Lisa A. Vest, Hearing Officer

October 30, 2020

Office of the Secretary

Department of Natural Resources and Environmental Control

89 Kings Highway

Dover, DE 19901

RE: Diamond State Port Corp-Edgemoor Port Project

Docket #2020-P-MULTI-0024

Comments on Application for Subaqueous Lands Permit and Water Quality Certification for Port of Wilmington Edgemoor Delaware

Dear Hearing Officer Vest:

I write to you as a concerned taxpayer and citizen of Delaware.

I have worked on the Delaware River, fished on the River and boated on the River and I appreciate its value, not just for commerce but also beauty and enjoyment.

As background, I have been in the maritime business my entire life, sailing as a deck officer on commercial cargo ships for four years then as a Stevedore/Marine Terminal operator for over forty years in the ports of Boston, Baltimore, Philadelphia, Jacksonville and San Juan, Puerto Rico and I am very familiar with the Port of Wilmington. I was the Deputy Executive Director for the Maryland Port Administration for a year (1988-1989).

The Diamond State Port Corp. (DSPC) has applied to the DNREC Division of Water-Wetlands and Subaqueous Lands inspections for a permit and water quality certification in order to build its new Edgemoor Container Terminal. The Edgemoor terminal sits at a critical point on the river, where vessels turn from the Bellevue Range onto the Marcus Hook Range, a spot where any blockage of the main channel could have potentially disastrous effects on the many ports/terminals upriver of Edgemoor.

This project started, as per Duffield's Permitting Summary report, dated April 2016 and revised May 2016, with an estimate of only 50,000 cubic yards of dredge spoil being removed. That is a far cry from the current estimate of 3.3 million cubic yards.

Having worked on several dredging and terminal constructions projects during my tenure, I know the complexity of the application process for dredging permits and environmental impact studies and I appreciate that it takes time, effort and diligence on the part of all parties to ensure that the process is done correctly.

One of the most important parts of the process is to ensure that the application itself is done properly. Such is not the case, here.

The DSPC application to both the USACE for permits and DNREC for approval is incomplete and misleading. The application relies on:

1) Getting USACE approval for dredge disposal that has not yet even been applied for.
2) Getting USACE approval for future maintenance dredging that has not yet even been applied for.
3) There is no plan to show where fifty (50) years of maintenance dredge spoil will go, as is normal in all Federal dredging projects. The annual maintenance spoil is estimated to be 500,000 cubic yards per year.

On page 2 of the DNREC Division of Water, Wetlands and Subaqueous Lands Section Permit Application Form, in the **Helpful Information** segment it states *Applicants are strongly encouraged to contact the Corps for a determination of their permitting requirements*. The Diamond State Port Corp should know that it needs said approval.

The DSPC does not have adequate areas of their own for the dredge material, since the beneficial reuse to fill in the pier construction site is only about 10% of the spoil needing to be disposed of. They KNOW they are required to apply for approval from the USACE for disposal of dredge spoil in Federal CDF's and they KNOW they do not currently have those approvals in hand. Furthermore, they haven't even applied for said approvals, yet their entire project relies on the hope that USACE will grant permission, SOMETIME IN THE FUTURE, to use USACE CDF's.

In any other scenario, this would seem like a Ponzi scheme, relying on future, unknown "income" (CDF's) to promote and sustain current operations (dredging), hoping the future "income" will be there when needed.

The DSPC has no right to "presume" the ability to use the USACE CDF's and therefore, has an incomplete application. The state of Delaware and any of its departments, notably DNREC, should not be holding meetings on the applicability and/or viability of this project without having ALL the required evidence/approvals/permits in hand. DSPC's application(s) to DNREC should be returned and notice sent to DSPC, informing them they are lax in their duty by not properly informing DNREC of the potentially fatal flaws in their application.

In a nutshell, the original application stated that 50,000 cubic yards of dredge spoil would go into the USACE Wilmington Harbor South confined dredge facility (CDF). That 50,000 became 3.3 million cubic yards. On page 7 of Appendix 20, Sediment and Surface Water Quality Assessment-Proposed Berth and Approach Channel Edgemoor, Delaware, it states *The current primary choice for a CDF is the USACE Reedy Point Complex*. The Reedy Point Complex has been primarily used for the dredge materials from the C & D Canal. Wilmington Harbor South CDF is already earmarked for the Delaware River Deepening Project, which is Federal and benefits ALL maritime business on the Delaware River. The other potential CDF is Wilmington Harbor North, and that is already close to capacity. There isn't enough space at that CDF to handle the estimated 3.3 million cubic yards that the actual project will generate.

The DSPC applied for a Federal dredging permit from the USACE on 3/19/20 and it was revised on 6/5/20 because of missing documentation. There is no reason they cannot now provide what is needed, including the resolution of the dredge spoil disposal and future dredging maintenance, then resubmit the dredging application.

The entire process is going forward based on information the DSPC has submitted to DNREC that I believe is incomplete.

General issues.

The turning basin is in the middle of the only deep-water channel which all commercial vessels use. Any vessel being turned in the basin is blocking the channel.

Given the knowledge that any ship action in the turning basin will cause the blockage of the main channel, no prudent Master of a vessel would try and navigate the channel while such turning basin activities are going on. Ships in transit cannot readily slow down and still keep adequate steerage way, especially if they are running with the tide. Deep draft ships have to deal with the current and light draft ships, such as auto carriers have to deal with the wind effects.

As noted in the MITAGS study, there is a serious potential for grounding of a vessel during turning, especially at the south end, for any number of reasons, ergo, the potential for long term disruption of all river traffic is significant.

Turning basins are placed away from main navigable channels wherever it is physically possible to do so. The reason for this is because of the very real potential for blocking the channel and causing serious delays to river traffic, whether up bound or down bound.

I believe that the MITAGS study is insufficient in that it did not do enough trial runs under adverse conditions such as lack of visibility and did not take into account the hull configuration and windage of other type ships such as tankers and auto carriers when conducting the passing vessel tests.

In the MITAGS study the pilots had recommended transits/dockings being conducted at high tide and winds less than 20 knots.

Restricting transit/docking times to high tide or low winds for the type of ships used in the study may very well have a deleterious impact on other ships, not so restricted.

Issues with Duffield Report Appendix#10 Hydrodynamic Analysis of Proposed Edgemoor Terminal.

Site Conditions

Section 2.4 Currents

No tidal current measurements were available at the Edgemoor site so they used NOAH station 8545240, 27 miles north of the site and NOAH station 8551910, 14 miles south of the site. If nothing were to be changed, then their estimates of current speed at the site may prove correct, however, the project calls for a massive change

via the dredging, therefore, I believe tidal current measurements at the actual site are necessary.

Section 2.7-Suspended Sediment Concentrations

Suspended sediment concentration data were not available at the Edgemoor site and Duffield used data from 2007 from New Castle downstream of Edgemoor and Tinicum Island, upstream of Edgemoor.

The report states, *Measurements typically show increases in concentrations during stronger ebb or flood currents and decreases during slack currents*. Given that the use of "FANS" during the ebb and flow tidal cycles will generate additional substantial (but as yet unknown) amount of suspended sediment, this could have an adverse effect on the fish in the region. In my opinion, there has not been an adequate study done on the possible deleterious effects to the fish populations in the area of the proposed dredging project, notably sturgeon.

Conclusions

The conclusion states: *Sedimentation modeling performed as part of this study indicates that the Edgemoor Terminal berth deepening is likely to create a depositional zone which is primarily susceptible to sedimentation from fluvial silts, and to a lesser extent sand. Based on lack of sediment data already discussed in Section 5, project team discussions, and analysis of the present sedimentation modeling results, additional on-site data collection and sampling are deemed appropriate to refine the model input parameters to more accurately represent on-site conditions.* This is corporate lawyer speak for "We took our best guess, given what we didn't know or do."

I respectfully suggest that their "best guess" is not a firm foundation on which to proceed. The study itself acknowledges more analysis is recommended. This analysis should be completed before approval is given and permission to proceed is allowed.

DNREC should require the applicant to assess actual, on-site conditions, including the operation of the sedimentation fans, before approving the project.

Issues with Duffield Report Appendix 11-Essential Fish Habitat Assessment

Potential Effects

Section 8.2.3 of Appendix 11 states: *Therefore, the most important cause and effect relationship of concern to the sturgeon is the timing and spacing of the projects and whether their effects would spatially or temporarily overlap.*

There is a high potential for the Delaware River Deepening Project and the Edgemoor Dredging Project to overlap since the window for dredging is closed between March 1st and July 15th of each year; the area of dredging for both projects is in Reach B. Any evaluation of impact to sturgeon and other fish habitat from the Edgemoor project should account for the ongoing deepening project in Reach B.

Section 8.2.4 of Appendix 11 states: *There are no significant cumulative impacts anticipated to occur from the operation of the shoaling fans, based on an entrainment and impingement assessment performed at a nearby site.*

Nowhere in the documents provided for review is a copy of the above referenced assessment, and to my knowledge there are no sites on the Delaware River where shoaling fans of this size and number are being used. Therefore, it must, by definition, be an "apples and oranges" comparison.

Besides the possible deleterious ecological effects, as a taxpayer, both state and federal, I see severe issues with the currently proposed plan for the cost of future maintenance dredging and the disposal of the dredge spoils.

The DSPC is relying on the USACE to provide a site or sites (CDF's) to dispose of the dredge spoil. That is paid for by Federal taxes. Furthermore, if the USACE does not agree to allow the use of their CDF's, there is no viable alternate solution for the DSPC.

The DSPC is also relying on the USACE to do the future approach channel dredging maintenance. If USACE approves this arrangement, millions of dollars of cost will be borne by American taxpayers.

If, on the other hand, the USACE refuses to pay for future approach channel dredging maintenance, then DSPC has to split the cost for the maintenance dredging with GTUSA, the other party to the Concession Agreement dated 9/18/18. That is millions of dollars of costs that will be borne by Delaware tax payers.

This is taxpayer dollars going toward a project that will be operated by a private enterprise, GTUSA, not the DSPC.

The more immediate concern is that this project is proceeding, and DSPC is incurring costs, with no guarantee that the USACE will agree to both accepting the dredge spoil on their CDF's and providing the future maintenance dredging. If the USACE does not agree, I believe this may very well bring this project to a stop, thereby wasting millions of Delaware taxpayer dollars.

It is only prudent that no permits be issued unless and until the ecological issues are clarified and/or resolved, and the issues of dredge spoil disposal and future dredging maintenance are resolved.

Issues with Duffield Report Appendix #23 Full Mission Ship Simulation for Edgemoor Navigation Feasibility Study.

1) In Section 1.1-Objectives it states: *The preliminary plan was to have three or more pilots repeat the meeting vessel runs to demonstrate repeatability. The pilots accomplished this by repeating the same run twice under identical conditions, and rotating a third pilot in the repeated runs (runs 13-18). ERDC onsite representatives approved this modification to the work plan.* **There are no Run Comments from any pilots shown for the #13-#18 runs, so it is clear to me that those runs are irrelevant to the stated primary objective of the study**, i.e., *Demonstrate that the terminal will have minimal adverse impact on the vessels transiting inbound and outbound on the Delaware River.* The terminal itself won't have any impact on transiting traffic. It is the traffic to/from the terminal and their turning ships in mid-channel that will have the impact. **The test runs where they actually dock/undock the ship are relevant. The "transit" runs are irrelevant, in that they don't address the issue of ship traffic approaching the terminal whenever docking/undocking maneuvers are underway.**
2) Table 1-1 (page 8) identifies all those participating in the simulations. Captains David Cuff and Robert Bailey are identified as "conning" pilots.

Since the majority of the test runs were turning ship and docking maneuvers, actions where a "docking" pilot would be in control, these pilots would not be qualified to perform said maneuvers, and therefore these test runs are highly suspect. Captain Dana Gray who performed runs #5 and #8 is not identified anywhere in the program. Captain Wayne Bailey is identified as a consultant to MITAGS but actually conducted runs #23, #24, #26 and #28. It would seem that Captain Wayne Bailey's input, a consultant to MITAGS, would be biased in favor of the project.

3) In Section 4.2-Pilot Evaluations they state, *Both the river and docking pilots completed the surveys.* Nowhere in the document are any "docking pilots" identified. In the twenty years I worked in the Ports of Philadelphia, Gloucester, NJ and South Jersey Port Corp. the Delaware River pilots only conned the ships during transit. Various towboat captains did the docking/undocking. In the Port of Wilmington, Wilmington Tug Boat Company was the primary tug boat provider, and it was the tug captains that docked/undocked the ships calling in Wilmington. Who ran the "tugs" during the simulations?

4) The "run comments" are those of captain's David Cuff, Dana Gray, Robert Bailey and Wayne Bailey. Run #10 does not name a Captain.

5) In section 5.1-Pilot Recommendations, there are serious issues to consider.

Section 5.1.1- Environmental Conditions:

Wind speeds of 20 knots or less. I believe that the 20 knots mentioned in the study is the maximum upper range, and it is clear from the pilot's comments that they all had difficulty under those wind conditions. However, in 15 knots of wind, it is still very difficult to turn/dock ships and there are a significant higher number of days during the year where 15 knots winds are present

than when 20 knot winds are present. Using NOAA data, I did an assessment of the past five and a half years where the winds are at or exceed 15 knots in this area. My assessment is attached. *High tide for inbound transits*. Most ships transiting to/from up-river ports don't have to coordinate with high tide. This could cause delays to up-river traffic because ships going to Edgemoor are on a slow bell ahead of them.

Section 5.1.2-Design Considerations:

The design should consider deepening the red hatched area to provide additional maneuvering space as the inbound vessels turn in the turning basin. This is a serious issue since the river shoals sharply there and it is clear from the individual run comments about high winds and tugs needed and the safety ratings that the pilots are concerned about it. Furthermore, the turn at the lower end of Reach B is one of the more dangerous segments of the channel, especially with a strong ebb tide.

Section 5.1.3-Passing Vessels:

The comment, *the addition of the Edgemoor Terminal and resultant deepening, reduces the bank effect in the channel adjacent to the terminal making navigation safer.* is gratuitous and is not attributed to any of the pilots actually doing the simulations.

Section 5.1.4-Future Considerations:

Berthing procedures, tug power required, and emergency procedures will be developed in future simulation studies. (Judging by the numerous comments from the pilots about the

need for a high number of tugs required and the need for more powerful tugs, you should determine what type of tugs are available at Wilmington now vs. what may be required to berth these bigger ships under these conditions.) I liken this "future consideration" to the DSPC "hoping" the USACE will do their maintenance dredging in the "future."

6) Safety Issues

a) All the pilots involved in the simulations agreed that it is unsafe to dock/undock in winds at or above 20 knots.

b) All the pilots agreed you would need at least three (3) tugs with high bollard pull with high wind conditions. In Run #20, Captain Robert Bailey commented: *Tugs were running at 100% with limited functionality at certain times during transit.* In Run #23, Captain Wayne Bailey commented: *Tugs were operating at maximum capacity coming off berth. No reserves available.* In Run #24, Captain Wayne Bailey commented: *I used these tugs to maximize their efficiency and barely controlled the vessel. Greater bollard pull is needed.*

c) Section 4.2-Pilot Evaluations- The "Meeting runs in the Main Navigation Channel (13-18)" should not be counted in terms of safety or difficulty since they are "transiting" runs and there are no comments provided on any of those runs. Absent any comments, it must be presumed by the title that the runs consisted of ships "meeting in passage" in the main channel. They are irrelevant to the effect of ships docking/undocking, or to the effect a ship turning in the basin will have on other ships traveling up bound or down bound in the channel. They also have the lowest "difficulty" ratings

and the highest "safety" ratings, which skews the overall aspect of the study.

This section ranks "run difficulty" from 1-10 with 10 being the most difficult BUT they rank the "tug configuration" from 1-10 with 10 being "most adequate." The rankings are polar opposites. Anyone looking at table 4.2 would be misled into thinking the 1-10 ratings were similar. They are not. Also, they use "averages" for both tugs and overall difficulty. *The average tug configuration and reserve capacity was 5.1 (10=most adequate). The average overall difficulty was 5.7 (10=most difficult), and the average safety ranking was 5.4(10 = most safe.)*

Is this a case of "Figures don't lie, but liars, figure?"

i) "Most adequate" Is not the same as "safest" or "optimal." I have never before seen anyone use the term "most adequate" when assessing whether something is safe or not. They are measuring both tug configuration (number of tugs used) and reserve capacity (how much tug power (bollard pull) is used in the maneuvering vs. what the tug (s) have available to use.)

ii) The "Average Overall Difficulty" was NOT 5.7 but is 6.5. They skewed this to make it look better by including Runs 13-18 which had nothing to do with docking/undocking ships at Edgemoor.

iii) The "Average Safety Ranking" was NOT 5.4 but is 5.0. They skewed this to make it look better by including Runs 13-18 which had nothing to do with docking/undocking ships at Edgemoor.

iv) When you study tug reserve capacity numbers in the pilot's comments on each run, of the twenty-five (25) runs that were rated, you find that eight (8) of them had a score above five (5). Of those eight, five were done by Captain Robert Bailey and one by Captain

Wayne Bailey. Three of those eight were in-dockings with no ship turn involved. As noted above, Captain Wayne Bailey is a "consultant" to MITAGS and has a vested interest in ensuring a favorable result.

7) Other Factors

A) Using page 33 of Appendix B-Swept Paths and Available Pilot Evaluation Comments for Individual Runs, I calculated that when the ship simulations started their maneuvering, they were at an average speed of seven (7) mph. While it is feasible that a ship of that size can drift to a stop in 1.5 miles, the distance to the dead-in-the-water turning point, the engine must be at "STOP." The risk of losing steerageway becomes greater as the speed diminishes. At drifting speeds, you must kick the engine ahead to get steerage. The fact that Dead Slow Ahead (DSAH) is 6.3 knots in Container ship 29 and 20% for Maersk Edinburgh is 7.7 knots, means that the tugs **must** be in attendance for the entire distance.

B) While the level of difficulty in docking/undocking/turning ships is subjective, depending on the overall skill of the pilot/docking master, the fact that the AVERAGE SAFETY RANKING is only 5.0 tells me that either the pilots doing the ranking don't understand the concept of "Safety" or this is a dangerous project. If any Marine Terminal in the nation said that their "Safety Ranking" was only 5.0 out of 10, OSHA would probably shut them down. Similarly, with steamship lines. Although not subject to OSHA (except in special circumstances) steamship lines do have high standards of safety and care, especially when docking and undocking in tight quarters.

C) Inconsistency in the run evaluation. Figure 4.4 (page 20) shows that run #12 was conducted at flood current, yet comment #2 on the Run Evaluation Sheet states Max ebb current, 4 kts no set. This is a clear contradiction of the facts as stated.

I have other issues with this project, including the arguments put forth for economic gain for the Port of Wilmington and State of Delaware and the concept of government enterprise vs private enterprise.

The DSPC application for Subaqeuous Lands Permit and Water Quality Certification is incomplete and insufficient, and should be denied or returned. Studies should be required to address the deficiencies I have pointed out in this letter.

The DSPC applied for a Federal dredging permit from the USACE on 3/19/20 and it was revised on 6/5/20 because of missing documentation. There is no reason they cannot provide what is needed, including the resolution of the dredge spoil disposal and future dredging maintenance, then resubmit the dredging application.

In the meantime, I respectfully suggest that the errors/inconsistencies that I have pointed out in the Navigation Study should be addressed and resolved prior to permission to proceed on this project being granted.

Respectfully submitted,

Walter F. Curran

Cc: Governor John C. Carney Jr.
Senator Thomas R. Carper
Senator Chris Coons

Data taken from NOAA archives

Days per month when wind met or exceeded 15 MPH

Wilmington, DE

	2020	2019	2018	2017	2016	2015
DEC		7	9	4	11	5
NOV		9	12	5	7	7
OCT		7	6	4	7	6
SEP		2	0	3	4	2
AUG	2	0	0	2	1	3
JUL	3	3	5	1	2	0
JUN	0	7	5	3	4	6
MAY	8	3	3	11	3	8
APR	14	16	16	7	9	13
MAR	6	10	16	17	11	8
FEB	6	7	4	7	11	12
JAN	9	10	9	10	13	10