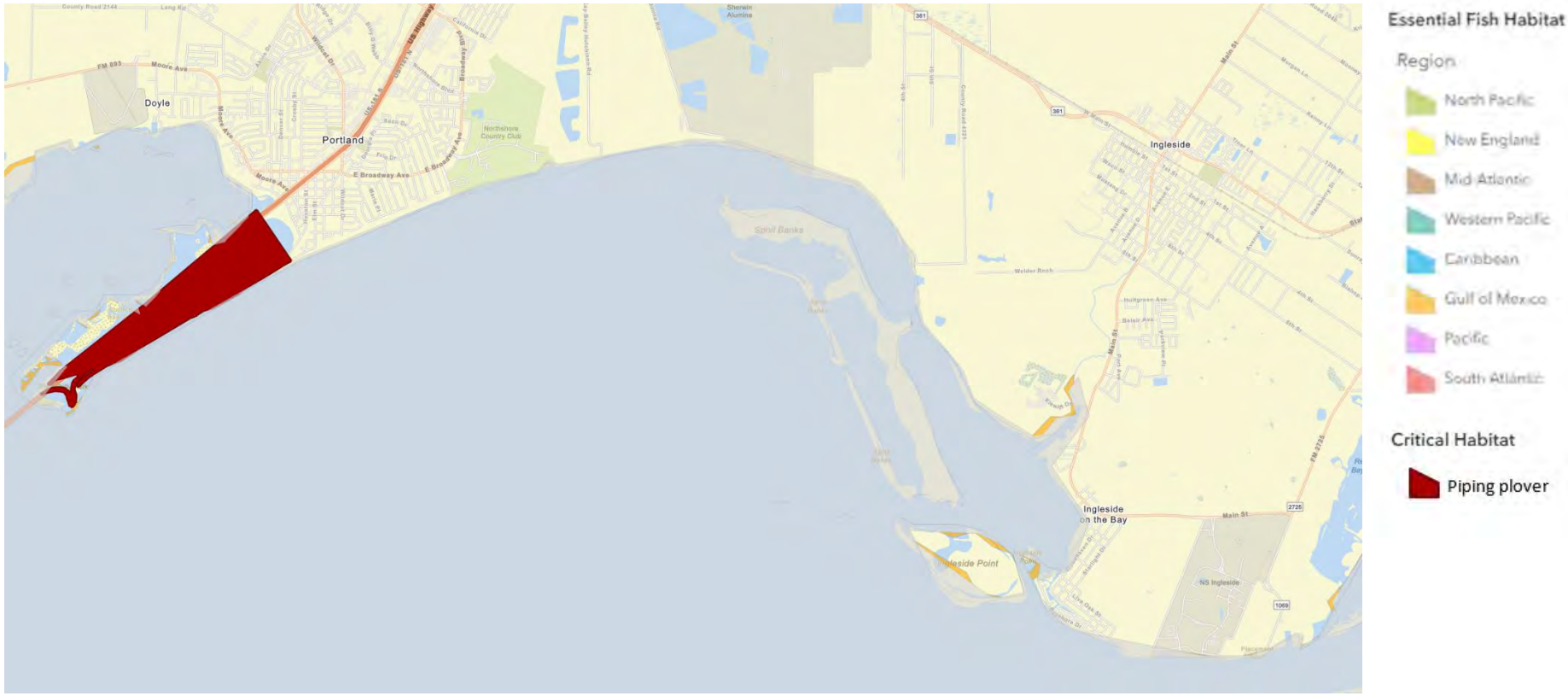


Exhibit D. Orange shading identifies areas where NOAA Fisheries and the Gulf of Mexico Fishery Management Council have used the Essential Fish Habitat (EFH) provisions established in Section 303(a)(7) of the Magnuson-Stevens Fishery Conservation and Management Act. The Act prevents, mitigates, or minimize adverse effects from fishing on EFH. For the areas identified in the map above, these provisions have been enacted for the protection of red drum, reef fish, coastal migratory pelagic fishes, and shrimp. The red shaded area identifies Federally designated critical habitat for the piping plover *(Charadrius melodus)*, a small migratory shorebird that is protected under the under the Endangered Species Act of 1973. The U.S. Fish and Wildlife Service states that recovery of this species requires restoration of ecosystem functions on both breeding and wintering grounds, such as those identified here. As this species forages for invertebrates in sediments, remobilization of sequestered contamination from dredging may adversely impact the safety and availability of food in the area.

EXHIBIT E

to Declaration of Dr. Kristin Nielsen

Parameter	Medium	Station	Year	Concentration in La Quinta Channel (ug/kg or ug/L)	Ecological Screening Value (ESV)	Conclusion
Acenaphthene	Sediment	CC-L-00-01	2000	<20.0	6.7	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
Barium	Sediment	CC-L-00-04	2000	3.73	-	No ESV available. Per US EPA Ecological Risk Assessment Guidance, risk related to contaminants of potential ecological concerns should not be ruled out on the basis of no ESV.
Benzo(e)pyrene	Sediment	CC-L-00-06	2000	<20.0	-	No ESV available. Per US EPA Ecological Risk Assessment Guidance, risk related to contaminants of potential ecological concerns should not be ruled out on the basis of no ESV.
Chlordane	Sediment	CC-L-00-01	2000	<10.0	2.7	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
DDT	Sediment	CC-L-00-06	2000	<10.0	0.7	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
Fluoranthene	Sediment	CC-L-00-01	2000	<20.0	-	No ESV available. Per US EPA Ecological Risk Assessment Guidance, risk related to contaminants of potential ecological concerns should not be ruled out on the basis of no ESV.
Selenium	Sediment	CC-L-00-06	2000	<0.20	-	No ESV available. Per US EPA Ecological Risk Assessment Guidance, risk related to contaminants of potential ecological concerns should not be ruled out on the basis of no ESV.
Toxaphene	Sediment	CC-L-00-06	2000	<50.0	0.15	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
Barium	Seawater	CC-L-00-04	2000	58.9	4	Value exceeds ESV.
Benzo(a)pyrene	Seawater	CC-L-00-06	2000	<0.50	0.02	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
Benzo(e)pyrene	Seawater	CC-L-00-01	2000	<0.50	-	No ESV available. Per US EPA Ecological Risk Assessment Guidance, risk related to contaminants of potential ecological concerns should not be ruled out on the basis of no ESV.

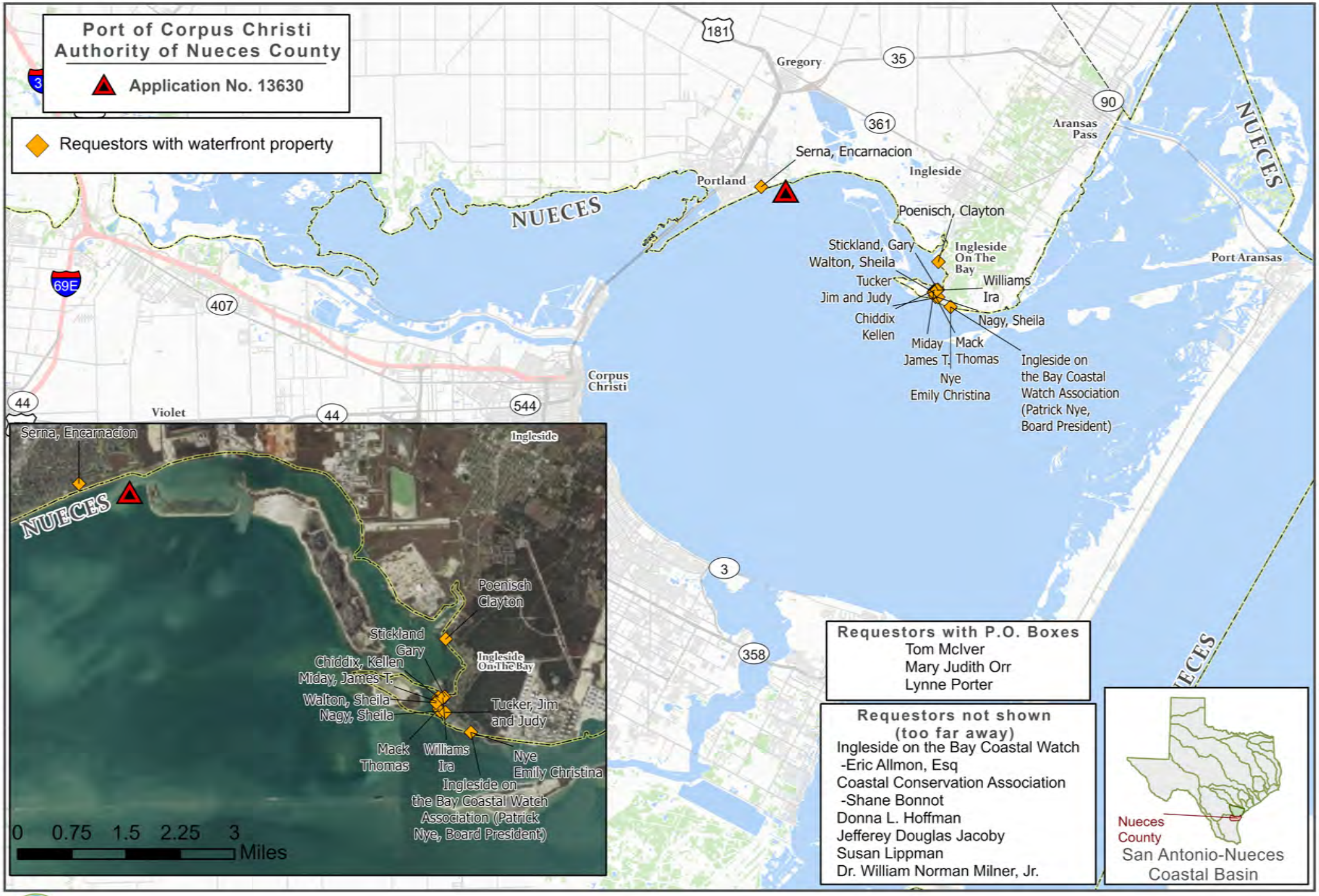
Chlordane	Seawater	CC-L-00-01	2000	<0.14	0.004	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
DDT	Seawater	CC-L-00-06	2000	<0.10	0.01	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
Fluoranthene	Seawater	CC-L-00-06	2000	<0.50	-	No ESV available. Per US EPA Ecological Risk Assessment Guidance, risk related to contaminants of potential ecological concerns should not be ruled out on the basis of no ESV.
Naphthalene	Seawater	CC-L-00-01	2000	<2.00	1.4	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
Silver	Seawater	CC-L-00-01	2000	<1.00	0.1	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
Toxaphene	Seawater	CC-L-00-06	2000	<0.50	0.0002	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.
tPAH	Seawater	CC-L-00-06	2000	<5.00	0.43	Method detection limit exceeds current ESV. Risk to aquatic or aquatic dependent receptors in the area cannot be ruled out without further evalation.

EXHIBIT F

to Declaration of Dr. Kristin Nielsen

DOCKET No. 2022-0421-WR

Port of Corpus Christi Authority of Nueces County, Application No.13630



This map was generated by the Water Availability Division of the Texas Commission on Environmental Quality. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact the Water Availability Division at (512)239-4600.