September 23, 2025

COL Brad Morgan

District Engineer

USACE Wilmington District

69 Darlington Ave

Wilmington, NC  28403

Subject:  Comments regarding the Draft Wilmington Harbor 403 Letter Report & Draft Environmental Impact Statement (EIS) – PFAS Contamination of Dredged Spoils

Dear COL Morgan

As we all know, when analyzing the potential effects of this proposed project and assessing its economic benefits, it is also crucial to consider the social, cultural, and environmental well-being of the community. NEPA requires that USACE consider all relevant impacts, both primary and secondary, on the citizens who live and work in the area. The decision made by the USACE regarding this proposed project will significantly impact the physical and environmental character of our community for generations to come.

From 1980 to 2017, Chemours (and its predecessor, DuPont) released large amounts of PFAS compounds, including GenX, into the Cape Fear River from the Fayetteville Works facility, heavily contaminating about 100 miles of the river and its surrounding environment, including the river sediments within the congressionally authorized navigation channel. This contamination also affects the primary drinking water source for many downstream communities. This pollution is crucial for the USACE evaluators to consider as part of the EIS, as it has a widespread impact on the Port’s project under review. I will explain why later in this comment.

As a further complicating factor, it is also important to note that the Reverse Osmosis (RO) Water Treatment Plant, currently under construction in Brunswick County, is nearing completion and is expected to commence operations soon. This facility will use a low-pressure RO process with a capacity of 45 to 60 million gallons per day, specifically designed to remove per- and polyfluoroalkyl substances (PFAS) that are currently contaminating the drinking water supply. The National Pollutant Discharge Elimination System (NPDES) permit number authorizing this discharge is NC0057533. Once operational, the RO plant will be capable of discharging up to five million gallons per day of highly concentrated wastewater containing PFAS and other contaminants, including 1,4-dioxane.

The pipeline designated for the discharge of this highly concentrated wastewater into the Cape Fear River is situated approximately three miles upstream of the Port of Wilmington. Based on my preliminary assessments, the volume of concentrated PFAS waste being discharged is expected to significantly exceed the current public health standards established by the Environmental Protection Agency (EPA).

This discharge of PFAS-contaminated wastewater poses significant challenges for individuals, communities, and ecosystems that rely on the vital natural resources of the Cape Fear River. It is well known that PFAS can accumulate in fish and other seafood, posing risks to human health and the environment. The effects of PFAS on marine fisheries can appear in various ways, including:

·         **Bioaccumulation:** PFAS can contaminate surface water, leading to bioaccumulation and biomagnification in aquatic organisms, particularly fish.

·         **Exposure Routes:** The primary route of exposure for individuals to PFAS occurs through dietary intake, primarily through the consumption of fish and other seafood.

·         **Vulnerable Populations:** Certain populations, particularly African-American communities that engage in subsistence fishing along the Cape Fear River, face heightened vulnerability to PFAS exposure due to their reliance on traditional diets that include fish and marine mammals. Individuals and communities that rely on locally sourced fish may be exposed to significantly elevated levels of PFAS, which are industrial pollutants associated with various adverse health effects.

·         **Beach Activities:** PFAS, including GenX chemicals, have already been found in the foam at our Brunswick County beaches, originating from the Chemours Fayetteville Plant.

·         **Anglers:** Recreational anglers who consume wild-caught fish may exhibit higher levels of PFAS exposure than the general population.

·         **Shellfish:** Shellfish, including crabs, may be particularly susceptible to PFAS accumulation as they inhabit and feed on the seafloor, which is in proximity to PFAS sources.

·         **Larger Species:** Larger marine species can ingest PFAS by consuming smaller species that have already accumulated these substances in their systems.

·         **Fish Fitness:**Research has indicated a correlation between PFAS exposure and decreased fitness in fish populations.

This highly concentrated RO waste stream of PFAS pollutants will settle within the entire dredged area of the Cape Fear River, which is a component of either regular dredging maintenance or the potential deepening and widening of the river channel. The Port’s Section 203 report estimates that the total amount of material projected to be dredged under the deepening project could be as high as about 26.8 million cubic yards, which would be disposed of over the course of three years of construction. The issue of PFAS contamination of dredged spoils, as well as dredged spoil storage piles, and its impact on public health and the environment is yet to be resolved by the State of North Carolina and poses a uniquely significant challenge for future dredging activities in the Lower Cape Fear River and other areas where this activity may be contemplated.

In a recent white paper report titled “Treatment of PFAS to Allow for Beneficial Use of Impacted Dredged Sediments” by John M. Rice, P.E., P.H., and Ben Wachholz, P.E. | July 5, 2024, <https://www.trccompanies.com/insights/treatment-of-pfas-to-allow-for-beneficial-use-of-impacted-dredged-sediments/>   In a preface to their paper, they note that *“Approximately 200 to 300 million cubic yards of sediment are dredged each year by the US Army Corps of Engineers (USACE) and other federal interests (USEPA, 2007). Most of this dredging is performed to improve navigation in harbors, channels, and rivers, providing economic benefits and recreational opportunities. Strategically considering beneficial use opportunities for sediments is crucial for local governments, developers, property owners, and other stakeholders. However, serious issues and inaccurate perceptions often prevent the beneficial use of sediment. Although this dredged sediment could be a valuable resource, most of it is placed in confined disposal facilities (CDFs) or dumped in open water.”*

Open water disposal of contaminated soil is illegal and strictly prohibited in North Carolina. Federal laws, such as the Marine Protection, Research, and Sanctuaries Act of 1972 (also known as the Ocean Dumping Act), and state laws prohibit the dumping of hazardous materials into water bodies. Instead of being disposed of in water, contaminated soil must be managed through remediation or disposed of at facilities permitted by the state. The North Carolina Department of Environmental Quality (NC DEQ) supervises this process.

Regulated disposal options in North Carolina

·         **Permitted soil treatment facilities:** Also called dedicated contaminated soil facilities, the NC DEQ permits these to receive and treat contaminated soil from multiple sources.

·         **Treatment and containment:** These facilities use various methods, including land application, storage, and other containment and treatment procedures.

·         **On-site vs. off-site:** Depending on the type and volume of contamination, soil may be treated on-site or transported for disposal at a licensed off-site facility. This process often involves excavating and segregating contaminated soil.

·         **Tracking and monitoring:**Permitted facilities must track every shipment of contaminated soil. They are also required to monitor soil, groundwater, surface water, and air to ensure safety.

·         **Hazardous waste:** Soil containing hazardous waste is subject to federal Resource Conservation and Recovery Act (RCRA) regulations and must be treated to meet standards before being disposed of on land.

Dumping or even the random incidental disturbance of contaminated soil into water bodies poses severe risks to human health and the environment:

·         **Water contamination:** Toxic chemicals can leach from the soil, contaminating groundwater and surface water, including drinking water supplies.

·         **Ecosystem damage:** Contaminants can accumulate in sediments, harming local wildlife and aquatic ecosystems.

·         **Public health concerns:** Exposure to contaminants through contaminated fish or water can cause serious health issues.

When applying both state law and established guidelines, USACE must consider the **risks and uncertainties** regarding the impact on both human health and the marine environment as a fundamental aspect of the proposed Section 203 dredging requirements. A prudent approach is warranted in this context. Guidelines should be formulated with the understanding that permitting the disposal of materials under certain conditions does not absolve the obligation to make further efforts to mitigate the necessity for such disposal. In accordance with state and federal regulations, the North Carolina Department of Environmental Quality (NC DEQ) is responsible for identifying and regulating the sources of PFAS-contaminated dredged material in the Cape Fear River, as well as ensuring its proper disposal.

Increasingly, managing contaminated dredged material is a growing concern in Ports around the country.  So, why is PFAS-contaminated soil a problem?

·         PFAS can accumulate in our bodies and in all living organisms.

·         PFAS exposure has been linked to various health issues, including increased cholesterol levels, liver and kidney damage, suppressed immune systems, and increased risk of certain cancers.

·         These chemicals do not degrade easily, meaning they can persist in the environment for decades.

As the Cape Fear River navigation channel has become increasingly deeper over time, the saltwater “wedge” has slowly moved upstream, to the detriment of a once thriving riverine environment. When freshwater containing PFAS mixes with saline water at the wedge interface, the salt causes an increase in the sorption of PFAS to soil and sediment particles.   Sorption is the generic term for processes by which a substance accumulates on or within another substance. In saltwater, PFAS reactions are characterized by increased sorption to solids, particularly in estuarine environments, a process known as "salting out." That is, high salt concentration lowers water solubility and promotes PFAS adsorption to sediment particles and other organic matter. In addition, PFAS are highly persistent and do not easily degrade, leading to their detection and potential bioaccumulation in marine ecosystems, as well as concerns for human health through the consumption of seafood.

**How does PFAS contamination relate to this proposed dredging project?**

PFAS can adhere to or settle into fine sediments, such as silt and clay, found in the contaminated soils in and around the lower reaches of the Cape Fear River. It only makes common sense that when these contaminated sediments are dredged, a safe disposal management plan is a must for federal and state regulators. When PFAS is detected in dredged sediment, our regulators have the duty to determine if the material is suitable for placement or eventual disposal, especially for upland sites or beach renourishment projects.

The USACE “Beneficial Use” strategy aims to reuse the dredged material as a resource. Still, it faces significant challenges because it must also meet strict criteria to prevent PFAS release into the environment. The Eagles Island disposal area, built before NEPA, on a once-healthy wetland and floodplain, would be an unsuitable location for disposing of contaminated dredged soil, as it lacks a liner.  In addition, researchers in North Carolina and around the world are currently investigating the damage being done to aquatic ecosystems by PFAS as it transfers from sediment to water during dredging and placement activities.

The USACE must address PFAS contamination as part of the Cape Fear deepening options, particularly when evaluating disposal plans and considering the beneficial uses of these contaminated sediments. PFAS contamination introduces additional complexity that will require more testing and could significantly affect project costs and feasibility.

As I mentioned at the beginning of this comment, the lower Cape Fear Riverine environment has suffered severe long-term impacts caused by Chemours' willful release of excessive amounts of PFAS compounds.  This contamination will be further exacerbated by Brunswick County’s Reverse Osmosis Water Treatment Plant, which is soon set to discharge up to five million gallons of highly concentrated wastewater containing PFAS and other contaminants, including 1,4-dioxane. The pipeline for releasing this highly concentrated wastewater into the Cape Fear River is located about three miles upstream of the Port of Wilmington. Based on my initial assessments, the amount of concentrated PFAS waste being discharged will significantly exceed the current public health standards established by the Environmental Protection Agency (EPA) by more than a hundredfold. This highly toxic mixture will add to the PFAS contamination already flowing downstream from the Chemours facility in Fayetteville.

Aside from two minor references in the Geology and Geotechnical Engineering Sub-Appendix Attachment III-A, HTRW Report page X-7, the issue of dredging and disposing of PFAS-contaminated soils is not addressed anywhere in the Port’s Section 203 report or the USACE Draft EIS. The potential impacts of PFAS contamination from the discharge of contaminated waste, including that from Brunswick County’s nearly finished reverse osmosis (RO) plant, are not covered in the main report or any of the Environmental Impact Statement (EIS) appendices. This issue is also completely absent from the risk register. In my opinion, PFAS contamination in the Cape Fear navigation channel is currently one of the many critical environmental concerns facing project decision-makers.

The USACE is responsible for defending and safeguarding the air, land, and waters in and around the Lower Cape Fear River. I appreciate the opportunity to comment on this important endeavor. Thank you.

Essayons,

 //signed//

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