

IN THE  
Supreme Court of the United States

STATE OF NEW JERSEY,  
*Plaintiff,*

v.

STATE OF DELAWARE,  
*Defendant.*

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**DELAWARE'S APPENDIX  
ON CROSS-MOTIONS FOR SUMMARY JUDGMENT**

**VOLUME 6 (Pages 3785 – 4212)**

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December 22, 2006

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**Golder Associates Inc.**

1961 Old Cuthbert Road, Suite 301  
 Cherry Hill, NJ 08034  
 Telephone (856) 616-8166  
 Fax (856) 616-1874



September 27, 2004

Project No. 043-6313  
*via Federal Express*

Department of Natural Resources and Environmental Control  
 Division of Water Resources  
 Wetlands and Subaqueous Lands Section  
 89 Kings Highway  
 Dover, DE 19901

SEP 28 2004

**RE: Permit Application  
 Subaqueous Lands, Wetlands, Marina and Water Quality Certification Projects  
 Delaware River Geotechnical Borings and Cone Penetrometer Tests**

Ladies and Gentlemen:

Golder Associates Inc. (Golder) is submitting this permit application for Subaqueous Lands, Wetlands, Marina and Water Quality Certification Projects for review and approval by the Delaware Department of Natural Resources and Environmental Control, Division of Water Resources, Wetlands and Subaqueous Lands Section. This permit application has been prepared by Golder for a water-based survey investigation program consisting of cone penetrometer tests (CPTs) and geotechnical borings within the Delaware River. The Site lies just offshore from the Logan Electric Co-Generation Plant in Logan Township, Gloucester County, New Jersey. However, the proposed borings and CPTs are all located within Delaware State boundaries.

This application is being submitted pursuant to a telephone conversation between Ms. Laura Herr of the Wetlands and Subaqueous Lands Section and Mr. Michael Hart of Golder on September 16, 2004. Although Nationwide Permit No. 6 permits such survey activities with the river, Ms. Herr indicated that approval from the Wetlands and Subaqueous Lands Section would also be required prior to the start of work. Ms. Herr indicated that there were no specific permit appendices that pertain specifically to the survey activities proposed, and therefore instructed Golder to use only the basic application form and answer all questions that were pertinent to the survey activities that will actually be performed. In addition to the application form, Golder was instructed to provide a detailed description of the work being performed as well as a plan of the site and boring and CPT locations. As such, the following paragraphs provide greater detail about the survey investigation program; Attachment 1 contains the completed basic permit application form; and, a plan of boring and CPT locations is provided as Attachment 2.

The purpose of this survey investigation is to gather information for the design of a receiving terminal to support the proposed liquefied natural gas (LNG) storage facility in Logan Township,

New Jersey. Information from this investigation will be used for pier and bulkhead design, deepening for vessel berthing, and other ancillary features typical of such terminals. The survey investigation program will consist of fourteen (14) CPTs and five (5) geotechnical borings performed using barge-mounted investigation equipment within the Delaware River. As shown on the plan (Attachment 2) the boring and CPT locations lie outside of the navigable channel and anchorage limit and within the boundaries of the State of Delaware.

The investigation equipment will consist of geotechnical drill rig mounted to an approximately 30'x90' barge with a four-point anchoring system to keep position over the boring/CPT location. A tug boat will be used to position the barge over the boring/CPT locations and will also serve as a transport vessel for the drilling crew and observation personnel. All personnel working on the barge will depart from a docking facility on the New Jersey shore of the Delaware River each day. The sampling barge will remain in the river until the completion of the project. Both the sampling barge and tug boat conform to all necessary safety standards and the U.S. Coast Guard has been contacted and made aware of proposed project.

Borings will be advanced using mud-rotary drilling methods and samples will be collected via split-spoon sampler in general accordance with the American Society for Testing and Materials (ASTM) Standard Method D1586, and by direct-push Shelby tube in general accordance with ASTM D1587. In-situ vane shear testing (ASTM D2573) will also be performed within some of the borings. Where necessary to determine bedrock type, quality, and competency, diamond core drilling with an NX-size core barrel will be performed in accordance with ASTM D2113 to obtain samples of bedrock. Upon completion of each boring, the drilling rods, sampling equipment, and casing will be removed and the borehole tremie grouted to the mudline. Drill cuttings and drilling mud will be deposited upon the river bottom.

Cone penetrometer testing will be performed using an electronic piezocone. The CPTs will be advanced through the water column via casing set into the mudline and then by direct-push in accordance with ASTM D5778. The small diameter hole created during cone penetrometer testing typically closes upon cone extraction so grouting is not envisioned.

In addition to Ms. Herr, Ms. Susan Love from the Delaware Coastal Programs and Mr. Kevin Dougherty from the U.S. Army Corps of Engineers were also contacted regarding permitting. Both agencies indicated that they did not require any additional permitting for the proposed project.

This letter has attempted to provide the necessary information which is not included on the permit application in order to assist with the processing of this application. The anticipated commencement date for the survey investigation program is Monday, October 4, 2004. It is estimated that the program will require 3 to 4 weeks to complete. Therefore, time is of the

**Golder Associates**

DE13081

September 27, 2004

043-6313

essence and we respectfully request that the Wetlands and Subaqueous Lands Section expedite its review.

If there are any questions regarding this permit application please do not hesitate to contact either of the undersigned.

Very truly yours,

GOLDER ASSOCIATES INC.



Robert S. Valorio, P.E.  
Senior Project Engineer



Michael F. Hart  
Project Engineer

Attachments

cc: R. Stetkar, Golder Associates Inc.

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SEP 28 2004

Golder Associates

DE13082





STATE OF DELAWARE  
DEPARTMENT OF NATURAL RESOURCES &  
ENVIRONMENTAL CONTROL  
DIVISION OF WATER RESOURCES  
88 KING HIGHWAY  
DOVER, DELAWARE 19901

Wetlands and Subaqueous  
Lands Section

Telephone 302/739-4691  
Facsimile 302/739-6304

October 29, 2004

Lauren Segal  
BP Crown Landing, LLC  
501 West Lake Park Blvd  
Houston, TX 77079

RE: Subaqueous Lands Permit Application No. SP-389/04 for BP Crown Landing, LLC

Dear Ms. Segal:

After reviewing the above-referenced permit application and considering public comments received during the public notice process, we have determined that we cannot make a decision on your application until a determination has been made regarding whether construction of an LNG storage facility is an activity permissible in Delaware's coastal zone.

Accordingly, we are requesting that you withdraw your subaqueous lands permit application to perform 19 geotechnical test borings until the conclusion of the coastal zone status decision process. If the proposed LNG storage and transfer activities are determined to be ones that are permissible in the coastal zone, the application for the test borings can be re-submitted at that time.

If you should have any questions regarding this matter, please feel free to contact me at 302/739-4691.

Sincerely,

Laura M. Herr  
Program Manager  
Wetlands and Subaqueous Lands Section

cc: Pete Swinick, Golder Associates, Inc.  
John A. Hughes, Secretary, DNREC  
Kevin C. Donnelly, Director, Division of Water Resources

*Delaware's land water depends on you!*





**Golder Associates Inc.**

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 Fax (856) 616-1874  
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November 4, 2004

Project 043-6313  
 Via Facsimile and Federal Express

Department of Natural Resources and Environmental Control  
 Division of Water Resources  
 Wetlands and Subaqueous Land Section  
 89 Kings Highway  
 Dover, DE 19901

**RE: Permit Application  
 Subaqueous Lands, Wetlands, Marina and Water Quality Certification Projects  
 Delaware River Geotechnical Borings and Cone Penetrometer Tests**

Ladies and Gentlemen:

Golder Associates Inc. (Golder) submitted the referenced permit application for Subaqueous Lands, Wetlands, Marina and Water Quality Certification Projects for review and approval by the Delaware Department of Natural Resources and Environmental Control, Division of Water Resources, Wetlands and Subaqueous Lands Section (DNREC) on September 27, 2004. Golder respectfully withdraws the referenced application for a Subaqueous Permit at this time.

Golder's withdrawal of the referenced permit application is made without prejudice to any future filing for this application or any other application before DNREC or any other agency of the State of Delaware by Golder, Crown Landing LLC or any of their respective affiliates (collectively "Applicant Group"). Furthermore, Golder withdraws the referenced permit application without waiver of any right that any member of Applicant Group may or may not have or position that any member of Applicant Group may or may not assert in connection with such a prospective filing.

If there are any questions regarding this permit application withdrawal please do not hesitate to contact me.

Very truly yours,

GOLDER ASSOCIATES INC.

Robert E. Stetkar, P.E.  
 Geotechnical Practice Leader & Principal

RES/res  
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Cc: Lauren Segal, BP America





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December 7, 2004

Honorable John A. Hughes  
Secretary Department of Natural Resources  
and Environmental Control  
89 Kings Highway  
Dover, DE 19901

Re: Request for Coastal Zone Status Decision

DEC 7 AM 9:10

Dear Secretary Hughes:

Attached to this letter is the Request for Coastal Zone Status Decision (the "Request") filed by BP through its wholly owned indirect subsidiary, Crown Landing LLC (the "Applicant"). The Request concerns the proposed construction of a docking facility predominantly within the coastal waters of Delaware, which will exclusively serve a facility for the manufacture of LNG to be located in Logan Township, New Jersey, upland from the docking facility (collectively, the "Project"). Attached you will also find a legal memorandum prepared by this Firm addressing the relative applicability of various provisions of the Coastal Zone Act ("CZA") to the Project.

The essence of the Request, and the legal memorandum which accompanies it, is that the construction of the proposed docking facility is a permissive use under the CZA pursuant to the provisions of § 7002(f) of Title 7 because it exclusively supports a facility which meets the definition of "manufacturing" pursuant to §7002(d). Moreover, and as more fully detailed in both the Request and the legal memorandum, this result obtains even though the upland facility which is supported by the docking facility is situated in New Jersey, because the upland facility is engaging in an activity--manufacturing--which would be permissible under the Act if it were conducted on Delaware soil.

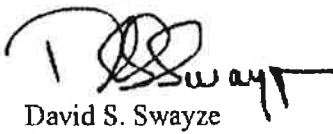
Honorable John A. Hughes  
December 7, 2004  
Page 2

Because the docking facility which is the subject of this Request is in Delaware waters, and the manufacturing facility which it supports is in New Jersey, it is important to align the nomenclature used by the Department in its Status Decision Request form, with the descriptive language used by the Applicant in describing the various components of this Project. In this regard, the Applicant has interpreted the use of the word "Project" on the Department's form as incorporating both components of the facility: *i.e.*, the Manufacturing Facility and the Delaware River Docking Facility. In most instances, however, the Applicant will reference the specific component of the Project for which it seeks this status determination and, ultimately, a permit; to wit, the "Delaware River Docking Facility." Finally, where there are references required in the Request Form to the activities or processes occurring within the State of New Jersey, the Applicant has referenced either the "Upland Facility" or the "Manufacturing Facility." Again, however, it is only the Delaware River Docking Facility which invokes the provisions of the CZA status decision and permitting requirements..

This Request is exclusively addressed to the provisions of the CZA, related Delaware laws, and pertinent regulations. The Applicant reserves all of its rights and claims to challenge as a matter of federal law the enforceability of the CZA with respect to the Project in the appropriate forum and at the appropriate time should that be necessary. However, it is the Applicant's respectful request that you determine that the Delaware River Docking Facility is exempted from the general CZA prohibition on the construction of new bulk product transfer facilities because it exclusively supports a facility which will engage in a permissible manufacturing use

Please advise should you require any additional information or clarification in order to process this Request.

Very truly yours,



David S. Swayze  
DSS:bmh  
enclosure

bp



November 30, 2004

The Honorable John Hughes, Secretary  
Department of Natural Resources and Environmental Control  
89 Kings Highway  
Dover, DE 19901  
302-739-5072  
Re: Crown Landing LNG Project Coastal Zone Status Decision

Dear Secretary Hughes:

This letter introduces the Crown Landing LLC application for a Delaware Coastal Zone Status Decision for the Crown Landing LNG Project. The Crown Landing LNG Project is a proposed new waterfront facility that will receive and process liquefied natural gas (LNG) into a useable product. The facility will be constructed, owned, and operated by Crown Landing LLC, a wholly-owned subsidiary of BP America Production Company. The Manufacturing Facility will be located in Logan Township, Gloucester County, New Jersey, with the majority of a supporting Docking Facility extending into Delaware waters. The site is located at approximately River Mile 78 of the Delaware River, adjacent to the Marcus Hook Anchorage. The upland site is currently being leased from its owner, Sun Oil, Inc., and BP has the option to purchase the land.

Crown Landing LLC filed a formal application with FERC on September 16, 2004. Crown Landing LLC currently plans to begin construction in 2005 (assuming all required permits and approvals have been obtained) and begin Project operation in 2008. Crown Landing LLC is filing this application at this time in the interest of maintaining this timeline.

This proposed Project will help achieve several of the Strategies set forth in the Delaware Energy Task Force's Final Report to the Governor titled *Bright Ideas for Delaware's Energy Future*, which addresses issues of energy reliability, demand, cost and environmental impact.

Crown Landing LLC is committed to designing, constructing, and operating a safe and secure facility. The Crown Landing LNG Project is designed in accordance with the requirements of the U.S. Coast Guard's *Waterfront Facilities Handling LNG* (33 CFR 127), U.S. Department of Transportation's (DOT) *Federal Safety Standards for Liquefied Natural Gas Facilities* (49 CFR 193), the National Fire Protection Association's (NFPA) *Standards for the Production, Storage, and Handling of Liquefied Natural Gas* (NFPA 59A), and the Maritime Transportation Safety Act (MTSA).

We respectfully request that the Department of Natural Resources and Environmental Control issue a favorable Status Decision for the Crown Landing LNG Project for the reasons set forth in this Request and the accompanying memorandum of law prepared by Parkowski, Guerke & Swayze, P.A.

Sincerely,

A handwritten signature in cursive script that reads "Lauren Segal".  
Lauren Segal  
Vice President

*Attachments*

Cc:

Dennis Brown  
David Swayze  
Gregory Roden  
James Busch  
Laurie Beppler



***DEPARTMENT OF NATURAL RESOURCES AND  
ENVIRONMENTAL CONTROL***

**REQUEST FOR A COASTAL ZONE STATUS DECISION**

**Amended August 2004**



DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL  
REQUEST FOR A COASTAL ZONE STATUS DECISION

\_\_\_\_\_  
Date Received  
(for Secretary's use)

\_\_\_\_\_  
Project Number  
(for Secretary's use)

IDENTIFICATION OF THE APPLICANT

Name: Crown Landing LLC

Address: 501 West Lake Park Blvd  
Houston, TX 77079

Telephone No.: (281) 366-2259 Fax No.: (281) 366-2753

Site of Proposed Project (if different than above):

Route 130 Logan Township, New Jersey  
Delaware River (roughly River Mile 78)

Contact Person: David Blaha  
Telephone Number: (410) 266-0006

Title: Environmental Consultant  
Fax Number: (410) 266-8912

Contact Person: David Swayze  
Telephone Number: (302) 654-3300

Title: Legal Counsel  
Fax Number: (302) 654-3033

If applicant is not the project owner, but is authorized to act for the owner, state that below and give the owner's name and address. Provide written authorization from client for being the authorized agent for this application.

Crown Landing LLC is the Project owner and is leasing the land from  
Sunoco, Inc.  
1801 Market Street, Philadelphia, PA. 19103-1699

1. Is the applicant claiming confidentiality in any section of their application?

Yes/No No

If yes, applicant must do so in accordance with 29 Del. Code Chapter 100. The Secretary will not automatically honor such requests not in accordance with Chapter 79. Applicant should provide appropriate documentation with this application to assure confidentiality.

PROJECT IDENTIFICATION AND DESCRIPTION

	YES	NO
1.a. Is the proposed project entirely or partly a new or improved or extended pier or other ship docking facility? See Tab 1	<u>X</u>	___
1.b. If yes, will it be used at least in part for bulk cargo transfers by the applicant? If no, please explain what it will handle. See Tab 1	<u>X</u>	___
2.a. Is this project entirely for pollution control purposes?	___	<u>X</u>
2.b. Is this project a new research and development facility?	___	<u>X</u>
2.c. Is this project a new or expanding (flow rate) public sewage/ water plant?	___	<u>X</u>
3.a. Will the proposed project meet the following definition of "Manufacturing" as found in the Coastal Zone Act: "Manufacturing means the mechanical or chemical transformation of organic or inorganic substances into new products, characteristically using power driven machines and materials handling equipment, and including establishments engaged in assembling component parts of manufactured products, provided the new product is not a structure or other fixed improvement." See Tab 1	<u>X</u>	___
3.b. If no to questions 3.a., explain what kind of activity will be carried out at this project site.	___	___
4. Will the project have the following equipment or facilities?		
Smoke stacks	<u>X</u>	___
Tanks	<u>X</u>	___
Distillation or reaction columns	<u>X</u>	___
Chemical processing equipment	___	<u>X</u>
Scrubbing towers	___	<u>X</u>
Pickling equipment	___	<u>X</u>
Waste treatment lagoons	___	<u>X</u>
Smelters	___	<u>X</u>
Incinerators	___	<u>X</u>
See Tab 2		
5. Will the project use 20 acres or more? If not, how many acres will it use? <u>19 acres in Delaware for the pier and ship berth</u>	___	<u>X</u>

YES NO

6.a. Does this facility appear in Appendix B of the Coastal Zone Act Regulations (the list of the nonconforming uses)?  
If not, proceed to question 7a.

         X  

6.b. If so, will the proposed activity described in this application occur entirely within the lines delineating the area of nonconformity for this site as seen in the Appendices of the Regulations?

  NA  

6.c. If the proposed activity, or use, will straddle this line, describe what equipment, facilities, or machinery will be within the delineated area of nonconformity AND what will be out of this area of nonconformity.

  NA  

7.a. Is the proposed use part of a manufacturing use that was in operation prior to and on June 28, 1971?

         X  

7.b. Has this facility ever been granted a Coastal Zone Act Permit?  
If so, when? \_\_\_\_\_

         X  

7.c. Name of prior applicant/permittee if different from present applicant/permittee: \_\_\_\_\_

  NA  

8. Does the new or expanded use involve any change in existing:  
processes?  
facilities?  
buildings?  
emissions discharge

         X    
         X    
         X    
         X  

If yes, please explain on a separate page.

**Because this is a new facility, it will not involve any change in existing processes, facilities, buildings, or emissions discharges.**

9.a. Will this project directly or indirectly increase plant production over present capacity?

  N/A  

9.b. If yes, explain in what way and by how much.

9.c. Will this project directly or indirectly produce any new products at this facility over the current product line?  
If so, list them here or on an attachment.

  N/A  

**The proposed Project will be a new facility, and, therefore, does not have any current capacity or product line.**

10. List materials and/or ingredients to be utilized by this proposed project and how they will get to the site.

**See Tab 3**

11. Attach a concise but complete description of the proposed project, or use and how it relates to any existing manufacturing operations and facilities (if this is not for an entirely new manufacturing plant). Explain what effects there will be on land use acreage, manufacturing production capacity, modification of current product line(s), and any safety risks to the public and company employees.

**See Tab 4**

12. Is this project, or use, a complete, single project, or is it part of a long-term, large-scale project that has other components to it that may need approval under the Coastal Zone Act at a later date? If it is part of a larger project, describe the entire project on a separate attachment and mention ALL major machinery, facilities, land, products, and processes involved.

**This Project would be constructed as a single, complete project. At present, no other components are planned that would require approval under the Delaware Coastal Zone Act at a later date.**

13. Provide a detailed and accurate summary of the proposed project's effects on local surface and ground water quality, surface and groundwater withdrawals, air quality, habitat loss, solid and hazardous waste, noise, odors, and any other pertinent information about the proposed project's effects on the local environment. Provide a statement on how this proposed project will affect the local aesthetic quality.

**See Tab 5**

14. Provide a detailed statement describing the proposed project's potential to pollute should equipment malfunction or human error occur, including a description of backup controls and safety provisions.

**See Tab 6**

15. Provide a map of appropriate scale to clearly show important natural features and project buildings and processing equipment of the proposed project such as roads, wetlands, railway sidings, drainage ways, tanks, sewer systems, water mains, wells, etc.

**See Tab 7**

16. What is the current SIC code for the proposed use?

**The SIC code for the proposed use in Delaware is:**

**4491 – Marine Cargo Handling : Dock and Pier Operations**

**There is no SIC code specifically for the Liquefied Natural Gas Manufacturing Facility in New Jersey.**

17. What is the current zoning and planned land use of the proposed project site?

**See Tab 8**

18.a. Will the proposed project require a zoning change? (YES/NO) **NO**

**See Tab 9**

18.b. If so, to what classification and what zoning authority is responsible for reviewing and approving any change?

**N/A**

19. Will this project require new supporting facilities and what impacts will they have on the environment, economics of the area, aesthetic quality, zoning, and neighboring land uses?

**See Tab 10**

20. Have you enclosed your application fee check of \$3,000 made out to the State of Delaware?

**Yes**

21. If applicable, have you complied with 7 Del. Code, Chapter 79? The Secretary will not make a decision on this application until the applicant has submitted all necessary information to comply with Chapter 79.

**Crown Landing LLC has submitted the background statement in accordance with 7 Del. Code, Chapter 79.**

22. Should this project proceed, what, if any, negative impact will be expected. Provide a detailed paragraph on each of the following:

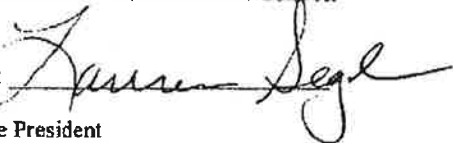
- a. the environment.
- b. the economy (corporate, state, county).
- c. aesthetic effects.
- d. number and type of supporting facilities required and the impacts, if any, on these six factors.
- e. county and municipal comprehensive plans.
- f. effect upon neighboring land uses.

See Tab 11

Under the penalty of perjury pursuant to 11 Del. C. S1221-1235, I hereby certify that the information contained herein is true and complete to the best of my knowledge.

I also hereby acknowledge that all the information in this application will be public information subject to the Delaware Freedom of Information Act, except for clearly identified proprietary information agreed to by the Secretary of the Department of Natural Resources & Environmental Control.

Signature:



Title: Vice President

Date: November 30, 2004

## 11.4 PROJECT FACILITIES

### 11.4.1 Docking Facility (predominantly in Delaware)

The Docking Facility will consist of an approximately 2,000-foot-long pier and a single berth designed to accommodate LNG carriers from 138,000 to 200,000 m<sup>3</sup> in capacity (Figure 4). The berth will include four breasting dolphins equipped with fenders and quick release hooks and five mooring dolphins equipped with quick release hooks to safely moor the LNG carrier. The berth will include walkways between the dolphins and the platform for personnel access and gangways between the carrier and the dolphins for the transfer of crew. Crown Landing will install an electronic berthing aid system to assist berthing operations.

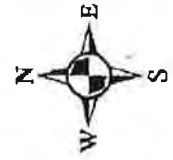
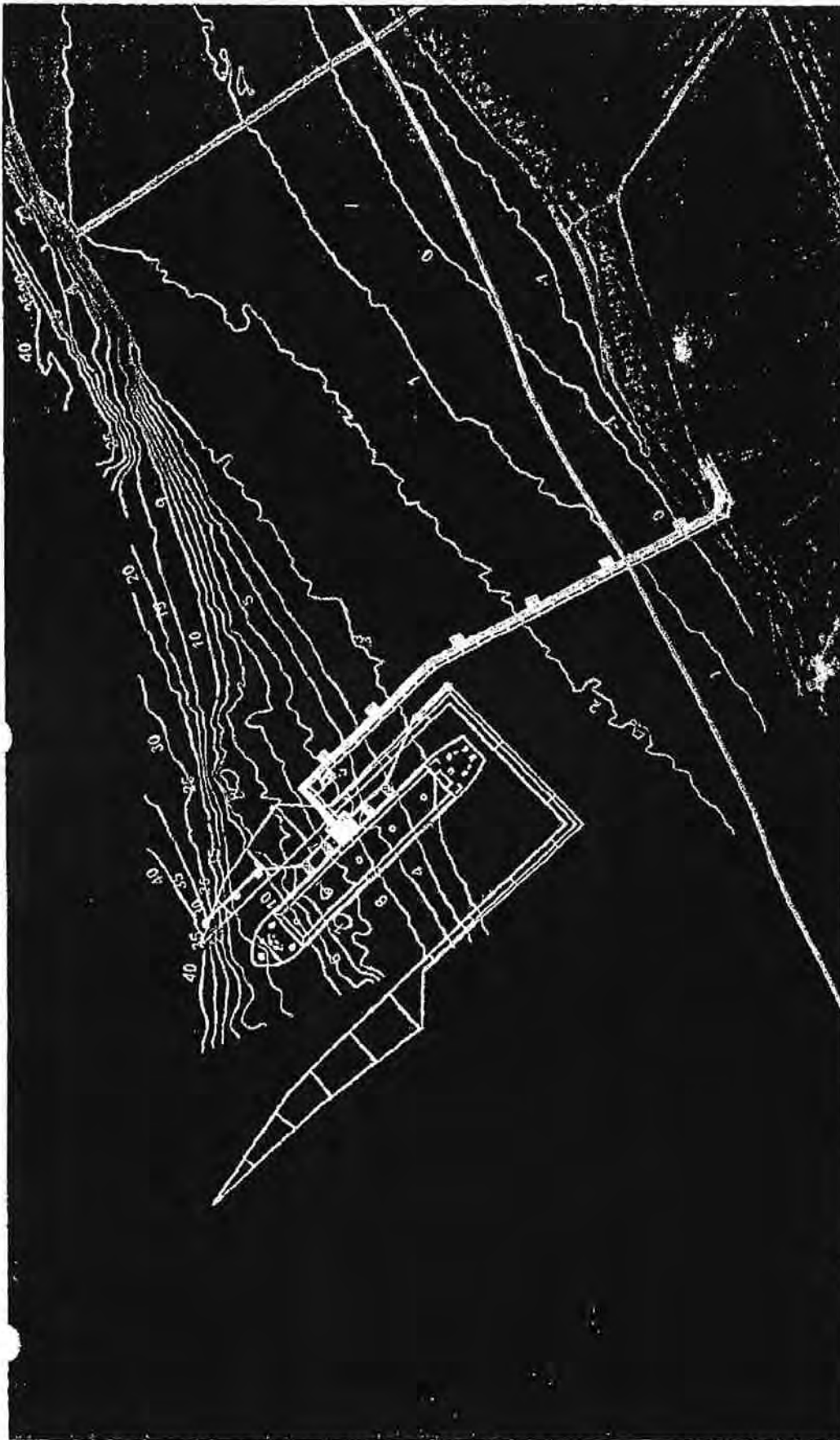
The trestle will provide the structural support for the cryogenic piping, containment trough, and utility lines from the shore to the berth and accommodate travel lanes for light vehicles. The LNG will be transferred from the ship to the Manufacturing Facility LNG storage tanks using the ship's pumps. This bulk product will be transferred from the ship through three 16-inch liquid unloading arms and will be transported from the pier through a 44-inch diameter liquid unloading line to the storage tanks. Boil-off gas (BOG) blowers will return part of the vapor generated during the unloading process from the LNG storage tanks to the ship through one 16-inch diameter vapor return arm. The remainder of the vapor is compressed, condensed back into LNG, and placed in the LNG tanks. During the holding mode of terminal operation (when no ship is unloading), a 12-inch line circulates LNG from the storage tanks to the main header at the end of the pier. The LNG returns through the liquid unloading line to keep the line cold.

### 11.4.2 Manufacturing Facilities (Entirely in New Jersey)





The Manufacturing Facility includes the following components.

#### *LNG Storage Tanks*

The LNG will be stored in three 158,000 m<sup>3</sup> gross full-containment storage tanks, comprised of a nine percent nickel steel inner tank, pre-stressed concrete outer tank, and a concrete roof. The concrete outer tank will serve as the secondary LNG impoundment to contain LNG in the extremely unlikely occurrence that a leak develops in the inner tank shell. All piping connections and tank nozzles will occur through the roof.



**Legend**

-  Crown Landing Site
-  Bathymetry Contours
-  Proposed Facilities
-  DE/NJ State Line

**Figure 4**

Berth and Dredged Area

Note: Bathymetry Contours are set at Mean Low Water (MLW) Datum



Bathymetry provided by Ocean Surveys, Inc. June 2003



### ***Vapor Handling***

During ship unloading, vapor in the storage tanks is displaced by unloading LNG from the ship. Vapor is generated as boil-off in the storage tanks due to heat input from the atmosphere. Blowers and compressors are used to move excess vapor from the storage tanks either to the ship or to a recondenser vessel. Vapor sent to the recondenser is condensed back into LNG by blending it with cold LNG from the low-pressure pumps. As required, gaseous nitrogen will be introduced into the BOG condenser in order to lower the heating value of the finished product.

### ***Low-Pressure LNG In-Tank Pumps***

The low-pressure in-tank pumps (three pumps per tank) are vertical centrifugal pumps mounted within the tank and immersed in the LNG fluid inside a pump column. Pump discharge will normally operate at a 160 psi differential into the low pressure header to the BOG condenser. The three pumps provided in each LNG storage tank are capable of sending out LNG capable of supporting the base load capacity of the Manufacturing Facility from one tank.

### ***High-Pressure LNG Pumps***

The outlet liquid stream from the BOG condenser flows to the high-pressure LNG pumps. These multi-stage units are each designed to pump the LNG to approximately 1,300 psig before vaporization. When the finished product is ready for distribution, the actual send out pressure will be determined by pipeline delivery requirements. The high-pressure pumps are vertical canned multistage cryogenic pumps. Seven pumps will be installed.

### ***LNG Vaporization***

The LNG is processed using a closed loop shell and tube heat exchanger vaporization system. Seven vertical shell and tube exchangers will be used to meet the base load capacity of the Manufacturing Facility. Water-ethylene glycol (WEG) will be used as the primary vaporization heating medium. Gas-fired heaters will heat the WEG mix. Ten gas-fired water glycol heaters provide heating. The heaters will be installed with ultra-low NOx burners to minimize air emissions. The heaters will be vented through one stack, approximately 150-foot-high. Four pumps will be available to pump the WEG from the heaters to the LNG vaporizers.

### ***Nitrogen***

A nitrogen injection system will be provided to reduce the heating value of the vaporized gas. This system is required in the event of deliveries of LNG which when vaporized will have heating values that exceed the limits of downstream facilities. The system will consist of a cryogenic air separation plant incorporating air filtration and dehydration, air and nitrogen compressors, heat exchangers, a turbo-expander, distillation towers, and a 750,000 gallon liquid nitrogen storage tank. The gaseous nitrogen will be injected into the LNG stream at the BOG condenser. Direct BTU analyzers will be used to monitor and control the heating value of the vaporized LNG.

### ***Mercaptan***

Once the LNG is vaporized, the high pressure gas will be odorized using mercaptan. The mercaptan will be injected into the gas using measuring injection pumps at a rate stipulated by the pipeline companies. The mercaptan will be stored on site in the vicinity of the metering facilities.

The finished product will be sent out to the pipeline grid at a maximum pressure of 1,200 psig and a minimum temperature of 40°F. The tie-ins with the three pipelines will occur on the Crown Landing Site. The Project will have a maximum delivery capacity of 0.6 BCFD to Transco, 0.5 BCFD to Columbia, and 0.9 BCFD to Texas Eastern, providing operational flexibility for the planned Manufacturing Facility send-out capacity of 1.2 BCFD.

### ***Buildings***

Six enclosed buildings will be constructed for the Crown Landing Manufacturing Facility:

- Administration Building – approximately 3,200 square foot one-story insulated metal building for the administrative headquarters of the Manufacturing Facility;
- Maintenance/Warehouse Building – approximately 7,500 square foot, one-story insulated metal building providing storage, maintenance, and repair areas;
- Motor Control Center (MCC) Building – approximately 8,500 square foot, one-story insulated metal building housing the main control room and motor controls;
- Guardhouse – approximately 150 square foot one-story insulated metal building to provide a security checkpoint for all incoming traffic to the Manufacturing Facility;
- Pier Control Building – approximately 960 square foot, one-story insulated metal building located on the trestle and housing pier operations controls; And
- Utility Building – approximately 2,400 square foot, one-story building that contains various Manufacturing Facility utilities.

The facility will also include several metal shelters (up to 15,000 square feet) that contain the air compressors, BOG compressors, water-ethylene glycol heaters, and associated equipment.

### *Utilities*

The Project requires various utilities for operation: service and potable water, gas for fueling the heaters, diesel fuel for the emergency generator, electricity, instrument and plant compressed air, heating and air conditioning, on-site septic system, and storm water management. The provision of these utilities is summarized in Table 1.

### *Fire Protection System*

The fire protection system is designed in compliance with NFPA 59A requirements and will provide for extinguishing Class A fires; provide water to cool structures and equipment exposed to thermal radiation; and aid in dispersing flammable vapors. The main components of the system will include:

- 300,000-gallon firewater storage tank;
- One electric and one diesel powered firewater pumps;
- One electric motor-driven jockey pump;
- A firewater piping distribution system to provide water to the facility's hydrants and monitors; and
- Fire hydrants with monitors and hose reels strategically located throughout the facility.

Fire extinguishers, which are remotely operated, will be provided throughout the terminal. Dry chemical extinguishers will be placed at strategic locations throughout the terminal.

**Table 1 Summary of Project Utility Requirements**

Service water	Provided by on-site wells
Drinking water	Delivered as bottled water
Fuel gas	Self-generated with pipeline gas as a back-up
Diesel fuel	Delivered by truck
Electricity	Provided via an independent feed from the existing Conectiv 69 kV transmission line
Compressed air	Self generated with an air compressor system
Nitrogen	Outbound from on-site air separation facility
Heating and air conditioning	Electrical HVAC systems provided in enclosed buildings (Administrative Building, Maintenance/Warehouse Building, MCC Building, Guardhouse, Pier Control Building, and Utility Building)
Wastewater	On-site septic system designed in accordance with New Jersey Administrative Code 7:9A
Stormwater management	On-site stormwater management facilities designed in accordance with New Jersey Department of Environmental Protection Stormwater Management Guidelines (NJDEP, 2003)
Utility nitrogen	Obtained from air separation plant

**LNG Project Controls**

The Project control system will consist of a Distributed Control System (DCS) with an independent safety control system. A central control room will be constructed for complete plant control and monitoring. There will also be an operator control station located on the pier.

**11.4.3 LNG Carriers**

Natural gas production is located primarily in remote areas, which are distant from consumption centers. In order to efficiently bring the natural gas to market, it is necessary to manufacture a liquid from the natural gas, which reduces the volume of the natural gas by approximately 600 times, load the LNG onto specially designed ships, and transport the cargo by sea.

The ships that will transport the LNG from the liquefaction port to Crown Landing will load the cargo of LNG into specially designed and constructed tanks. The cargo is kept at atmospheric pressure by a combination of insulation, to minimize heat transfer to the cargo, and boil-off gas generation. This boil-off gas is removed from the cargo and preferentially burned in the ship's engine room to supplement fuel oil.

All LNG ships calling at Crown Landing will be governed by a USCG - approved Operating Plan for LNG on the Delaware River. The Operating Plan is developed by taking into account public input and a formal risk assessment.

The ships that will deliver LNG to Crown Landing will be principally operated and owned by BP. BP operates its ships under the British flag. Ships will range from 138,000 m<sup>3</sup>, the size of existing BP LNG ships, to 200,000 m<sup>3</sup>, which have yet to be constructed. The dimensions of these ships are listed in Table 2 below.

**Table 2. LNG Ship Dimensions**

<b>Dimension</b>	<b>Existing Ships Actual Dimensions</b>	<b>Future Ships Approximate Dimensions</b>
Capacity in cubic meters	138,000	200,000
Length in feet	914	1056
Beam in feet	138	167
Loaded Draught in feet	38	38
Ballast Draught in feet	32	32
Depth of Hull in feet	85	88
Loaded Displacement in long tons	103,000	147,000

LNG ships are designed and constructed to meet standards for maximizing safety and minimizing risk. These standards exist on a variety of scales from international to domestic and include the following

- International standards are developed by the International Maritime Organization (IMO) and include Safety of Life at Sea (SOLAS), The International Code for the Construction and Equipment of Ships carrying Liquefied Gases in Bulk (IGC Code). These International standards are adopted by individual flag States into their National legislation and ships are constructed and operated to these standards. The construction and operation is monitored for compliance by the relevant flag State. An example of this being the USCG have adopted all IMO resolutions into the legislation of the US in the relevant CFRs. Additionally classification societies, such as the American Bureau of Shipping, ensure that the LNG ships are constructed and operated to their specific rules for construction and maintenance.
- Domestic standards established by the USCG (46 CFR Part 154) and the American Bureau of Shipping, which stipulate detailed construction specifications, such as steel quality as well as the IMO standards.

#### **11.4.4 Downstream Facilities**

One of the primary advantages of the proposed site is the proximity to natural gas transmission pipelines. The existing Columbia and Transco pipelines are located on the Crown Landing Site. The tie-ins from the metering facility to the pipelines will be short and will not require any new off-site rights-of-way. Texas Eastern has filed a separate application with FERC to extend its pipeline system approximately 12 miles to the Crown Landing Site. Upon approval of its application, Crown Landing will also connect to this lateral on-site. Metering and odorant injection facilities for all three pipelines will be provided on the Crown Landing Site.



STATE OF DELAWARE  
DEPARTMENT OF NATURAL RESOURCES  
AND ENVIRONMENTAL CONTROL

88 KINGS HIGHWAY  
DOVER, DELAWARE 19801

PHONE: (302) 739-4403  
FAX: (302) 739-6242

OFFICE OF THE  
SECRETARY

February 3, 2005

Ms. Lauren Segal  
Vice President  
Crown Landing LLC  
501 West Lake Park Blvd.  
Houston, TX 77079

**CERTIFIED MAIL**  
Return Receipt Requested

Re: Coastal Zone Act Status Decision

Dear Ms. Segal:

Based on the public comments, the assessment and recommendations of DNREC staff, and discussions with our legal representatives, I have reached a decision on your application for a coastal zone status request.

I find that your proposed facility represents a prohibited offshore bulk product transfer facility and does not meet the exemption under the bulk product transfer facility definition in that the facility cannot be considered a "manufacturing use" under the Act. Furthermore, I conclude that this facility, as proposed, exhibits characteristics sufficient to deem it a heavy industry, also prohibited under the Act. Finally, the on-shore storage tanks essential to the operation of the facility are prohibited structures.

This decision does not come without some appreciation of the need for additional natural gas supplies in this country nor the relative cleanliness of natural gas compared to other energy fuels. Despite the benefits that increased LNG imports might bring, placement of this facility within the boundaries of Delaware is, in my opinion, clearly a prohibited use within Delaware's coastal zone.

There is a fourteen-day appeal period following the publication of the enclosed legal notice announcement of this decision. If you wish to appeal this decision to the State Coastal Zone Industrial Control Board, please call Dennis Brown at 302-739-3091 for an appeal form. There is a one-hundred dollar appeal fee. If no appeal is received within the appeal period, this decision becomes final.

Sincerely,

John A. Hughes  
Secretary

pc: Dennis Brown  
David S. Swayze  
Michael W. Teichman

Enclosure

*Delaware's Best Future depends on you!*



BEFORE THE COASTAL ZONE INDUSTRIAL CONTROL BOARD OF  
THE STATE OF DELAWARE

IN THE MATTER OF COASTAL ZONE )  
STATUS DECISION ON THE APPLICATION ) APPEAL NO. CZ 2005-01  
OF Crown Landing LLC )

DECISION AND ORDER

Pursuant to notice, a public hearing was held on March 30, 2005, in the Conference Center of Delaware Technical & Community College, Stanton Campus, Newark, Delaware; concerning the appeal filed on February 15, 2005, by Crown Landing LLC and the appeal filed on February 18, 2005, by *pro se* appellants John M. Kearney, Maryann McGonegal, Alan Muller and John D. Flaherty of a status decision of the Secretary of the Department of Natural Resources and Environmental Control issued February 3, 2005. Members of the Coastal Zone Industrial Control Board ("the Board") present were: Christine M. Waisanen, Chair, John Allen, Paul Bell, Albert Holmes, Pallather Subramanian and Victor Singer. Absent was Robert D. Welsh. John S. Burton and Judy McKinney-Cherry were disqualified from consideration of the matter. Phebe S. Young, Deputy Attorney General, represented the Board.

Crown Landing LLC was represented by David S. Swayze, Esq., and Michael W. Teichman, Esq., of Parkowski, Guerke & Swayze.

Collins J. Seitz, Jr., Esq. and Matthew Boyer, Esq., of Connolly Bove Lodge and Hutz LLP and Kevin Maloney, Deputy Attorney General, represented the Department of Natural Resources and Environmental Control ("DNREC") and DNREC Secretary John Hughes ("the Secretary").



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PRELIMINARY MATTERS

On March 8, 2005 and March 9, 2005 respectively, Crown Landing LLC and DNREC filed motions to dismiss the appeals of John M. Kearney, Maryann McGonegal, Alan Muller and John D. Flaherty. The controlling statute, 7 Del. C. § 7007(b) provides that, "Any person aggrieved by a final decision of the Secretary of the Department of Natural Resources and Environmental Control under subsection (a) of § 7005 of this title may appeal same under this section." The disputed appeals favor the Secretary's status decision but include assertions that the *pro se* appellants are nevertheless "aggrieved" by the Secretary's failure to impose fines pursuant to 7 Del. C. § 7011 for activities the *pro se* appellants allege the applicant has undertaken without a required permit. Additionally, the disputed appeals include the assertion that, "The DNREC under John Hughes has consistently failed to defend CZA decisions at the judicial level, and have (sic) demonstrated an alarming incompetence and lack of understanding of CZA issues, including failing to appeal a clearly erroneous decision rendered by the CZICB in regard to the Delaware Terminal Company, issued February 12, 2004; and the recent illegally negotiated settlement with the Premcor Refinery, issued January 25, 2005."

The Board determined that the *pro se* appellants were not "aggrieved" by the Secretary's decision within the meaning of the statute. By a vote of 5-0 with the Chair abstaining, the Board granted the motions to dismiss.

On March 16, 2005, the Delaware Chapter of Sierra Club, Delaware Chapter of the Audubon Society and Delaware Nature Society filed a joint Motion to Intervene together with a Motion for the Admission *Pro Hac Vice* of Kenneth T. Kristl, Esq., to

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represent them in this matter. On March 17, 2005, John M. Kearney, Maryann McGonegal, Alan Muller and John D. Flaherty filed a Motion to Intervene.

The Board granted the Motion to Admit Mr. Krystl *pro hac vice*.

All proposed interveners conceded that permission to intervene is discretionary with the Board. Mr. Krystl argued, on behalf of his clients, that their intervention is necessary in order to preserve their right meaningfully to appeal a decision of the Board to the Superior Court because any Superior Court appeal is on the record. The Board determined that an adequate record would be created by the existing parties together with any statements and positions the proposed interveners might choose to make as members of the public. By a vote of 5-0, with the Chair abstaining, both motions to intervene were denied.

#### SUMMARY OF THE EVIDENCE AND FINDINGS OF FACT

Before the hearing, the Board had reviewed the record of proceedings below including Crown Landing LLC's Request for a Coastal Zone Status Decision with supporting factual and legal arguments, voluminous public comments, the Assessment and Recommendations of DNREC staff and the Decision dated February 3, 2005, from which the appeal is taken. The application seeks a status decision for a proposed new waterfront gasification facility for receiving and processing of liquefied natural gas (LNG). The proposed construction comprises a docking facility with an approximately 2,000-foot-long trestle pier providing a single berth designed to accommodate ships carrying LNG and a gasification plant located on land. The majority of the pier would be located within the State of Delaware, inside the coastal zone, and the remainder of the construction would be in the State of New Jersey. The application for a status decision

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and the status decision itself relate only to that portion of the proposed construction located in Delaware. The Secretary's decision that the proposed facility is prohibited by the Coastal Zone Act includes his rationale:

I find that your proposed facility represents a prohibited offshore bulk product transfer facility and does not meet the exemption under the bulk product transfer facility definition in that the facility cannot be considered a "manufacturing use" under the Act. Furthermore, I conclude that this facility, as proposed, exhibits characteristics sufficient to deem it a heavy industry, also prohibited under the Act. Finally, the on-shore tanks essential to the operation of the facility are prohibited structures.

The following witnesses were called by Crown Landing:

1. Lauren Segal, the Project Director for the Crown Landing project. Ms. Segal described the overall process of producing usable natural gas. The gas, which could come from wells virtually anywhere in the world, is chilled to liquid phase prior to being loaded onto ships which transport it to facilities such as the one proposed in this matter. Many contaminants of the gas are eliminated by the chilling process. At the proposed docking facility, the chilled liquid would be off-loaded and transferred through cryogenic pipes to tanks located on shore. Within the tanks, the liquid would be circulated. Also on shore, it would be diluted by the addition of small amounts of nitrogen if necessary to adjust the BTU content. The liquid then would be heated to gaseous phase and then pressurized before being transferred to transport pipelines. A small amount of odorizing substance, Mercaptan, necessary for safety, would be added before the gas is transported through the outgoing pipelines. Ms. Segal considers the process occurring after the LNG is removed from the ship to be manufacturing because it changes an unmarketable product into a marketable product.

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Ms. Segal also presented testimony concerning the need for new LNG facilities, specifically in the Mid-Atlantic region, the suitability of the chosen site for an LNG facility and the steps taken by BP (Crown Landing LLC's parent company) to ensure safety of the LNG ships while in the Delaware River and the safety of the facility as a whole.

In response to a question from the Board, Ms. Segal testified that it is her judgment that if the facility for unloading LNG were substantially distant from the proposed site, that site would not be useful as the gasification facility.

2. Laurie J. Beppler, Engineering Manager for the Crown Landing project. Ms. Beppler described, in greater detail, the construction and operation of the proposed facility. Ms. Beppler testified that LNG could not be transported safely overland to the site from an off-loading dock located some distance away. Rather, the dock and the land-based components of the facility must be considered an integrated facility. As had Ms Segal, Ms. Beppler testified that, in her judgment, the proposed site would not be useful as the gasification facility if it were substantially distant from the facility for unloading LNG.

3. Dr. Georges Melhem, Chair and Chief Engineer of ioMosaic Corporation, a company specializing in safety consulting services. Dr. Melhem testified that the product going into the distribution pipelines from the proposed facility would be a new product, not the same product that was on the ship, and therefore the onshore component meets the definition of a manufacturing facility.

Dr. Melhem also testified as to the similarities and differences between the proposed facility and one located on adjacent land. The adjacent facility, the Logan

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(formerly "Keystone") cogeneration plant, received a permit under the Act for a docking facility for the off-loading of coal that is subsequently burned to produce electricity. Dr. Melhem testified that the Logan facility has more characteristics of heavy industry than would the proposed Crown Landing facility and, therefore, he concludes that the proposed facility is not heavy industry.

4. Dr. William Fagerstrom, a professor in the Mechanical Engineering Department at the University of Delaware. Dr. Fagerstrom teaches a course in manufacturing and testified that, according to the definitions used in his class, the onshore component of the proposed Crown Landing construction is manufacturing. In particular, Dr. Fagerstrom pointed out that the nitrogen used to dilute the LNG is "manufactured" on site.

5. David Blaha, of Environmental Resources Management Group, Inc., an expert in evaluating the potential environmental impact of projects. He emphasized the superiority of LNG as a fuel, the greater potential for pollution of the Logan cogeneration plant and the appropriateness of the site selected for the Crown Landing facility, primarily because the facility could use waste heat from the Logan cogeneration plant.

DNREC called Dr. Stanley I. Sandler as its only witness. Dr. Sandler gave a written statement as well as live testimony. Dr. Sandler testified that the onshore component of the proposed facility would not manufacture a new product or transform in any significant way the natural gas off-loaded from a ship at the dock. To the extent that natural gas is processed in a meaningful context, that processing occurs at the well head as the gas is captured and chilled. The gas that would leave the ship at the dock is essentially the same product that would enter the distribution pipelines.

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At least eleven members of the public were heard by the Board. Most of the testimony of these speakers was directed to the dangers, real or perceived, of an LNG facility and ships carrying LNG up the Delaware River due to vulnerability to intentional attack, catastrophic accident or other failures. In addition, many speakers' comments concerned negative impacts on neighboring communities such as the impact on recreation and on business efficiency.

One witness argued that the proposed facility is essentially identical to the Logan facility, is a necessary addition to the economy of the region and will ensure the availability of natural gas essential to the production of electricity as well as growth of important industry in the region. The possibility of as many as fifty new jobs in the region was mentioned.

Every witness who addressed the issue testified that the onshore component of the proposed construction includes some but not all characteristics of a "heavy industry" as defined by the Act. The evidence as a whole reveals a significant and unresolved issue as to the safety and potential to pollute of the facility and its ships which are essential to the operation of the facility.

The Board finds, as a matter of fact, that the onshore component of the proposed facility is not a "manufacturing" facility. Rather, the facility is a single, integrated facility the onshore component of which exists solely to support the offshore component. The real sole purpose of the proposed facility is to serve as a bulk product transfer facility. Furthermore, the proposed facility has many of the characteristics of heavy industry and there remain significant questions regarding the potential impact on adjacent communities.

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### CONCLUSIONS OF LAW

Both the provisions of the Coastal Zone Act (7 Del. C. Chapter 70), ("the Act") and the Regulations Governing Delaware's Coastal Zone adopted May 11, 1999, as amended, ("Regulations") are binding on this Board.

Section 7003 of the Act absolutely prohibits new bulk product transfer facilities in the coastal zone. The proposed construction is a bulk product transfer facility as defined by § 7002 of the Act unless it qualifies for the exception found in the second sentence thereof: "Not included in this definition is a docking facility or pier for a single industrial or manufacturing facility for which a permit is granted or which is a nonconforming use."<sup>1</sup> The Regulations clarify this exception:

The following uses or activities are permissible in the Coastal Zone by permit. Permits must be obtained prior to any land disturbing or construction activity.

1. The construction of pipelines or docking facilities serving as offshore bulk product transfer facilities if such facilities serve only one on-shore manufacturing or other facility. To be permissible under these regulations, the materials transferred through the pipeline or docking facilities must be used as a raw material in the manufacture of other products, or must be finished products being transported for delivery.

Regulations, § F.1.

Thus construction that otherwise would be prohibited as a bulk product transfer facility is permissible if it includes two distinct components: (1) a docking facility or pier or pipelines and (2) one single permitted on-shore manufacturing or other facility which

<sup>1</sup> Although the onshore part of the proposed construction is to be located in New Jersey and, therefore, is not eligible for a permit under the Act, the Board considers the nature of the entire construction for purposes of this decision and considers a facility which would be eligible for a permit if located in Delaware to be a "facility for which a permit is granted. . . ."

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is served by the docking facility or pier or pipelines. "Docking Facility" is defined in the

Regulations as follows:

6. "Docking Facility" means any structures and/or equipment used to temporarily secure a vessel to a shoreline or another vessel so that materials, cargo, and/or people may be transferred between the vessel and the shore, or between two vessels together with associated land, equipment, and structures so as to allow the receiving, accumulating, safekeeping, storage, and preparation of cargoes for further shipment, and administrative maintenance purposes directly related to such receiving, accumulating, safekeeping, storage, and preparation of cargoes for further shipment.

Regulations, § C.6.

The construction would be prohibited if the onshore component is heavy industry, since all new heavy industry is prohibited and ineligible for a permit. The Act defines

"heavy industry" at § 7002(e) as follows:

"Heavy industry use" means a use characteristically involving more than 20 acres, and characteristically employing some but not necessarily all of such equipment such as, but not limited to, smokestacks, tanks, distillation or reaction columns, chemical processing equipment, scrubbing towers, pickling equipment and waste-treatment lagoons; which industry, although conceivably operable without polluting the environment, has the potential to pollute when equipment malfunctions or human error occurs. Examples of heavy industry are oil refineries, basic steel manufacturing plants, basic cellulosic pulp-paper mills, and chemical plants such as petrochemical complexes. An incinerator structure or facility which, including the incinerator, contains 5,000 square feet or more, whether public or private, is "heavy industry" for purpose of this chapter. Generic examples of uses not included in the definition of "heavy industry" are such uses as garment factories, automobile assembly plants and jewelry and leather goods manufacturing establishments, and on-shore facilities, less than 20 acres in size, consisting of warehouses, equipment repair and maintenance structures, open storage areas, office and communications buildings, helipads, parking space and other service or supply structures required for the transfer of materials and workers in support of off-shore research, exploration and development operations; provided, however, that on-shore facilities shall not include tank farms or storage tanks.



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DNREC and several public speakers argue that the Logan/Keystone cogeneration permit is not applicable precedent since that permit allowed the construction of a docking facility to serve an onshore component which properly is considered a manufacturing facility in that it consumes the off-loaded product (coal) and produces a different product (electricity) for distribution. In contrast, the proposed Crown Landing docking facility would serve an onshore component which would produce for distribution the same product (natural gas) that is off-loaded at the docking facility. DNREC argues that the more relevant precedent, cited by several public speakers, is the 1972 denial of a permit to El Paso Eastern Company for the construction of a pier in Delaware waters serving an LNG terminal in New Jersey. That denial, which was decided early in the history of the Act and predated the adoption of the Regulations, cites an analysis of the Act from the Attorney General which states, in part:

It is quite clear that the legislative intent was to permit docking facilities where such facilities would benefit such industries as would be granted permits to operate in the Coastal Zone. Here the situation is reversed. The terminal will only exist as an adjunct to the docking facility. In other words, the important part of the project to El Paso Eastern is not the 'industrial facility' but the docking facility.

The Board finds a similar analysis applies to the proposed Crown Landing construction. Having found that the proposed construction is a single integrated facility for the bulk transfer of natural gas, the Board concludes, as a matter of law, that the entire proposed facility is a docking facility which does not support a manufacturing or other facility. Consequently, the proposed construction is absolutely prohibited by the Act and no permit therefor may be issued.

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BOARD'S DECISION

For the foregoing reasons, the Board, by a unanimous vote of the six members present, affirms the Secretary's decision and finds that the proposed construction is a use absolutely prohibited by the Coastal Zone Act.

Date: \_\_\_\_\_

\_\_\_\_\_  
Christine M. Waisanen  
Chair

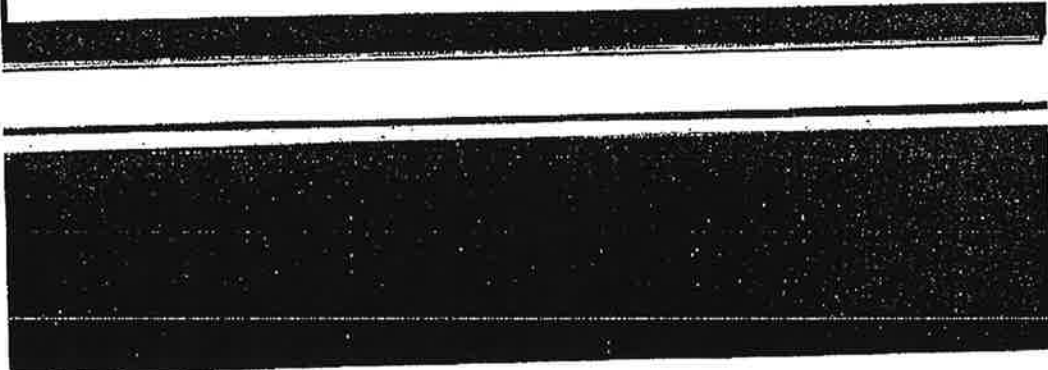
Coastal Zone Industrial Control Board  
Appeal CZ 2005-01

BOARD'S DECISION

For the foregoing reasons, the Board, by a unanimous vote of the six members present, affirms the Secretary's decision and finds that the proposed construction is a use absolutely prohibited by the Coastal Zone Act.

Date: 4/11/05

  
Christine M. Walsara  
Chair

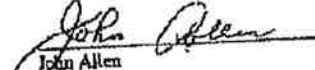


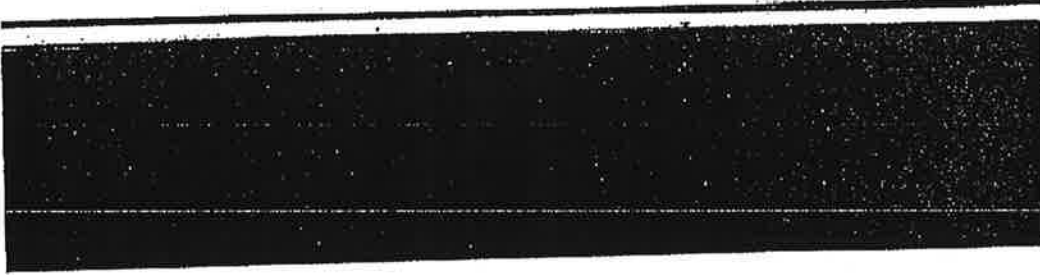
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Appeal CZ 2005-01

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John Allen  
Board Member



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Paul Bell  
Paul Bell  
Board Member



DE07737

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Appeal CZ 2005-01

Date: 4/14/05



Victor Singer  
Board Member







## **SANDIA REPORT**

SAND2004-6258  
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Printed December 2004

# **Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water**

Mike Hightower, Louis Gritzko, Anay Luketa-Hanlin, John Covan, Sheldon Tieszen, Gerry Wellman, Mike Irwin, Mike Kaneshige, Brian Melof, Charles Morrow, Don Ragland

Prepared by  
Sandia National Laboratories  
Albuquerque, New Mexico 87185 and Livermore, California 94550  
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Unlimited Release

Printed December 2004

## **Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water**

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### **Abstract**

While recognized standards exist for the systematic safety analysis of potential spills or releases from LNG (Liquefied Natural Gas) storage terminals and facilities on land, no equivalent set of standards or guidance exists for the evaluation of the safety or consequences from LNG spills over water. Heightened security awareness and energy surety issues have increased industry's and the public's attention to these activities. The report reviews several existing studies of LNG spills with respect to their assumptions, inputs, models, and experimental data. Based on this review and further analysis, the report provides guidance on the appropriateness of models, assumptions, and risk management to address public safety and property relative to a potential LNG spill over water.

### 5.1.1 Evaluation of the Fire Hazard of an Intentional LNG Spill

In order to determine the general range of hazard levels and to provide a demonstration of how hazard zones can be delineated, the following analysis was performed, the details of which are described in Appendix D.

As stated in Section 4, in most of the scenarios identified, the thermal hazards from an intentional spill are expected to manifest as a pool fire, based on the high probability that an ignition source will be available from most of the events identified. Based on a detailed review of the existing experimental literature presented in Appendix C, nominal fire modeling parameters were used to calculate the expected thermal hazards from a fire for the intentional breach scenarios developed. The same modeling approach and assumptions as discussed in Section 4 were used for these analyses. While the details of the analyses are presented in Appendix D, a summary of these results is shown in Table 14, where the distances to 37.5 kW/m<sup>2</sup> and 5 kW/m<sup>2</sup> are from the center of the pool.

**Table 14: Intentional Breach — Effect of Parameter Combinations on Pool Diameter**

HOLE SIZE (m <sup>2</sup> )	TANKS BREACHED	DISCHARGE COEFFICIENT	BURN RATE (m <sup>3</sup> /s)	SURFACE RELEASE POWER (kW/m <sup>2</sup> )	POOL DIAMETER (m)	BURN TIME (min)	DISTANCE TO 37.5 kW/m <sup>2</sup> (m)	DISTANCE TO 5 kW/m <sup>2</sup> (m)
2	3	6	3 x 10 <sup>-4</sup>	220	209	20	250	784
2	3	6	3 x 10 <sup>-4</sup>	220	572	8.1	630	2118
5	1	6	8 x 10 <sup>-4</sup>	220	330	8.1	391	1305
5	1	9	3 x 10 <sup>-4</sup>	220	405	5.4	478	1579
5	1	6	2 x 10 <sup>-4</sup>	220	395	8.1	454	1538
8	1	6	3 x 10 <sup>-4</sup>	350	330	8.1	529	1652
12	1	6	3 x 10 <sup>-4</sup>	220	512	3.4	602	1920

\*nominal case

The results presented in Table 14 show that the thermal hazards of 37.5 kW/m<sup>2</sup> are expected to occur within approximately 500 m of the spill for most of the scenarios evaluated. For the 2 m<sup>2</sup> three-hole breach, it was assumed that individual pools would form; whereas, for the 5 m<sup>2</sup> three-hole breach, a single pool was assumed to form. The release from the three holes was considered to happen simultaneously. It should be noted that these conditions consider cascading damage resulting from fire or cryogenic-induced failure.

Most of the studies reviewed assume that a single, coherent pool fire can be maintained for very large pool diameters. This would be unlikely due to the inability of air to reach the interior of a fire and maintain combustion on an LNG pool that size. Instead, the flame pool envelope would break up into multiple pool fires (herein: 'flamelets'), the heights of which are much less than the fuel bed diameter used in the calculations by the four previously discussed studies. This breakup into flamelets results in a much shorter flame height than that assumed for a large pool diameter. In reality, L/D (height/pool diameter) would probably be much smaller than that assumed by the correlations in many studies, which predict an L/D ratio between 1.0 and 2.0. A more realistic ratio could be less than 1.0 [Zukoski 1986] [Corlett 1974] [Cox 1985].

Because the heat radiated by the flamelets would be far less than the heat radiation calculated in the many studies (based on a large pool fire), the amount of radiative heat flux that an adjacent object receives would be less, thereby decreasing the size of the thermal hazard zone. As discussed in Appendix D, the use of a mass fire assumption could reduce hazard distances for large spills. The development of fire whirls might increase the hazard zone. Therefore, this type of pool fire model should be carefully considered to improve thermal hazards analysis from potential large spills.

The results presented suggest that the potential thermal hazards for large spills can vary significantly, based on the uncertainty associated with potential spill sizes, dispersion variations, and threats. Based on the estimated pool size for large spills, even with the possibility of reduction in effects for mass fires as opposed to single pool fires, high thermal hazards approaching  $37.5 \text{ kW/m}^2$  could probably extend to approximately 500 meters. The thermal hazards between 500 meters and 1600 meters decrease significantly. The hazards would be low, approximately  $5 \text{ kW/m}^2$  beyond 1600 m from even a large spill. Based on these observations, approximate hazard zones seem to exist between 0 – 500 m, 500 – 1600 m, and over 1600 m, and were used to develop guidance on managing risks for LNG spills.

### **5.1.2 Evaluation of Vapor Dispersion Hazard of Intentional LNG Spills**

In most of the scenarios identified, the thermal hazards from a spill are expected to manifest as a pool fire, based on the high probability that an ignition source will be available from most of the events identified. In some instances, such as an intentional spill without a tank breach, an immediate ignition source might not be available and the spilled LNG could, therefore, disperse as a vapor cloud. For large spills, the vapor cloud could extend to more than 1600 m, depending on spill location and site atmospheric conditions. In congested or highly populated areas, an ignition source would be likely, as opposed to remote areas, in which an ignition source might be less likely.

As mentioned in Section 4, the impact from a vapor cloud dispersion and ignition from a large spill can extend beyond 1600 meters, based on our review of external data discussed in Appendix C. This suggests that LNG vapor dispersion analysis should be conducted using site-specific atmospheric conditions, location topography, and ship operations to assess adequately the potential areas and levels of hazards to public safety and property. Consideration of risk mitigation measures, such as development of procedures to quickly ignite a dispersion cloud and stem the leak, if conditions exist that the cloud would impact critical areas.

If ignited close to the spill, and early in the spill, the thermal loading from the vapor cloud ignition might not be significantly different from a pool fire, because the ignited vapor cloud would burn back to the source of liquid LNG and transition into a pool fire. If a large vapor cloud formed, the flame could propagate downwind, as well as back to the source. If the cloud is ignited at a significant distance from the spill, the thermal hazard zones can be extended significantly. The thermal radiation from the ignition of a vapor cloud can be very high within the ignited cloud and, therefore, particularly hazardous to people.

In order to obtain LNG dispersion distances to LFL for intentional events, calculations were performed using VULCAN, as discussed in Section 4. A low wind speed and highly stable

atmospheric condition were chosen because this state has shown to result in the greatest distances to LFL from experiment, and thus should be the most conservative. A wind speed of 2.33 m/s at 10 m above ground and an F stability class were used for these simulations. For intentional events, two cases were run, one for the nominal case of a 5-m<sup>2</sup> hole and one tank breach, and the other for a 5-m<sup>2</sup> hole and three tanks breached. This case is the largest spill; hence, it should give the greatest LFL for intentional events. As indicated in Table 15, the dispersion distance to LFL for intentional events might extend from nominally 2500 m to a conservative maximum distance of 3500 m for this unlikely event.

While previous studies have addressed the vapor dispersion issue from a consequence standpoint only, the risk analysis performed as part of this study indicates that the potential for a large vapor dispersion from an intentional breach is highly unlikely. This is due to the high probability that an ignition source will be available for many of the initiating events identified, and because certain risk reduction techniques can be applied to prevent or mitigate the initiating events identified. The significant distances, though, of a potential vapor dispersion suggest that LNG vapor dispersion analysis and risk mitigation measures should be carefully considered to protect adequately both the public and property.

**Table 15: Dispersion Distances to LFL for Intentional Spills**

HOLE SIZE (m <sup>2</sup> )	TANKS BREACHED	FOUL DIAMETER (m)	SPILL DURATION (min)	DISTANCE TO LFL (m)
5	1	330	8.1	2450
5	3	572	8.1	3614

The analyses from the fire and vapor dispersion calculations suggest that high thermal hazards from intentional events extend significantly from the spill location. Table 16 summarizes the general impacts on both public safety and property for intentional breaches and spills. In this table, high impact would include a thermal intensity in the range of 37.5 kW/m<sup>2</sup> and low values would correspond to thermal intensities in the range of 5 kW/m<sup>2</sup>.

These results should be used as guidance, bearing in mind that these distances will vary, based on site-specific factors and environmental conditions.

Table 16: Estimated Impact of Intentional LNG Breaches & Spills on Public Safety & Property

EVENT	POTENTIAL SHIP DAMAGE AND SPILL	POTENTIAL HAZARD	POTENTIAL IMPACT ON PUBLIC SAFETY*		
			0-500 m	500-1000 m	>1000 m
Incident Onboard or Bunkering	Intentional, 2-7 m <sup>2</sup> breach and medium to large spill	<ul style="list-style-type: none"> <li>Large fire</li> <li>Damage to ship</li> <li>Fireball</li> </ul>	High	Medium	Low
	Intentional, large release of LNG	<ul style="list-style-type: none"> <li>Large fire</li> <li>Damage to ship</li> <li>Vapor cloud fire</li> </ul>	High	Medium	Low
Attack on Ship	Intentional, 2-12m <sup>2</sup> breach and medium to large spill	<ul style="list-style-type: none"> <li>Large fire</li> <li>Damage to ship</li> <li>Fireball</li> </ul>	High	Medium	Low

\* Distance to spill origin, varies according to site  
 Very low – little or no property damage or injuries  
 Low – minor property damage and minor injuries  
 Medium – potential for injuries and property damage  
 High – major injuries and significant damage to structures







STATE OF DELAWARE  
 DEPARTMENT OF NATURAL RESOURCES &  
 ENVIRONMENTAL CONTROL  
 DIVISION OF WATER RESOURCES  
 89 KINGS HIGHWAY  
 DOVER, DELAWARE 19901

WETLANDS & SUBAQUEOUS  
 LAND SECTION

TELEPHONE (302) 739-4691  
 FACSIMILE (302) 739-6304

Subaqueous Lands Lease No.: SL-312/04  
 Associated Water Quality Certification: WQC-313/04  
 Date of Issuance: 5/10/05  
 Construction Expiration Date: 5/10/08  
 Amended Date:

**SUBAQUEOUS LANDS LEASE/WATER QUALITY CERTIFICATION  
 GRANTED TO FENWICK COMMONS LLC., TO CONSTRUCT A 40 FOOT WIDE BY 750  
 FOOT LONG PIER, A 6 FOOT WIDE BY 95 FOOT LONG ALUMINUM GANGWAY, A 28  
 FOOT WIDE BY 120 FOOT LONG FLOATING DOCK AND BREAKWATER, 6 SUPPORT  
 PILINGS, 1255 LINEAR FEET OF STEEL BULKHEAD AND TO FILL APPROXIMATELY  
 1882 SQUARE FEET OF PUBLIC SUBAQUEOUS LANDS AT THE PENNS GROVE  
 RIVERFRONT AND PIER, END OF WEST MAIN STREET,  
 PENNS GROVE, NEW JERSEY**

Fenwick Commons, L.L.C.,  
 c/o Cresse & Carr  
 39 Cooper Street  
 Woodbury, N.J. 08070

Pursuant to the provisions of 7 Del. C., 7203, the Department's Regulations Governing the Use of Subaqueous Lands, and Section 401 of the Clean Water Act and the Department's Regulations Governing the Control of Water Pollution, permission is hereby granted on this 10<sup>th</sup> day of May A.D. 2005, to construct the above-referenced structure in accordance with the approved plans, (12 sheets), as approved on March 9, 2005, and application dated 7/13/04 and received by this Division on 7/22/04.

WHEREAS, the State of Delaware is the owner of ungranted subaqueous lands lying beneath the waters of Delaware Bay;

WHEREAS, Fenwick Commons LLC., has applied for permission to refurbish and construct a pier, gangway, dock with breakwater, 6 support pilings, 1255 linear feet of bulkhead and to fill approximately 1822 square feet of public subaqueous lands; and

WHEREAS, pursuant to the provisions of 7 Del. C. 7203, the Secretary of the Department of Natural Resources and Environmental Control through his duly authorized representative finds that it is not contrary to the public interest if this project is approved subject to the terms and conditions herein set forth.

*Delaware's good nature depends on you!*

WHEREAS, in accordance with Section 401 of the Clean Water Act, the State of Delaware, by and through the Department of Natural Resources and Environmental Control, certifies that the permitted activity will be conducted in a manner which will not violate the applicable water quality standards of the State of Delaware subject to the terms and conditions of this approval;

This Subaqueous Lands Lease/Water Quality Certification is issued subject to the following conditions:

THIS approval is in accordance with the plan and application submitted to the Department of Natural Resources and Environmental Control, a copy of which is attached hereto and made a part hereof.

THIS Lease shall be continued for a period of twenty (20) years or so long as the conditions attached to the Lease are adhered to, whichever is the shorter in time. Upon the expiration of the twenty-year term, this Lease shall expire and become null and void, unless prior thereto the lessee shall have applied for and received a renewal of this Lease. A renewal may be denied if the State determines that the Lease is no longer in the public interest.

THIS Lease is issued subject to the following conditions:

#### **SPECIAL CONDITIONS**

1. The conditions contained herein shall be incorporated into any and all construction contracts and other ancillary documents associated with earth disturbance and any other activities directly or indirectly associated with construction which may impact subaqueous lands associated with this project. The lessee and contractor are responsible to ensure that the workers executing the activities authorized by this Lease/Water Quality Certification have full knowledge of, and abide by, the terms and conditions of this Lease/Water Quality Certification.
2. **No portion of the decking on any dock or pier authorized by this Lease shall exceed the width dimensions for that structure identified on Page One of this Lease/Water Quality Certification.**
3. **During the twenty-year term of this Lease/Water Quality Certification the lessee shall agree to pay the State of Delaware the sum of \$ 50.00 per annum for a total of \$ 1,000.00 for the 1050 square feet of filled public subaqueous lands utilized for the replacement bulkhead. The payment for this Lease shall be submitted to the Department with the signed and notarized Lease documents.**

4. The current leased area of structure over public subaqueous lands is 34,980 square feet represented by the 40 foot by 750 foot section of pier, a 6 foot by 95 foot gangway, a 28 foot by 120 foot floating dock/breakwater, and 1050 square feet of filled Public Subaqueous Lands constructed channelward of the mean low water line.
5. A turbidity curtain shall be utilized to minimize sediment loss into the Delaware Bay during the bulkhead replacement.
6. All material associated with the proposed project and included in the above-referenced plans shall be clean and free from oils, grease, asphalt, and other contaminants.
7. The bulkhead shall follow the existing bulkhead alignment and shall be installed as close as practicable to the existing bulkhead, not to exceed 12 inches channelward from the bulkhead face.
8. The structure shall be maintained in such a manner so as not to violate the State of Delaware Department of Natural Resources and Environmental Control "Surface Water Quality Standards," as amended August 11, 1999.
9. Erosion and sediment control measures shall be implemented in accordance with the specifications and criteria in the Delaware Erosion and Sediment Control Handbook (1989), so as to minimize entry and dispersal of sediment and other contaminants in surface waters.
10. This Lease/Water Quality Certification does not authorize any additional repairs, additions, or modifications to the existing structures authorized herein. Such activities require separate written authorization from the Department of Natural Resources and Environmental Control.
11. The approved structures shall be constructed in a manner so as not to impair water access to the adjoining property.
12. All construction debris, excavated material, brush, rocks, and refuse incidental to construction of the leased structure shall be placed above the influence of surface waters.
13. The work authorized by this permit is subject to the terms and conditions of the attached Department of the Army Permit CENAP-OP-R-200401071-39.
14. The structures on/or adjacent to subaqueous lands shall be for the explicit purpose of refurbishing a historic pier for pedestrian access, emergency vehicle access, and for berthing up to 4 large vessels for public and emergency use, and for island stabilization as stated in the application.

### GENERAL CONDITIONS

1. The project is to be undertaken in accordance with the plans submitted and attached hereto. Any activities not specifically authorized herein may require a supplemental approval from this office prior to the initiation of construction. A determination on the need for a supplemental approval will be made by this office pursuant to the lessee submitting written notification and revised plans indicating project changes to this office.
2. Representatives of the Department of Natural Resources and Environmental Control may inspect such work during any phases of the construction and may collect any samples or conduct any tests that are deemed necessary.
3. This Lease/Water Quality Certification does not cover the structural stability of the project units.
4. Prior to the expiration of this Lease/Water Quality Certification, the lessee shall remove all structures covered under this Lease/Water Quality Certification unless the Lease/Water Quality Certification has been renewed in accordance with its terms.
5. Any actions, operations or installations which are considered by the Department to be contrary to the best interests of the public may constitute reason for the discontinuance and/or removal of said action, operation or installation.
6. The lessee shall maintain any structure on public subaqueous lands in good and safe condition and will protect and save the State of Delaware harmless from any loss, cost or damage by reason of said structures.
7. The issuance of this Lease/Water Quality Certification does not imply approval of any other part, phase, or portion of any overall project the lessee may be contemplating.
8. This Lease/Water Quality Certification shall not be construed to grant or confer any right, title, easement, or interest in, to, or over any land belonging to the State of Delaware other than that of a tenant.
9. This Lease/Water Quality Certification is subject to the terms and conditions contained in any easement, license or lease that may have been granted by the State or any political subdivision, board, commission or agency of the State in the vicinity of the leased premises.
10. This Lease/Water Quality Certification shall expire if the project has not been completed within three (3) years from the date of issuance.


11. This Lease/Water Quality Certification is granted for the purposes as stated herein. Any other use without prior approval shall constitute reason for this Lease/Water Quality Certification being revoked.
12. This Lease/Water Quality Certification is not assignable or transferable without the prior written consent of the Department. Prior to the transfer of the property, it is the responsibility of the lessee to provide the new owner with a copy of the Lease/Water Quality Certification or to remove all structures. Prior to property conveyance, the lessee must also notify the Department of the change in ownership.
13. The lessee shall at all times comply with all applicable laws and regulations of the Department of Natural Resources and Environmental Control.
14. The issuance of this Lease/Water Quality Certification does not constitute approval for any of the activities as may be required by any other local, state or federal governmental agency.
15. Application for renewal must be submitted six (6) months prior to the expiration date of this Lease/Water Quality Certification.
16. This Lease/Water Quality Certification may be revoked upon violation of any of the above conditions.

IN WITNESS WHEREOF, I, George E. Kearns, III, has caused this instrument to be executed on this  
16<sup>th</sup> day of May, 2005.

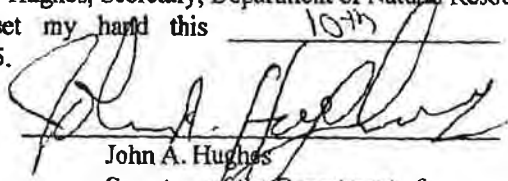
**JOAN E. CICK**  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires Mar 10, 2007

By   
(Lessee) George E. Kearns, III

(Notary Seal)

  
Notary Public

IN WITNESS WHEREOF, I, John A. Hughes, Secretary, Department of Natural Resources and  
Environmental Control, have hereunto set my hand this 10<sup>th</sup> day of  
May, 2005.

  
John A. Hughes  
Secretary of the Department of  
Natural Resources and  
Environmental Control

*Final Environmental Impact Statement*

**Crown Landing LNG and  
Logan Lateral Projects**

**Crown Landing LLC  
Texas Eastern Transmission, LP**  
Docket Nos. CP04-411-000 and CP04-416-000  
FERC/EIS – 0179



**Federal Energy Regulatory Commission**  
Office of Energy Projects  
Washington, DC 20426



**Cooperating Agencies**



**April 2006**





*Final Environmental Impact Statement*

Volume I

**Crown Landing LNG and  
Logan Lateral Projects**

**Crown Landing LLC  
Texas Eastern Transmission, LP**

FERC/EIS – 0179

Docket Nos.: CP04-411-000  
CP04-416-000

**Federal Energy Regulatory Commission**  
Office of Energy Projects  
Washington, DC 20426

April 2006

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## ACRONYMS AND ABBREVIATIONS

AADT	average annual daily traffic
ABSG	ABSG Consulting Inc.
ACEEE	American Council for an Energy-Efficient Economy
ACHP	Advisory Council on Historic Preservation
AMSC	Delaware Bay Area Maritime Security Committee
APE	area of potential effects
AQCRs	Air Quality Control Regions
ASSRT	Atlantic Sturgeon Status Review Team
AST	aboveground storage tank
ATSDR	Agency for Toxic Substances and Disease Registry
BA	biological assessment
BACT	Best Available Control Technology
Bcfd	billion cubic feet per day
BG LNG	BG LNG Services, L.L.C.
BP	BP Energy Company
Btu	British thermal unit
Btu/ft <sup>2</sup> -hr	British thermal units per square foot per hour
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CAFRA	Coastal Area Facility Review Act
CDC	certain dangerous cargoes
CEII	Critical Energy Infrastructure Information
CEQ	Council on Environmental Quality
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
Certificate	Certificate of Public Convenience and Necessity
CFR	Code of Federal Regulations
ChevronTexaco	ChevronTexaco Corporation
Class I	Mandatory Federal Class I
cm	centimeters
CMP	Coastal Management Program
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
Coast Guard	U.S. Coast Guard
COC	Certificate of Compliance
COE	U.S. Army Corps of Engineers
COI	Coast Guard Certificate of Inspection
Columbia Gas Commission	Columbia Gas Transmission Company Federal Energy Regulatory Commission
CPT	cone penetration tests
CRA	Charles River Associates
Crown Landing	Crown Landing, LLC
CWA	Clean Water Act of 1972
CZMA	Coastal Zone Management Act of 1972
CZMP	Coastal Zone Management Program
DAC	Delaware Administrative Code
dBA	decibels on the A-weighted scale
DCMP	Delaware Coastal Management Program

ACRONYMS AND ABBREVIATIONS (cont'd)

DDT	dichlorodiphenyltrichloroethane
DMT	dilatometer
DNREC	Delaware Department of Natural Resources and Environmental Control
DOD	U.S. Department of Defense
DOE	U.S. Department of Energy
Dominion	Dominion Cove Point LNG, LP
DOT	U.S. Department of Transportation
DP	dynamically positioned
DRBC	Delaware River Basin Commission
DRCS	Delaware River Creel Survey
DSCZA	Delaware State Coastal Zone Act of 1971
EFH	Essential Fish Habitat
EI	Environmental Inspector
EIA	Energy Information Administration
EIS	Environmental Impact Statement
EN 1473	European Standard for LNG facilities
EPA	U.S. Environmental Protection Agency
ESA	Endangered Species Act of 1973
ESS	emergency shutdown system
Excelerate	Excelerate Energy, L.L.C.
F	Fahrenheit
FERC	Federal Energy Regulatory Commission
FERC Plan	FERC's Upland Erosion Control, Revegetation and Maintenance Plan
FERC Procedures	FERC's Wetland and Waterbody Construction and Mitigation Procedures
FPC	Federal Power Commission
FSO	Facility Security Officer
FSRU	Floating, storage, and regasification unit
ft <sup>3</sup>	cubic feet
FWS	U.S. Fish and Wildlife Service
g	gravity
Gas Tanker Code	<i>International Code for the Construction and Equipment of Ships Carrying Liquefied Gases in Bulk</i>
GBS	gravity-based structure
gpm	gallons per minute
GTB	geotechnical boring
HAP	hazardous air pollutant
HCA's	high consequence areas
HDD	horizontal direction drill
hp	horsepower
IMO	International Maritime Organization
kPa	kilopascals
kV	kilovolt
LAER	lowest achievable emission rate
L <sub>day</sub>	daytime sound level
L <sub>dn</sub>	day-night sound level
L <sub>eq(24)</sub>	24-hour equivalent sound level
LFL	lower flammability limit
LNG	liquefied natural gas
L <sub>night</sub>	nighttime sound level

ACRONYMS AND ABBREVIATIONS (cont'd)

LOR	Letter of Recommendation
LPG	Liquefied Petroleum Gas
LUST	leaking underground storage tank
m <sup>3</sup>	cubic meters
m <sup>3</sup> /hr	cubic meters per hour
MACT	Maximum Achievable Control Technology
MARAD	Maritime Administration
MARSEC	Maritime Security
Mc	Made-land/coarse
MCE	Maximum Considered Earthquake
MCS	Management Classification System
Memorandum	Memorandum of Understanding on Natural Gas Transportation Facilities
Mf	Made-land/fine
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
MLLW	mean lower low water
mm	millimeters
MMBtu/hr	million British thermal units per hour
MMcfd	million cubic feet per day
MMI	Modified Mercalli Intensity
MNI	Moffatt & Nichol International
MOA	Memorandum of Agreement
Monitoring and Contingency Plan	Horizontal Directional Drill Monitoring and Contingency Plan
MP	milepost
mph	miles per hour
MSA	Magnuson-Stevens Fishery Conservation and Management Act
NAAQS	National Ambient Air Quality Standards
NAVD	North American Vertical Datum
NEPA	National Environmental Policy Act of 1969
NESHAPs	National Emission Standards for Hazardous Air Pollutants
NFPA	National Fire Protection Association
NFPA 59A	NFPA Standards for the Production, Storage, and Handling of LNG
NGA	Natural Gas Act
NHPA	National Historic Preservation Act
NJAAQS	New Jersey Ambient Air Quality Standards
NJAC	New Jersey Administrative Code
NJAPCA	New Jersey Air Pollution Control Act
NJCMP	New Jersey Coastal Management Program
NJDEP	New Jersey Department of Environmental Protection
NJDFW	New Jersey Division of Fish and Wildlife
NJDOT	New Jersey Department of Transportation
NJSCC	New Jersey Soil Cleanup Criteria
NMFS	National Marine Fisheries Service
NNSR	Nonattainment New Source Review
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NO <sub>2</sub>	nitrogen dioxide

ACRONYMS AND ABBREVIATIONS (cont'd)

NOI	<i>Notice of Intent to Prepare an Environmental Impact Statement for the Proposed Crown Landing LNG Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meeting</i>
Northeast Gateway	Northeast Gateway Energy Bridge L.L.C.
NO <sub>x</sub>	low nitrogen oxides
NPC	National Petroleum Council
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
NSAs	noise sensitive areas
NSPS	New Source Performance Standards
NSR	New Source Review
NVIC	Navigation and Vessel Inspection Circular
NYISO	New York Independent System Operator
O <sub>3</sub>	ozone
OBE	Operating Basis Earthquake
OCPPC	Office of Coastal Planning and Program Coordination
OEP	Office of Energy Projects
OPS	Office of Pipeline Safety
OCRM	Office of Coast and Ocean Resource Management
OWM	Office of Water Management
PADCNR	Pennsylvania Department of Conservation and Natural Resources
PADEP	Pennsylvania Department of Environmental Protection
PADOT	Pennsylvania Department of Transportation
PAFBC	Pennsylvania Fish and Boat Commission
PAH	polycyclic aromatic hydrocarbon
Pb	lead
PCB	polychlorinated biphenyl
PCZMP	Pennsylvania Coastal Zone Management Plan
PEL	Probable Effects Level
PGA	peak ground acceleration
PGS	Pennsylvania Geological Survey
PGW	Philadelphia Gas Works
PM <sub>10</sub>	particulate matter less than 10 microns in diameter
PM <sub>2.5</sub>	particulate matter less than 2.5 microns in diameter
ppb	parts per billion
ppm	parts per million
ppmv	parts per million by volume on a dry basis
ppt	parts per thousand
PSD	Prevention of Significant Deterioration
psig	pounds per square inch gauge
PTE	potential to emit
Quest	Quest Consultants, Inc.
RM	river mile
RNA	Regulated Navigation Area
RPT	rapid phase transition
RSPA	Research and Special Programs Administration
Sandia Report	<i>Guidance on Risk Analysis and Safety Implications of a Large Liquefied Natural Gas (LNG) Spill Over Water</i>

ACRONYMS AND ABBREVIATIONS (cont'd)

SAP	Sampling and Analysis Plan
SB	soil boring
Secretary	Secretary of the Commission
SESC	Soil Erosion and Sedimentation Control
Shell	Shell USA Oil & Gas
SHPO	State Historic Preservation Officer
SIP	state implementation plan
SNG	Southern Natural Gas Company
SO <sub>2</sub>	sulfur dioxide
SOLAS	International Convention for the Safety of Life at Sea
SOTA	state-of-the-art
Southern LNG	Southern LNG, Inc.
SPCC	Spill Prevention, Containment and Countermeasure Plan
SPT	standard penetration tests
SSE	Safe Shutdown Earthquake
Strategy	Strategy to Reduce Ship Strikes of Right Whales
SVOCs	semi volatile organics
Tcf	trillion cubic feet
TEL	Threshold Effects Level
Texas Eastern	Texas Eastern Transmission, LP
TNT	trinitrotoluene
TPH	total petroleum hydrocarbons
tpy	tons per year
Tractabel	Tractabel LNG North America, L.L.C.
Transco	Transcontinental Gas Pipe Line Corporation
Trunkline Gas	CMS Trunkline Gas Company, L.L.C.
Trunkline LNG	CMS Trunkline LNG Company, L.L.C.
TSP	total suspended particulate
TSS	total suspended solids
USC	United States Code
USDA	U.S. Department of Agriculture
USGS	U.S. Geological Survey
UV/IR	ultraviolet/infrared
VOCs	volatile organics
Weeks Marine	Weeks Marine, Inc.
WREN	Water Resources Education Network
WSA	Waterway Suitability Assessment
WSR	Waterway Suitability Report
µg/kg	microgram per kilogram

## EXECUTIVE SUMMARY

This final environmental impact statement (EIS) for the Crown Landing LNG and Logan Lateral Projects has been prepared by the staff of the Federal Energy Regulatory Commission (FERC or Commission) to fulfill the requirements of the National Environmental Policy Act (NEPA) and the Commission's implementing regulations under Title 18, Code of Federal Regulations, Part 380. The purpose of this document is to inform the public and the permitting agencies about the potential adverse and beneficial environmental impacts of the proposed project and its alternatives; and to recommend mitigation measures that would avoid or reduce any significant adverse impact to the maximum extent possible.

The FERC is the federal agency responsible for authorizing applications to construct and operate onshore LNG import and interstate natural gas transmission facilities. The U.S. Coast Guard (Coast Guard) is the federal agency responsible for issuing a Letter of Recommendation (LOR) regarding the suitability of the waterway for LNG marine traffic. The Coast Guard exercises regulatory authority over LNG facilities that affect the safety and security of port areas and navigable waterways under Executive Order 10173; the Magnuson Act (50 United States Code (USC) section 191); the Ports and Waterways Safety Act of 1972, as amended (33 USC section 1221, et seq.); and the Maritime Transportation Security Act of 2002 (46 USC section 701). The Coast Guard is responsible for matters related to navigation safety, vessel engineering and safety standards, and all matters pertaining to the safety of facilities or equipment located in or adjacent to navigable waters up to the last valve immediately before the receiving tanks. The Coast Guard also has authority for LNG facility security plan review, approval and compliance verification as provided in Title 33 Code of Federal Regulations (CFR) Part 105, and siting as it pertains to the management of marine traffic in and around the LNG facility.

The vertical line in the margin identifies text that has been modified in the final EIS and differs from the corresponding text in the draft EIS.

Crown Landing LLC (Crown Landing) proposes to construct and operate a liquefied natural gas (LNG) terminal in New Jersey and Delaware, and Texas Eastern Transmission, LP (Texas Eastern) proposes to construct and operate a new natural gas pipeline and ancillary facilities in New Jersey and Pennsylvania. Crown Landing's proposed facilities would transport a baseload rate of 1.2 billion cubic feet per day (Bcfd) and a maximum rate of 1.4 Bcfd (using spare equipment) of imported LNG to the United States market. Crown Landing proposes to interconnect the LNG facilities onsite with three pipelines. One interconnect would be with the new pipeline that Texas Eastern proposes to construct and operate (i.e., Logan Lateral) between its existing Chester Junction facility in Brookhaven Borough, Pennsylvania to the proposed LNG terminal. The other two interconnects would be with existing pipelines that currently cross the site, one pipeline owned and operated by Columbia Gas Transmission Company (Columbia Gas) and the other pipeline owned and operated by Transcontinental Gas Pipe Line Corporation (Transco).

The LNG terminal and pipeline facilities would include:

- a ship unloading facility with a single berth capable of receiving LNG ships with cargo capacities of up to 200,000 cubic meters (m<sup>3</sup>);
- three 150,000 m<sup>3</sup> (net capacity) full containment LNG storage tanks;



- a closed-loop shell and tube heat exchanger vaporization system, sized for a normal sendout of 1.2 Bcfd;
- various ancillary facilities, including administrative offices, warehouse/maintenance building, main control center, guardhouse, and a pier control room;
- three meter and regulation stations located on the proposed LNG terminal site; and
- approximately 11 miles of 30-inch-diameter natural gas pipeline, a pig launcher and receiver facility at the beginning and end of the pipeline, a mainline valve, and a meter and regulation station at the end of the pipeline.

## PROJECT IMPACTS

The environmental issues associated with construction and operation of the Crown Landing LNG and Logan Lateral Projects are analyzed in this final EIS using information provided by Crown Landing and Texas Eastern and further developed from data requests; field investigations by the Commission staff; literature research; alternative analyses; comments from federal, state, and local agencies; and input from public organizations and individual citizens.

The LNG terminal would be developed on a privately owned 175-acre parcel. Of the 175-acre site, about 39 acres would be permanently developed for the LNG terminal facility and access road. The proposed LNG terminal would also require dredging of up to about 1.24 million cubic yards of sediment from the Delaware River. This dredging would disturb about 30.0 acres of the bed of the river. Construction of the Logan Lateral Project would temporarily affect another 177.3 acres of land. Of this land affected by construction of the pipeline facilities, about 54.1 acres would be retained as permanent right-of-way for the pipeline and 1.8 acres for the aboveground facilities.

Construction and operation of the project would have minimal impact on geologic resources in the project area, and the potential for geologic hazards or other natural events to significantly impact the project is low. The LNG storage tanks and other critical structures at the terminal site would be designed to address predicted ground shaking associated with a seismic event. The proposed LNG terminal site would be protected against storm surge associated with tropical storms of the magnitude that are likely to affect the project area.

Soils at the proposed LNG terminal site consist largely of dredged material that was placed onsite during past dredging of the Delaware River. Crown Landing identified some areas of soil contamination on the site that would require further evaluation. Construction of the LNG facilities would increase the potential for soil erosion on the site and sedimentation in adjacent waterbodies and wetlands. Soils along the pipeline route would also be subject to various impacts, including compaction and erosion. Crown Landing and Texas Eastern would minimize impacts on soils through their implementation of the erosion and sedimentation control measures contained in our *Upland Erosion Control, Revegetation, and Maintenance Plan (Plan)* and *Wetland and Waterbody Construction and Mitigation Procedures (Procedures)*, as well as site-specific Soil Erosion and Sedimentation Control (SESC) Plans.

The estimated 1.24 million cubic yards of sediment dredged to create the berth area for the ship unloading facility would be disposed in an existing upland confined disposal facility. Preliminary chemical analyses of the proposed dredged sediments determined that eight metal contaminants were identified at elevated concentrations. The concentrations of most metals in all samples were below the National Oceanic and Atmospheric Administration (NOAA) Threshold Effects Levels (TEL) indicating that the sediments would not be expected to pose a threat to the aquatic environment. Only the

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December 7, 2004

Honorable John A. Hughes  
Secretary Department of Natural Resources  
and Environmental Control  
89 Kings Highway  
Dover, DE 19901

Re: Request for Coastal Zone Status Decision

DEC 7 AM 9:10

Dear Secretary Hughes:

Attached to this letter is the Request for Coastal Zone Status Decision (the "Request") filed by BP through its wholly owned indirect subsidiary, Crown Landing LLC (the "Applicant"). The Request concerns the proposed construction of a docking facility predominantly within the coastal waters of Delaware, which will exclusively serve a facility for the manufacture of LNG to be located in Logan Township, New Jersey, upland from the docking facility (collectively, the "Project"). Attached you will also find a legal memorandum prepared by this Firm addressing the relative applicability of various provisions of the Coastal Zone Act ("CZA") to the Project.

The essence of the Request, and the legal memorandum which accompanies it, is that the construction of the proposed docking facility is a permissive use under the CZA pursuant to the provisions of § 7002(f) of Title 7 because it exclusively supports a facility which meets the definition of "manufacturing" pursuant to §7002(d). Moreover, and as more fully detailed in both the Request and the legal memorandum, this result obtains even though the upland facility which is supported by the docking facility is situated in New Jersey, because the upland facility is engaging in an activity--manufacturing--which would be permissible under the Act if it were conducted on Delaware soil.

DE20748

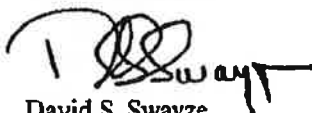
Honorable John A. Hughes  
December 7, 2004  
Page 2

Because the docking facility which is the subject of this Request is in Delaware waters, and the manufacturing facility which it supports is in New Jersey, it is important to align the nomenclature used by the Department in its Status Decision Request form, with the descriptive language used by the Applicant in describing the various components of this Project. In this regard, the Applicant has interpreted the use of the word "Project" on the Department's form as incorporating both components of the facility: *i.e.*, the Manufacturing Facility and the Delaware River Docking Facility. In most instances, however, the Applicant will reference the specific component of the Project for which it seeks this status determination and, ultimately, a permit; to wit, the "Delaware River Docking Facility." Finally, where there are references required in the Request Form to the activities or processes occurring within the State of New Jersey, the Applicant has referenced either the "Upland Facility" or the "Manufacturing Facility." Again, however, it is only the Delaware River Docking Facility which invokes the provisions of the CZA status decision and permitting requirements..

This Request is exclusively addressed to the provisions of the CZA, related Delaware laws, and pertinent regulations. The Applicant reserves all of its rights and claims to challenge as a matter of federal law the enforceability of the CZA with respect to the Project in the appropriate forum and at the appropriate time should that be necessary. However, it is the Applicant's respectful request that you determine that the Delaware River Docking Facility is exempted from the general CZA prohibition on the construction of new bulk product transfer facilities because it exclusively supports a facility which will engage in a permissible manufacturing use

Please advise should you require any additional information or clarification in order to process this Request.

Very truly yours,



David S. Swayze  
DSS:bmh  
enclosure

DE20749

bp



November 30, 2004

The Honorable John Hughes, Secretary  
Department of Natural Resources and Environmental Control  
89 Kings Highway  
Dover, DE 19901  
302-739-5072  
Re: Crown Landing LNG Project Coastal Zone Status Decision

Dear Secretary Hughes:

This letter introduces the Crown Landing LLC application for a Delaware Coastal Zone Status Decision for the Crown Landing LNG Project. The Crown Landing LNG Project is a proposed new waterfront facility that will receive and process liquefied natural gas (LNG) into a useable product. The facility will be constructed, owned, and operated by Crown Landing LLC, a wholly-owned subsidiary of BP America Production Company. The Manufacturing Facility will be located in Logan Township, Gloucester County, New Jersey, with the majority of a supporting Docking Facility extending into Delaware waters. The site is located at approximately River Mile 78 of the Delaware River, adjacent to the Marcus Hook Anchorage. The upland site is currently being leased from its owner, Sun Oil, Inc., and BP has the option to purchase the land.

Crown Landing LLC filed a formal application with FERC on September 16, 2004. Crown Landing LLC currently plans to begin construction in 2005 (assuming all required permits and approvals have been obtained) and begin Project operation in 2008. Crown Landing LLC is filing this application at this time in the interest of maintaining this timeline.

This proposed Project will help achieve several of the Strategies set forth in the Delaware Energy Task Force's Final Report to the Governor titled *Bright Ideas for Delaware's Energy Future*, which addresses issues of energy reliability, demand, cost and environmental impact.

Crown Landing LLC is committed to designing, constructing, and operating a safe and secure facility. The Crown Landing LNG Project is designed in accordance with the requirements of the U.S. Coast Guard's *Waterfront Facilities Handling LNG* (33 CFR 127), U.S. Department of Transportation's (DOT) *Federal Safety Standards for Liquefied Natural Gas Facilities* (49 CFR 193), the National Fire Protection Association's (NFPA) *Standards for the Production, Storage, and Handling of Liquefied Natural Gas* (NFPA 59A), and the Maritime Transportation Safety Act (MTSA).

We respectfully request that the Department of Natural Resources and Environmental Control issue a favorable Status Decision for the Crown Landing LNG Project for the reasons set forth in this Request and the accompanying memorandum of law prepared by Parkowski, Guerke & Swayze, P.A.

Sincerely,

A handwritten signature in cursive script, reading "Lauren Segal", is written over the typed name and title.

Lauren Segal  
Vice President

*Attachments*

DE20758

cc:

Dennis Brown  
David Swayze  
Gregory Roden  
James Busch  
Laurie Beppler



***DEPARTMENT OF NATURAL RESOURCES AND  
ENVIRONMENTAL CONTROL***

**REQUEST FOR A COASTAL ZONE STATUS DECISION**

**Amended August 2004**

DEPARTMENT OF NATURAL RESOURCES & ENVIRONMENTAL CONTROL  
REQUEST FOR A COASTAL ZONE STATUS DECISION

\_\_\_\_\_  
Date Received  
(for Secretary's use)

\_\_\_\_\_  
Project Number  
(for Secretary's use)

IDENTIFICATION OF THE APPLICANT

Name: Crown Landing LLC

Address: 501 West Lake Park Blvd  
Houston, TX 77079

Telephone No.: (281) 366-2259 Fax No.: (281) 366-2753

Site of Proposed Project (if different than above):

Route 130 Logan Township, New Jersey  
Delaware River (roughly River Mile 78)

Contact Person: David Blaha  
Telephone Number: (410) 266-0006

Title: Environmental Consultant  
Fax Number: (410) 266-8912

Contact Person: David Swayze  
Telephone Number: (302) 654-3300

Title: Legal Counsel  
Fax Number: (302) 654-3033

If applicant is not the project owner, but is authorized to act for the owner, state that below and give the owner's name and address. Provide written authorization from client for being the authorized agent for this application.

Crown Landing LLC is the Project owner and is leasing the land from  
Sunoco, Inc.  
1801 Market Street, Philadelphia, PA. 19103-1699

1. Is the applicant claiming confidentiality in any section of their application?

Yes/No No

If yes, applicant must do so in accordance with 29 Del. Code Chapter 100. The Secretary will not automatically honor such requests not in accordance with Chapter 79. Applicant should provide appropriate documentation with this application to assure confidentiality.

PROJECT IDENTIFICATION AND DESCRIPTION

	YES	NO
1.a. Is the proposed project entirely or partly a new or improved or extended pier or other ship docking facility? See Tab 1	<u>X</u>	<u>    </u>
1.b. If yes, will it be used at least in part for bulk cargo transfers by the applicant? If no, please explain what it will handle. See Tab 1	<u>X</u>	<u>    </u>
2.a. Is this project entirely for pollution control purposes?	<u>    </u>	<u>X</u>
2.b. Is this project a new research and development facility?	<u>    </u>	<u>X</u>
2.c. Is this project a new or expanding (flow rate) public sewage/ water plant?	<u>    </u>	<u>X</u>
3.a. Will the proposed project meet the following definition of "Manufacturing" as found in the Coastal Zone Act: "Manufacturing means the mechanical or chemical transformation of organic or inorganic substances into new products, characteristically using power driven machines and materials handling equipment, and including establishments engaged in assembling component parts of manufactured products, provided the new product is not a structure or other fixed improvement." See Tab 1	<u>X</u>	<u>    </u>
3.b. If no to questions 3.a., explain what kind of activity will be carried out at this project site.	<u>    </u>	<u>    </u>
4. Will the project have the following equipment or facilities?		
Smoke stacks	<u>X</u>	<u>    </u>
Tanks	<u>X</u>	<u>    </u>
Distillation or reaction columns	<u>X</u>	<u>    </u>
Chemical processing equipment	<u>    </u>	<u>X</u>
Scrubbing towers	<u>    </u>	<u>X</u>
Pickling equipment	<u>    </u>	<u>X</u>
Waste treatment lagoons	<u>    </u>	<u>X</u>
Smelters	<u>    </u>	<u>X</u>
Incinerators	<u>    </u>	<u>X</u>
See Tab 2		
5. Will the project use 20 acres or more? If not, how many acres will it use? <u>19 acres in Delaware for the pier and ship berth</u>	<u>    </u>	<u>X</u>



YES NO

6.a. Does this facility appear in Appendix B of the Coastal Zone Act Regulations (the list of the nonconforming uses)?  
If not, proceed to question 7a.

\_\_\_ X

6.b. If so, will the proposed activity described in this application occur entirely within the lines delineating the area of nonconformity for this site as seen in the Appendices of the Regulations?

NA

6.c. If the proposed activity, or use, will straddle this line, describe what equipment, facilities, or machinery will be within the delineated area of nonconformity AND what will be out of this area of nonconformity.

NA

7.a. Is the proposed use part of a manufacturing use that was in operation prior to and on June 28, 1971?

\_\_\_ X

7.b. Has this facility ever been granted a Coastal Zone Act Permit?  
If so, when? \_\_\_\_\_

\_\_\_ X

7.c. Name of prior applicant/permittee if different from present applicant/permittee: \_\_\_\_\_

NA

8. Does the new or expanded use involve any change in existing:  
processes?  
facilities?  
buildings?  
emissions discharge

\_\_\_ X  
\_\_\_ X  
\_\_\_ X  
\_\_\_ X

If yes, please explain on a separate page.

**Because this is a new facility, it will not involve any change in existing processes, facilities, buildings, or emissions discharges.**

9.a. Will this project directly or indirectly increase plant production over present capacity?

N/A

9.b. If yes, explain in what way and by how much.

9.c. Will this project directly or indirectly produce any new products at this facility over the current product line?

N/A

If so, list them here or on an attachment.

**The proposed Project will be a new facility, and, therefore, does not have any current capacity or product line.**

10. List materials and/or ingredients to be utilized by this proposed project and how they will get to the site.

**See Tab 3**

11. Attach a concise but complete description of the proposed project, or use and how it relates to any existing manufacturing operations and facilities (if this is not for an entirely new manufacturing plant). Explain what effects there will be on land use acreage, manufacturing production capacity, modification of current product line(s), and any safety risks to the public and company employees.

**See Tab 4**

12. Is this project, or use, a complete, single project, or is it part of a long-term, large-scale project that has other components to it that may need approval under the Coastal Zone Act at a later date? If it is part of a larger project, describe the entire project on a separate attachment and mention ALL major machinery, facilities, land, products, and processes involved.

**This Project would be constructed as a single, complete project. At present, no other components are planned that would require approval under the Delaware Coastal Zone Act at a later date.**

13. Provide a detailed and accurate summary of the proposed project's effects on local surface and ground water quality, surface and groundwater withdrawals, air quality, habitat loss, solid and hazardous waste, noise, odors, and any other pertinent information about the proposed project's effects on the local environment. Provide a statement on how this proposed project will affect the local aesthetic quality.

**See Tab 5**

14. Provide a detailed statement describing the proposed project's potential to pollute should equipment malfunction or human error occur, including a description of backup controls and safety provisions.

**See Tab 6**

15. Provide a map of appropriate scale to clearly show important natural features and project buildings and processing equipment of the proposed project such as roads, wetlands, railway sidings, drainage ways, tanks, sewer systems, water mains, wells, etc.

**See Tab 7**

16. What is the current SIC code for the proposed use?

**The SIC code for the proposed use in Delaware is:**

**4491 – Marine Cargo Handling : Dock and Pier Operations**

**There is no SIC code specifically for the Liquefied Natural Gas Manufacturing Facility in New Jersey.**

17. What is the current zoning and planned land use of the proposed project site?

**See Tab 8**

18.a. Will the proposed project require a zoning change? (YES/NO) NO

**See Tab 9**

18.b. If so, to what classification and what zoning authority is responsible for reviewing and approving any change?

**N/A**

19. Will this project require new supporting facilities and what impacts will they have on the environment, economics of the area, aesthetic quality, zoning, and neighboring land uses?

**See Tab 10**

20. Have you enclosed your application fee check of \$3,000 made out to the State of Delaware?

**Yes**

21. If applicable, have you complied with 7 Del. Code, Chapter 79? The Secretary will not make a decision on this application until the applicant has submitted all necessary information to comply with Chapter 79.

**Crown Landing LLC has submitted the background statement in accordance with 7 Del. Code, Chapter 79.**

22. Should this project proceed, what, if any, negative impact will be expected. Provide a detailed paragraph on each of the following:

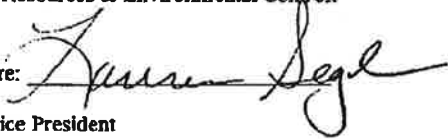
- a. the environment.
- b. the economy (corporate, state, county).
- c. aesthetic effects.
- d. number and type of supporting facilities required and the impacts, if any, on these six factors.
- e. county and municipal comprehensive plans.
- f. effect upon neighboring land uses.

See Tab 11

Under the penalty of perjury pursuant to 11 Del. C. S1221-1235, I hereby certify that the information contained herein is true and complete to the best of my knowledge.

I also hereby acknowledge that all the information in this application will be public information subject to the Delaware Freedom of Information Act, except for clearly identified proprietary information agreed to by the Secretary of the Department of Natural Resources & Environmental Control.

Signature:



Title: Vice President

Date: November 30, 2004

## 11.4 PROJECT FACILITIES

### 11.4.1 Docking Facility (predominantly in Delaware)

The Docking Facility will consist of an approximately 2,000-foot-long pier and a single berth designed to accommodate LNG carriers from 138,000 to 200,000 m<sup>3</sup> in capacity (Figure 4). The berth will include four breasting dolphins equipped with fenders and quick release hooks and five mooring dolphins equipped with quick release hooks to safely moor the LNG carrier. The berth will include walkways between the dolphins and the platform for personnel access and gangways between the carrier and the dolphins for the transfer of crew. Crown Landing will install an electronic berthing aid system to assist berthing operations.

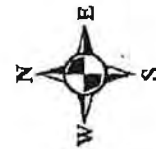
The trestle will provide the structural support for the cryogenic piping, containment trough, and utility lines from the shore to the berth and accommodate travel lanes for light vehicles. The LNG will be transferred from the ship to the Manufacturing Facility LNG storage tanks using the ship's pumps. This bulk product will be transferred from the ship through three 16-inch liquid unloading arms and will be transported from the pier through a 44-inch diameter liquid unloading line to the storage tanks. Boil-off gas (BOG) blowers will return part of the vapor generated during the unloading process from the LNG storage tanks to the ship through one 16-inch diameter vapor return arm. The remainder of the vapor is compressed, condensed back into LNG, and placed in the LNG tanks. During the holding mode of terminal operation (when no ship is unloading), a 12-inch line circulates LNG from the storage tanks to the main header at the end of the pier. The LNG returns through the liquid unloading line to keep the line cold.

### 11.4.2 Manufacturing Facilities (Entirely in New Jersey)





The Manufacturing Facility includes the following components.

#### *LNG Storage Tanks*

The LNG will be stored in three 158,000 m<sup>3</sup> gross full-containment storage tanks, comprised of a nine percent nickel steel inner tank, pre-stressed concrete outer tank, and a concrete roof. The concrete outer tank will serve as the secondary LNG impoundment to contain LNG in the extremely unlikely occurrence that a leak develops in the inner tank shell. All piping connections and tank nozzles will occur through the roof.



**Legend**

-  Crown Landing Site
-  Bathymetry Contours
-  Proposed Facilities
-  DE/NJ State Line

**Figure 4**

Berth and Dredged Area

Note: Bathymetry Contours  
are set at Mean Low  
Water (MLW) Datum



Bathymetry provided  
by Ocean Surveys,  
Inc. June 2003

### ***Vapor Handling***

During ship unloading, vapor in the storage tanks is displaced by unloading LNG from the ship. Vapor is generated as boil-off in the storage tanks due to heat input from the atmosphere. Blowers and compressors are used to move excess vapor from the storage tanks either to the ship or to a recondenser vessel. Vapor sent to the recondenser is condensed back into LNG by blending it with cold LNG from the low-pressure pumps. As required, gaseous nitrogen will be introduced into the BOG condenser in order to lower the heating value of the finished product.

### ***Low-Pressure LNG In-Tank Pumps***

The low-pressure in-tank pumps (three pumps per tank) are vertical centrifugal pumps mounted within the tank and immersed in the LNG fluid inside a pump column. Pump discharge will normally operate at a 160 psi differential into the low pressure header to the BOG condenser. The three pumps provided in each LNG storage tank are capable of sending out LNG capable of supporting the base load capacity of the Manufacturing Facility from one tank.

### ***High-Pressure LNG Pumps***

The outlet liquid stream from the BOG condenser flows to the high-pressure LNG pumps. These multi-stage units are each designed to pump the LNG to approximately 1,300 psig before vaporization. When the finished product is ready for distribution, the actual send out pressure will be determined by pipeline delivery requirements. The high-pressure pumps are vertical canned multistage cryogenic pumps. Seven pumps will be installed.

### ***LNG Vaporization***

The LNG is processed using a closed loop shell and tube heat exchanger vaporization system. Seven vertical shell and tube exchangers will be used to meet the base load capacity of the Manufacturing Facility. Water-ethylene glycol (WEG) will be used as the primary vaporization heating medium. Gas-fired heaters will heat the WEG mix. Ten gas-fired water glycol heaters provide heating. The heaters will be installed with ultra-low NOx burners to minimize air emissions. The heaters will be vented through one stack, approximately 150-foot-high. Four pumps will be available to pump the WEG from the heaters to the LNG vaporizers.

### ***Nitrogen***

A nitrogen injection system will be provided to reduce the heating value of the vaporized gas. This system is required in the event of deliveries of LNG which when vaporized will have heating values that exceed the limits of downstream facilities. The system will consist of a cryogenic air separation plant incorporating air filtration and dehydration, air and nitrogen compressors, heat exchangers, a turbo-expander, distillation towers, and a 750,000 gallon liquid nitrogen storage tank. The gaseous nitrogen will be injected into the LNG stream at the BOG condenser. Direct BTU analyzers will be used to monitor and control the heating value of the vaporized LNG.

#### ***Mercaptan***

Once the LNG is vaporized, the high pressure gas will be odorized using mercaptan. The mercaptan will be injected into the gas using measuring injection pumps at a rate stipulated by the pipeline companies. The mercaptan will be stored on site in the vicinity of the metering facilities.

The finished product will be sent out to the pipeline grid at a maximum pressure of 1,200 psig and a minimum temperature of 40°F. The tie-ins with the three pipelines will occur on the Crown Landing Site. The Project will have a maximum delivery capacity of 0.6 BCFD to Transco, 0.5 BCFD to Columbia, and 0.9 BCFD to Texas Eastern, providing operational flexibility for the planned Manufacturing Facility send-out capacity of 1.2 BCFD.

#### ***Buildings***

Six enclosed buildings will be constructed for the Crown Landing Manufacturing Facility:

- Administration Building – approximately 3,200 square foot one-story insulated metal building for the administrative headquarters of the Manufacturing Facility;
- Maintenance/Warehouse Building – approximately 7,500 square foot, one-story insulated metal building providing storage, maintenance, and repair areas;
- Motor Control Center (MCC) Building – approximately 8,500 square foot, one-story insulated metal building housing the main control room and motor controls;
- Guardhouse – approximately 150 square foot one-story insulated metal building to provide a security checkpoint for all incoming traffic to the Manufacturing Facility;
- Pier Control Building – approximately 960 square foot, one-story insulated metal building located on the trestle and housing pier operations controls; And
- Utility Building – approximately 2,400 square foot, one-story building that contains various Manufacturing Facility utilities.



The facility will also include several metal shelters (up to 15,000 square feet) that contain the air compressors, BOG compressors, water-ethylene glycol heaters, and associated equipment.

### *Utilities*

The Project requires various utilities for operation: service and potable water, gas for fueling the heaters, diesel fuel for the emergency generator, electricity, instrument and plant compressed air, heating and air conditioning, on-site septic system, and storm water management. The provision of these utilities is summarized in Table 1.

### *Fire Protection System*

The fire protection system is designed in compliance with NFPA 59A requirements and will provide for extinguishing Class A fires; provide water to cool structures and equipment exposed to thermal radiation; and aid in dispersing flammable vapors. The main components of the system will include:

- 300,000-gallon firewater storage tank;
- One electric and one diesel powered firewater pumps;
- One electric motor-driven jockey pump;
- A firewater piping distribution system to provide water to the facility's hydrants and monitors; and
- Fire hydrants with monitors and hose reels strategically located throughout the facility.

Fire extinguishers, which are remotely operated, will be provided throughout the terminal. Dry chemical extinguishers will be placed at strategic locations throughout the terminal.

**Table 1 Summary of Project Utility Requirements**

Service water	Provided by on-site wells
Drinking water	Delivered as bottled water
Fuel gas	Self-generated with pipeline gas as a back-up
Diesel fuel	Delivered by truck
Electricity	Provided via an independent feed from the existing Conectiv 69 kV transmission line
Compressed air	Self generated with an air compressor system
Nitrogen	Outbound from on-site air separation facility
Heating and air conditioning	Electrical HVAC systems provided in enclosed buildings (Administrative Building, Maintenance/Warehouse Building, MCC Building, Guardhouse, Pier Control Building, and Utility Building)
Wastewater	On-site septic system designed in accordance with New Jersey Administrative Code 7:9A
Stormwater management	On-site stormwater management facilities designed in accordance with New Jersey Department of Environmental Protection Stormwater Management Guidelines (NJDEP, 2003)
Utility nitrogen	Obtained from air separation plant

**LNG Project Controls**

The Project control system will consist of a Distributed Control System (DCS) with an independent safety control system. A central control room will be constructed for complete plant control and monitoring. There will also be an operator control station located on the pier.

**11.4.3 LNG Carriers**

Natural gas production is located primarily in remote areas, which are distant from consumption centers. In order to efficiently bring the natural gas to market, it is necessary to manufacture a liquid from the natural gas, which reduces the volume of the natural gas by approximately 600 times, load the LNG onto specially designed ships, and transport the cargo by sea.

The ships that will transport the LNG from the liquefaction port to Crown Landing will load the cargo of LNG into specially designed and constructed tanks. The cargo is kept at atmospheric pressure by a combination of insulation, to minimize heat transfer to the cargo, and boil-off gas generation. This boil-off gas is removed from the cargo and preferentially burned in the ship's engine room to supplement fuel oil.

All LNG ships calling at Crown Landing will be governed by a USCG - approved Operating Plan for LNG on the Delaware River. The Operating Plan is developed by taking into account public input and a formal risk assessment.

The ships that will deliver LNG to Crown Landing will be principally operated and owned by BP. BP operates its ships under the British flag. Ships will range from 138,000 m<sup>3</sup>, the size of existing BP LNG ships, to 200,000 m<sup>3</sup>, which have yet to be constructed. The dimensions of these ships are listed in Table 2 below.

**Table 2. LNG Ship Dimensions**

<b>Dimension</b>	<b>Existing Ships Actual Dimensions</b>	<b>Future Ships Approximate Dimensions</b>
Capacity in cubic meters	138,000	200,000
Length in feet	914	1056
Beam in feet	138	167
Loaded Draught in feet	38	38
Ballast Draught in feet	32	32
Depth of Hull in feet	85	88
Loaded Displacement in long tons	103,000	147,000

LNG ships are designed and constructed to meet standards for maximizing safety and minimizing risk. These standards exist on a variety of scales from international to domestic and include the following

- International standards are developed by the International Maritime Organization (IMO) and include Safety of Life at Sea (SOLAS), The International Code for the Construction and Equipment of Ships carrying Liquefied Gases in Bulk (IGC Code). These International standards are adopted by individual flag States into their National legislation and ships are constructed and operated to these standards. The construction and operation is monitored for compliance by the relevant flag State. An example of this being the USCG have adopted all IMO resolutions into the legislation of the US in the relevant CFRs. Additionally classification societies, such as the American Bureau of Shipping, ensure that the LNG ships are constructed and operated to their specific rules for construction and maintenance.
- Domestic standards established by the USCG (46 CFR Part 154) and the American Bureau of Shipping, which stipulate detailed construction specifications, such as steel quality as well as the IMO standards.

#### **11.4.4 Downstream Facilities**

One of the primary advantages of the proposed site is the proximity to natural gas transmission pipelines. The existing Columbia and Transco pipelines are located on the Crown Landing Site. The tie-ins from the metering facility to the pipelines will be short and will not require any new off-site rights-of-way. Texas Eastern has filed a separate application with FERC to extend its pipeline system approximately 12 miles to the Crown Landing Site. Upon approval of its application, Crown Landing will also connect to this lateral on-site. Metering and odorant injection facilities for all three pipelines will be provided on the Crown Landing Site.



\*1 Office of the Attorney General  
State of Delaware

Opinion No. 78-018  
October 5, 1978

Nathan Hayward III  
Director  
Office of Management, Budget & Planning

QUESTIONS:

1. Does the exemption for docking facilities for a single industrial or manufacturing facility for which a permit is granted or which is a nonconforming use, found in 7 Del. C. § 7002(f), apply to docking facilities that are located in the State of Delaware but serve an industry located in the State of New Jersey on the eastern side of the Delaware River?

2. Does the term "bulk products" as used in the Coastal Zone Act (a) refer to cargoes shipped in large bulk masses such as oil, gas, coal and iron ore; (b) also apply to cargoes of individually identifiable units such as container packets or items of machinery or goods?

ANSWER:

1. The exemption found in 7 Del. C. § 7002(f) applies to facilities that are located on the eastern boundary of Delaware which serve an industry located in New Jersey in the same context that it would apply if the attached facility were located on fast land in Delaware.

2. The term "bulk product" refers to cargoes shipped in large mingled masses and not to cargoes of individually packaged units or individual product items.

DISCUSSION:

The Coastal Zone Act, 7 Del. C. Chapter 70 (the "Act") was adopted in 1972 amid concerns regarding the future direction of development in the coastal area of Delaware. The explicit purpose was to regulate land use in the "most critical areas for the future of the state in terms of the quality of life in the State". 7 Del. C. § 7001. The same section declares that the public policy of the State of Delaware is to control the location, extent and type of industrial development in Delaware's coastal waters. The second purpose is to "better protect the natural environment of its bay and coastal areas and safeguard their use primarily for recreation and tourism." *Id.* The remainder of that section makes it clear that the purpose is not to discourage industry but rather to protect the small critical area which comprises the coast of Delaware.

Water and air quality are a definite part of the environment sought to be protected by the General Assembly. 7 Del. C. § 7004(b)(1). The General Assembly

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has recognized, however, that an exemption for a single use facility would not interfere with the dual purposes of the Coastal Zone Act in such a way to be impermissible under the legislative purpose. 7 Del. C. § 7002(f). This section states:

"Bulk product transfer facility" means any port or dock facility, whether an artificial island or attached to shore by any means, for the transfer of bulk quantities of any substance from vessel to onshore facility or vice versa. Not included in this definition is a docking facility or pier for a single industrial or manufacturing facility for which a permit is granted or which is a nonconforming use. Likewise, docking facilities for the Port of Wilmington are not included in this definition.

\*2 The eastern boundary of the State of Delaware extends in part to the low water mark on the eastern side of the Delaware River within the 12 mile circle described from New Castle. 29 Del. C. § 201. If the development on the eastern rim of the state were to be uncontrolled by the regulatory mechanism of the Coastal Zone Act, pressure of development antithetical to the Act would exist. As the Act states: "It is further determined that offshore bulk product transfer facilities represent a significant danger of pollution to the coastal zone and general pressure for the construction of industrial plants in the coastal zone. . . For these reasons, prohibition against bulk product transfer facilities in the coastal zone is deemed imperative." 7 Del. C. § 7001.

The question then becomes the extent to which these same rules apply where the adjacent facility is located in another jurisdiction over which the Delaware legislature has no authority. There is no reason to believe that the legislature intended any different rule to apply to unattached lands from the lands attached to the Delaware shore within the Coastal Zone. Allowing the bulk product transfer facilities to generate pressure for industry anywhere in the water and air basins would be contrary to the purposes of the Act. This would apply no less to that part of Delaware which is located adjacent to New Jersey than to the fast lands of Delaware itself.

Failure to apply the exemption to those facilities built adjacent to New Jersey would lead to an anomalous administration of the Act. The Act should not be read so as to produce an absurd result. Opinion of the Justices, Del. Supr., 295 A.2d 718 (1972) and State v. Braun, Del. Super, 378 A.2d 640 (1977).

As to the second question, the term "bulk" is defined in Webster's Unabridged Dictionary as "in a mass; loose; not enclosed in separate package or divided in separate parts". Webster's Third New International Dictionary, p. 293 (Ed. 1961). There are a number of cases in accord with the dictionary meaning of the word "bulk", thus it has been held to be "neither counted, weighed, nor measured", Riggs v. State, Neb. Supr., 121 NW 588 (1909); contra distinguished from "parcel", Standard Oil v. Commonwealth, Ky. Ct. App., 82 SW 1020 (1904); "of indefinite proportion", Naftalin v. John Wood Co., Minn. Supr, 116 NW 2d 91 (1962). The term "laden in bulk" means loose in the hold or not included in boxes, bales or casks, Standard Oil Co., supra. The cited cases use the commercial definition of the term. Terms in a statute relating to trade or commerce are presumed to be used in their trade or commercial sense. 2A Sutherland, Statutory Construction (Sands 4th ed 1973) § 47.31. In this case, the commercial and the dictionary meaning are in accord. Therefore, the prohibition in 7 Del. C. § 7003 against offshore gas,

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Del. Op. Atty. Gen. 78-018, 1978 WL 22485 (Del.A.G.)  
(Cite as: 1978 WL 22485 (Del.A.G.))

Page 3

liquid or solid bulk product transfer facilities would not refer to individual products or packages.

In summary, the State of Delaware should apply the exemption for the single use bulk product transfer facility in the same manner as if the attached facility were also located in Delaware. Therefore, if a permit would have been granted or if the facility would be a nonconforming use had the facility been located in Delaware, the single use exemption may apply. The term "bulk" refers to commingled goods and not to individual packages or products.

\*3 If you have any further questions, please feel free to call me.

Sincerely,

June D. MacArtor

Deputy Attorney General

APPROVED BY:

Richard R. Wier, Jr.

Attorney General

Del. Op. Atty. Gen. 78-018, 1978 WL 22485 (Del.A.G.)

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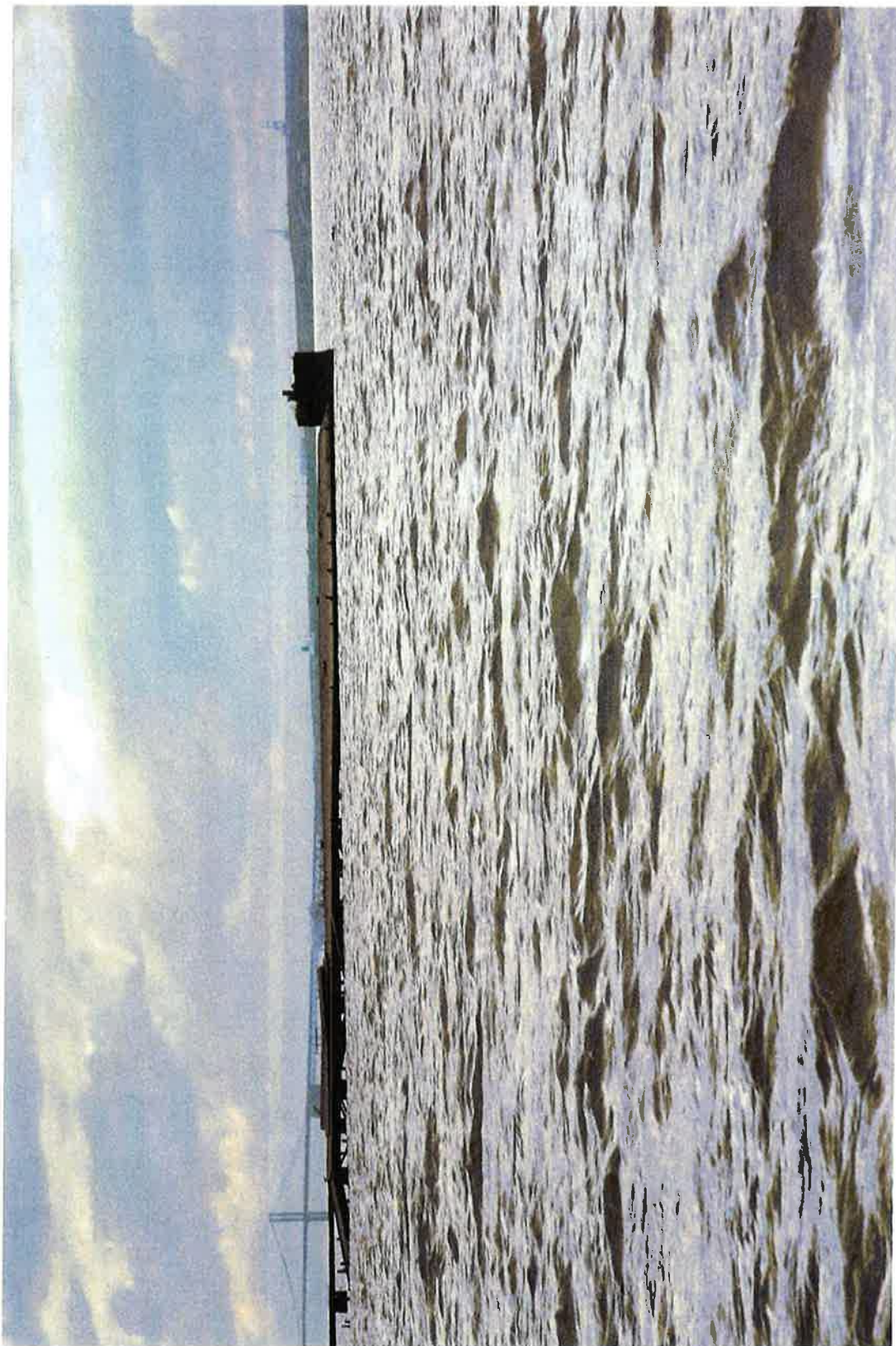




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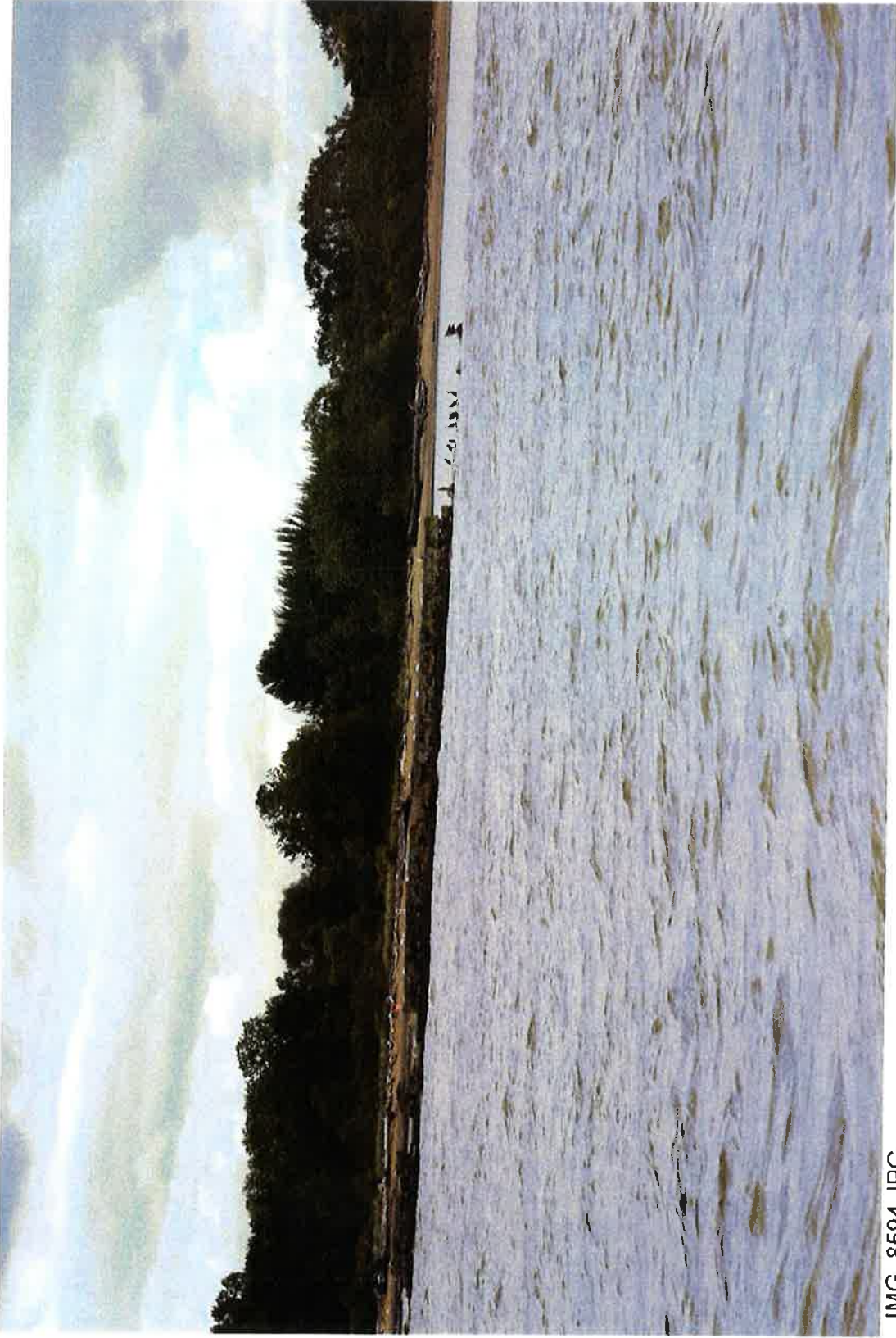




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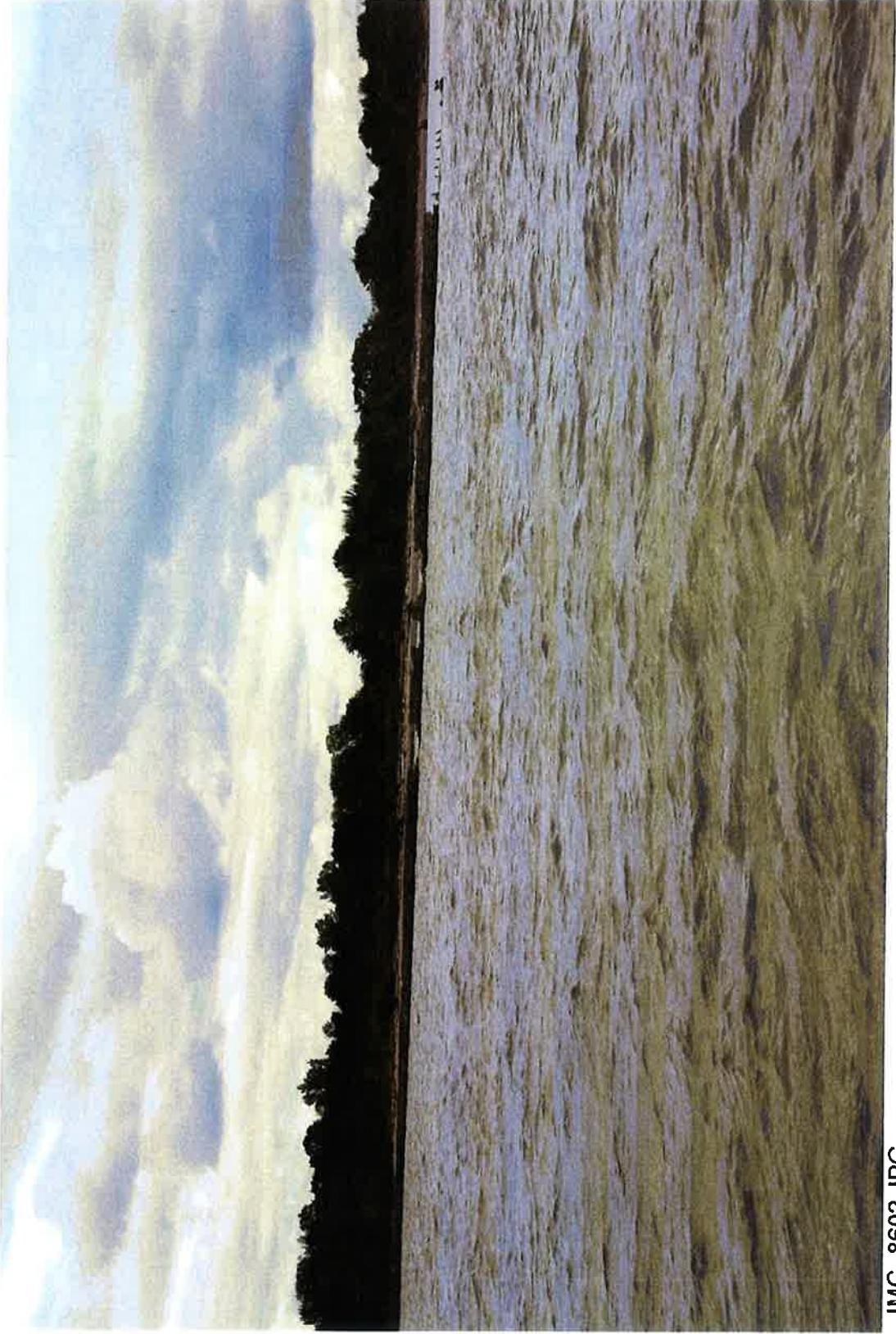




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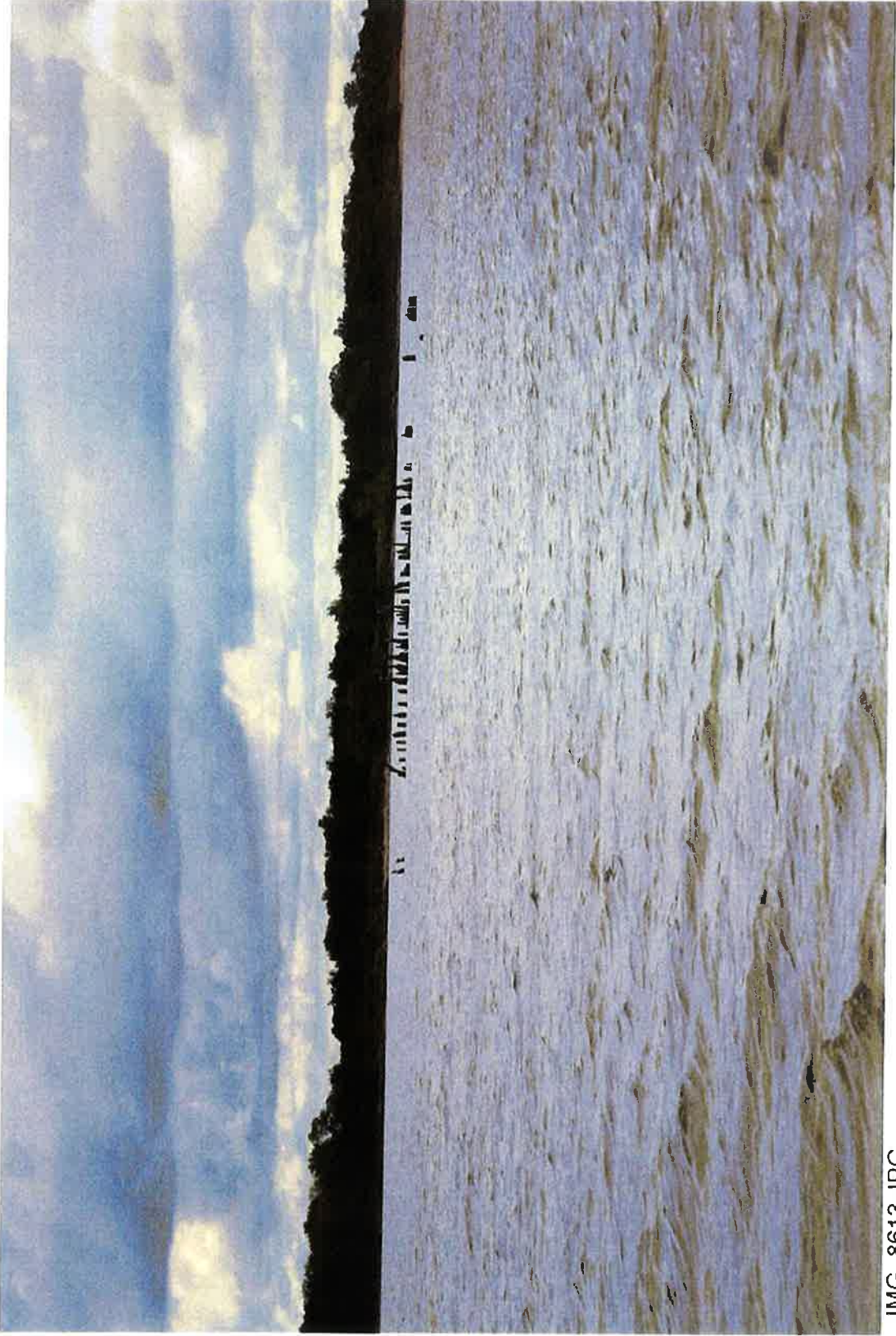


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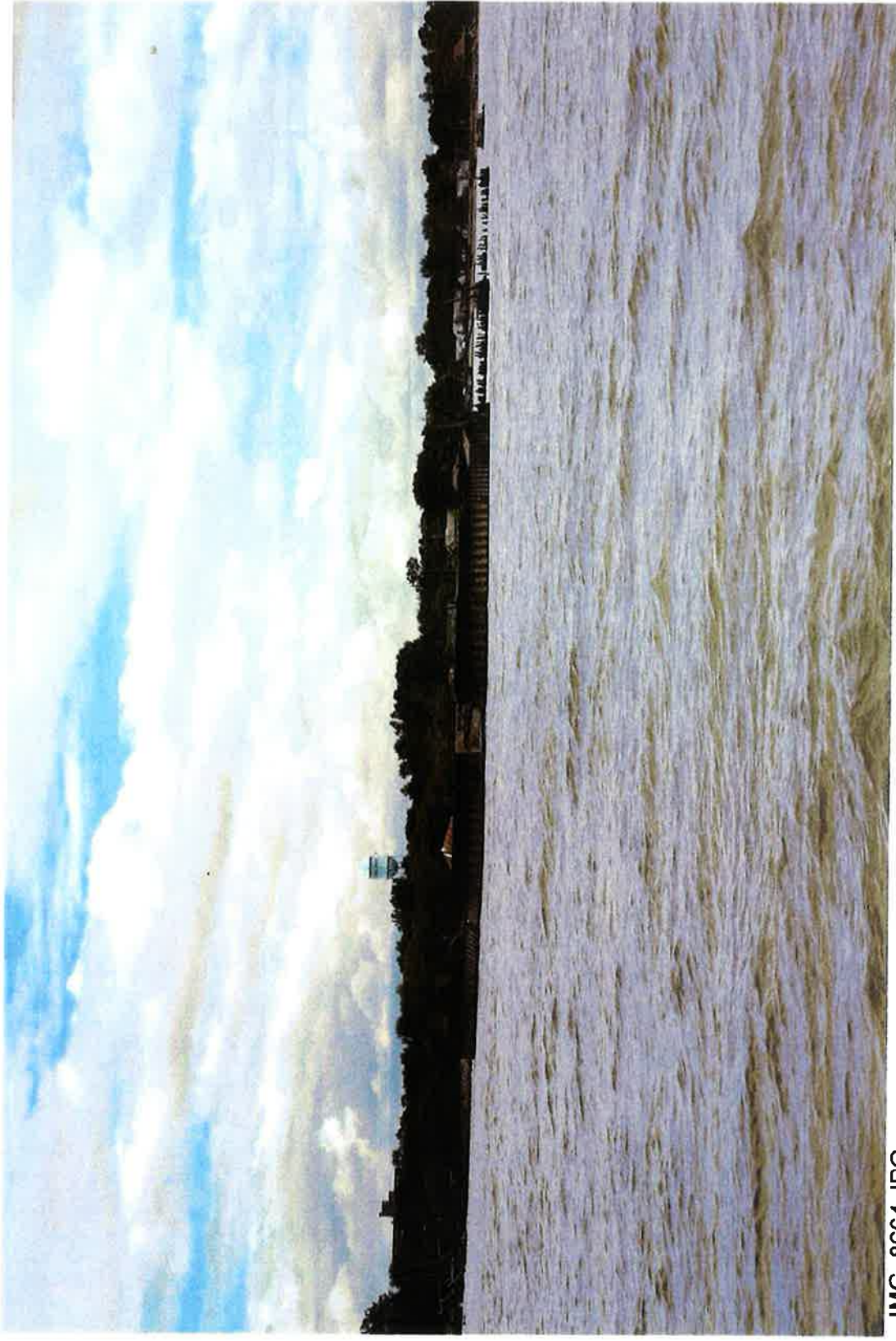




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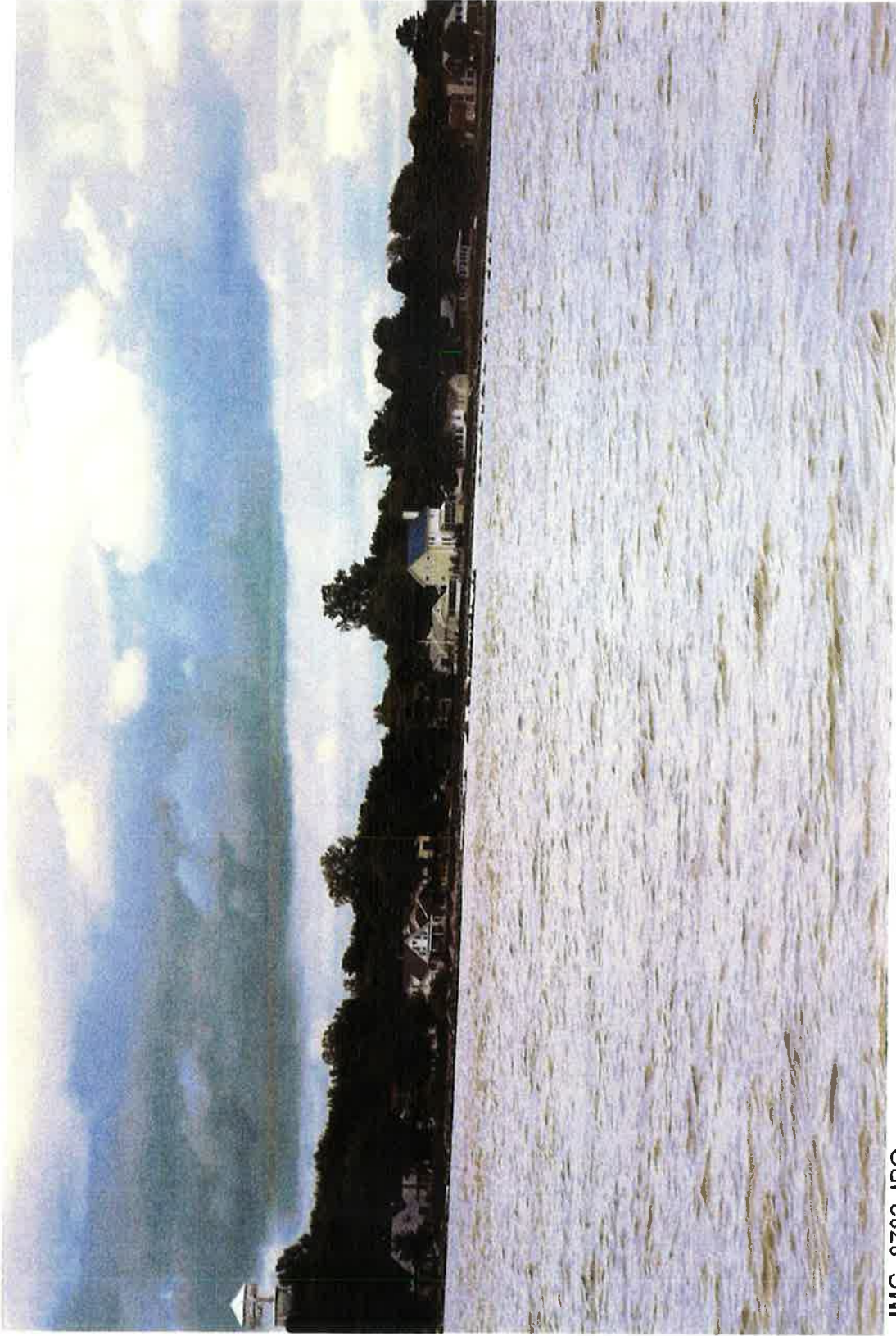




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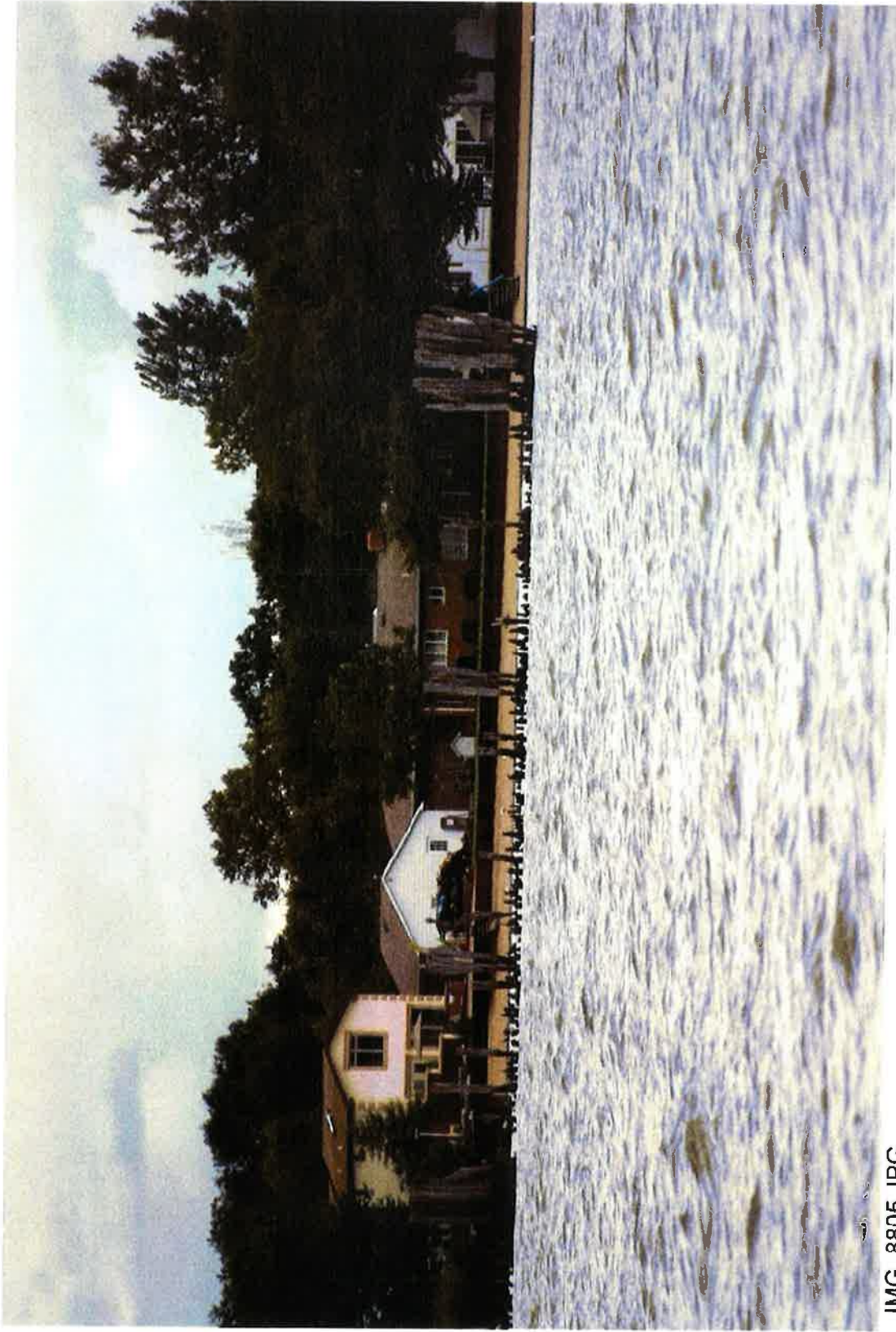




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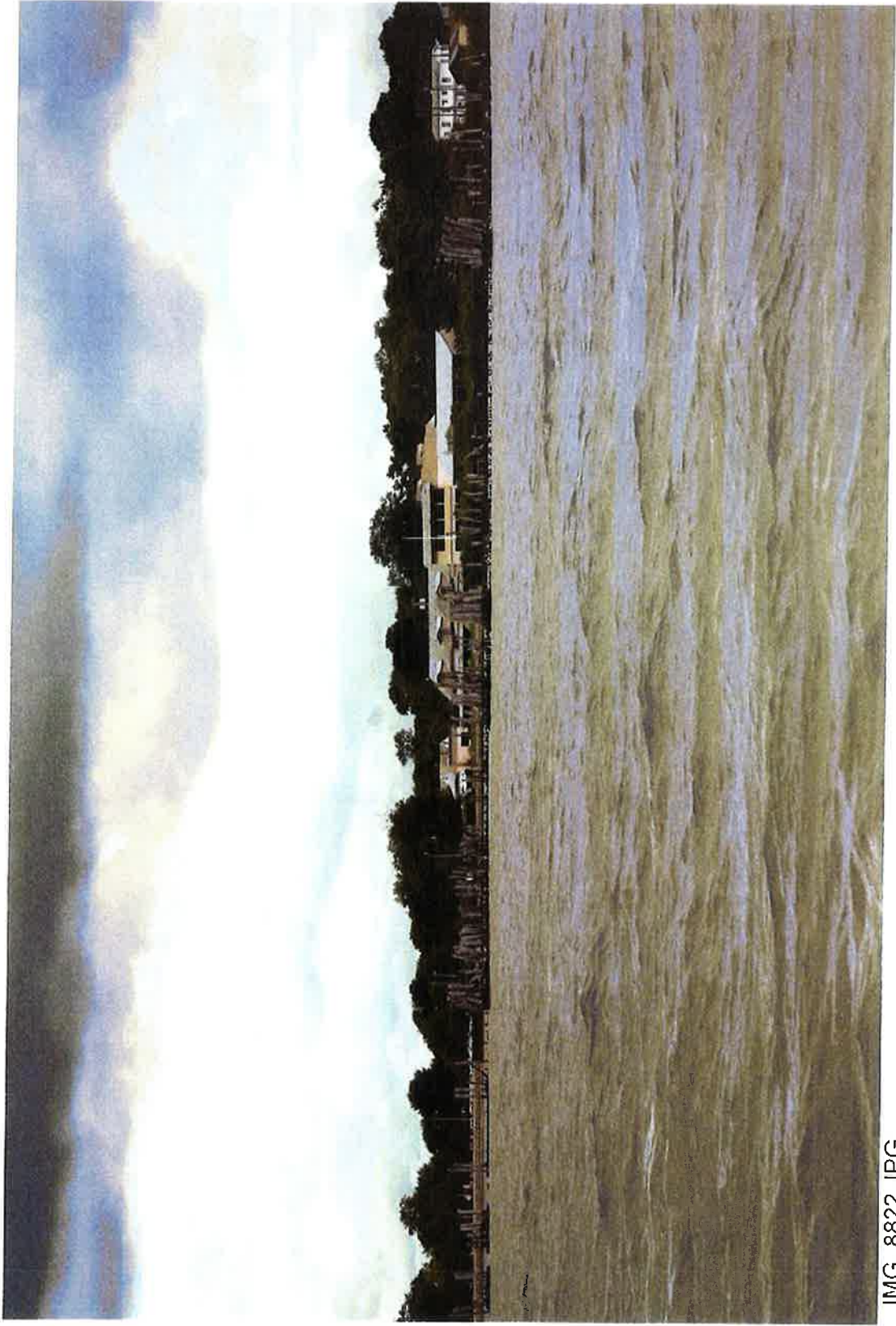




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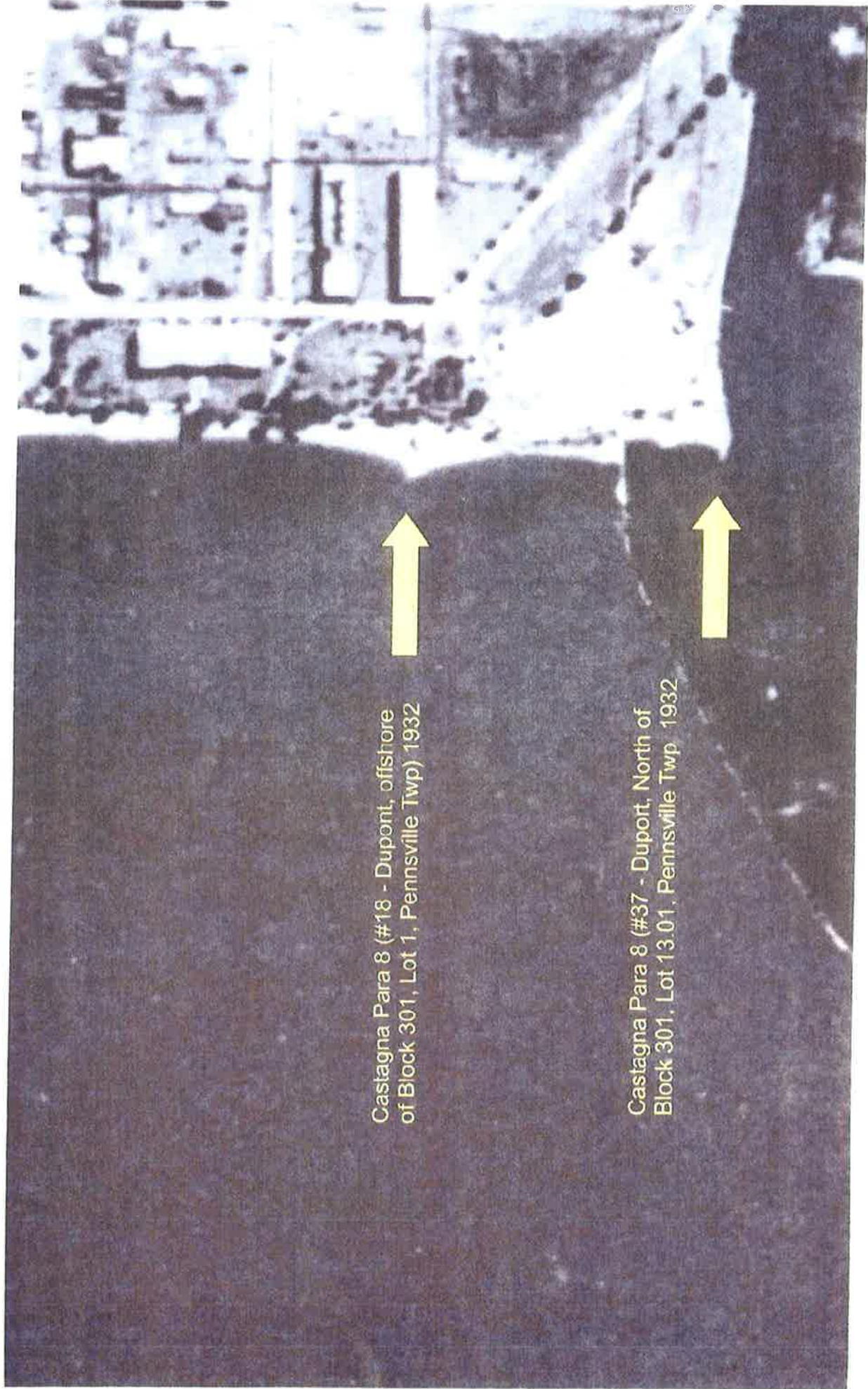




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Castagna Para 8 (#37 - Dupont, North of  
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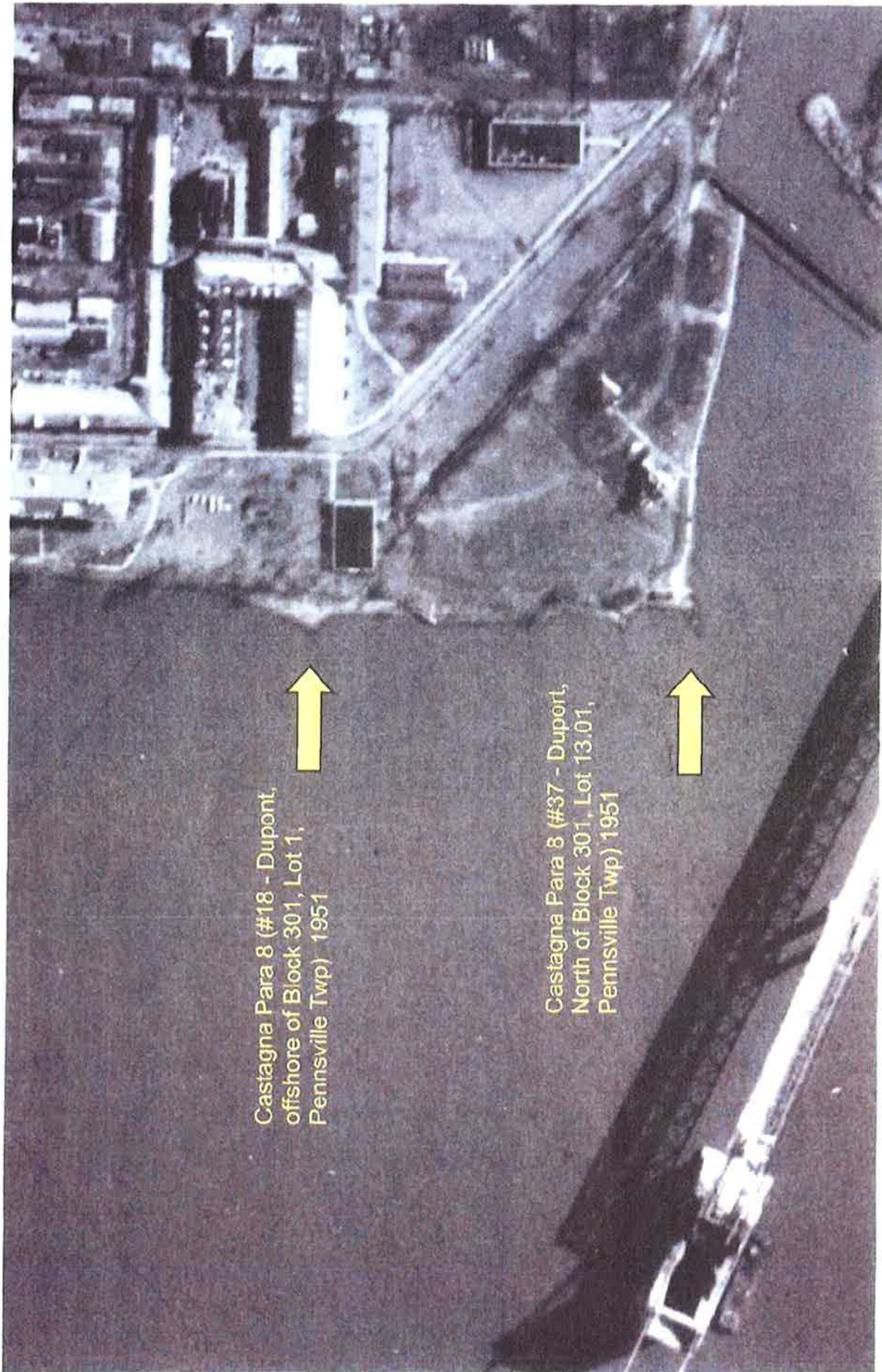


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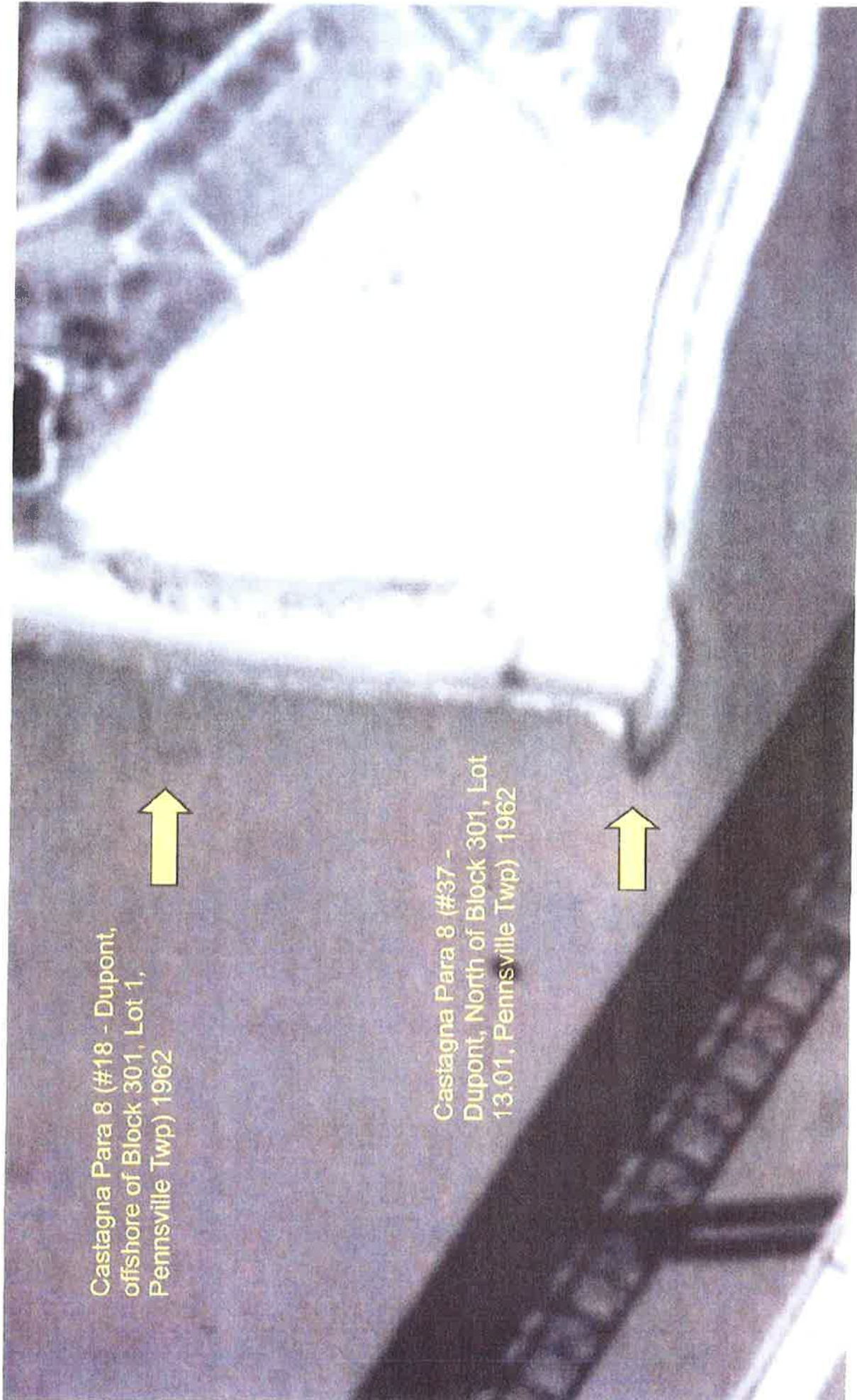
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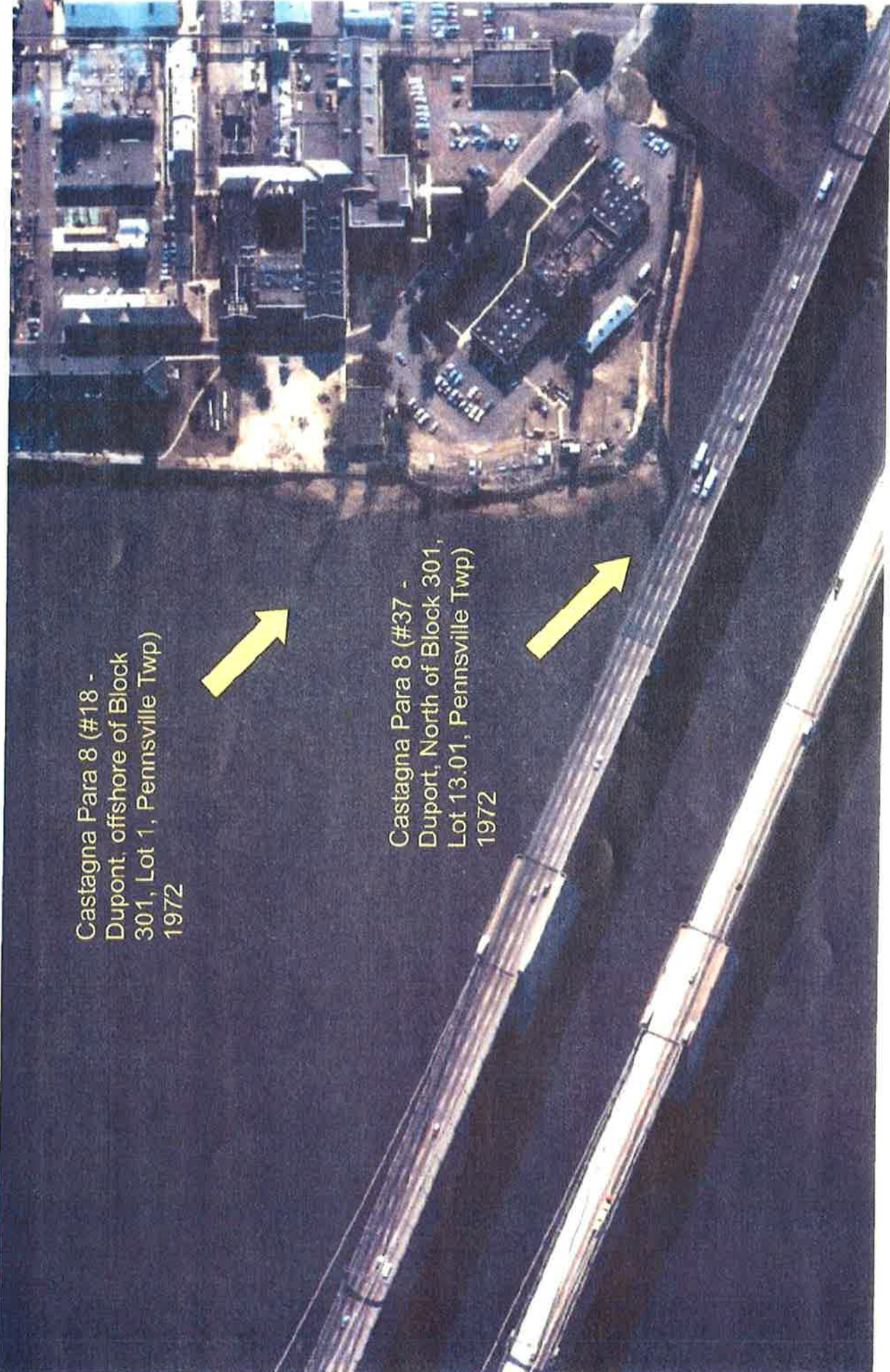
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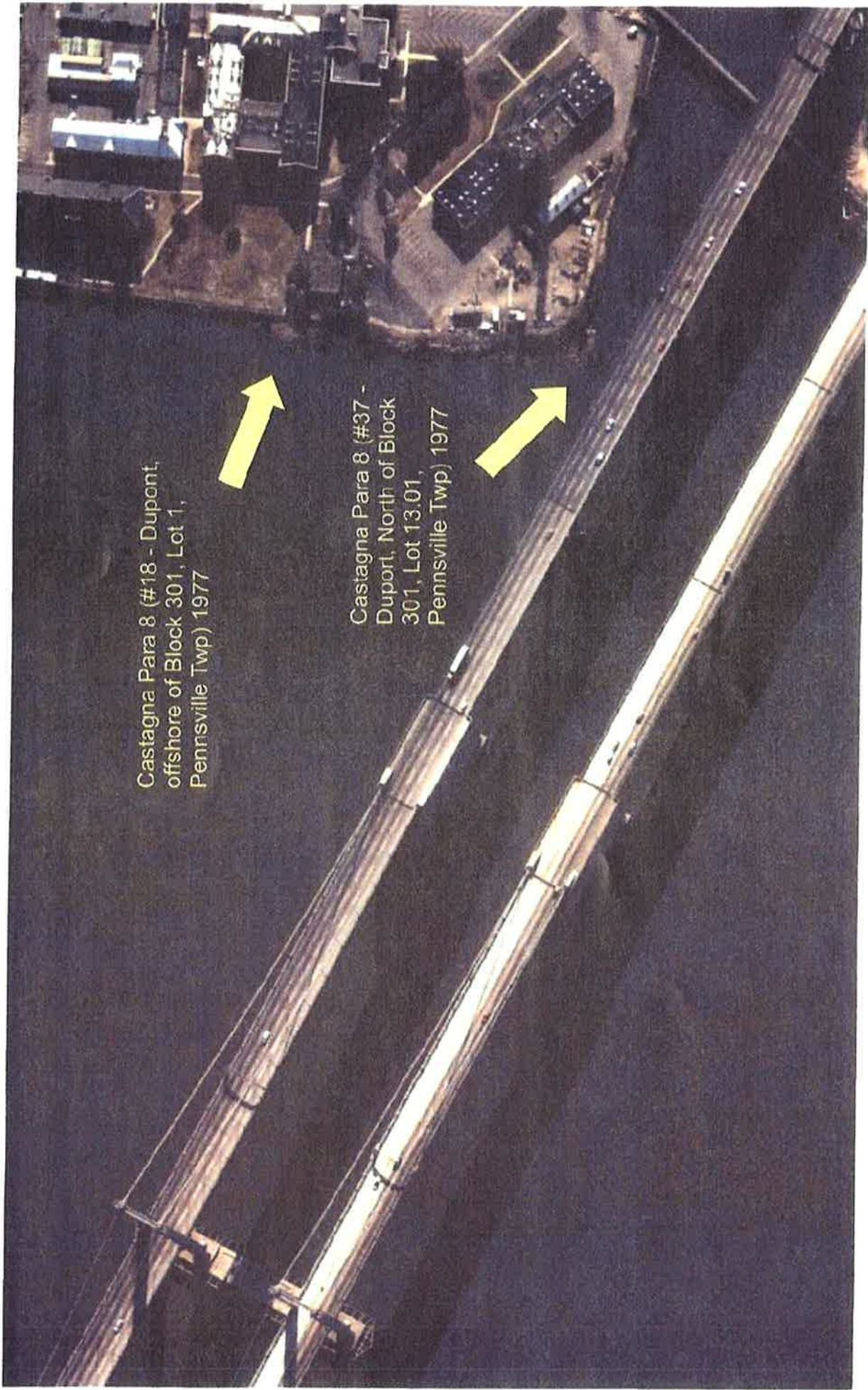


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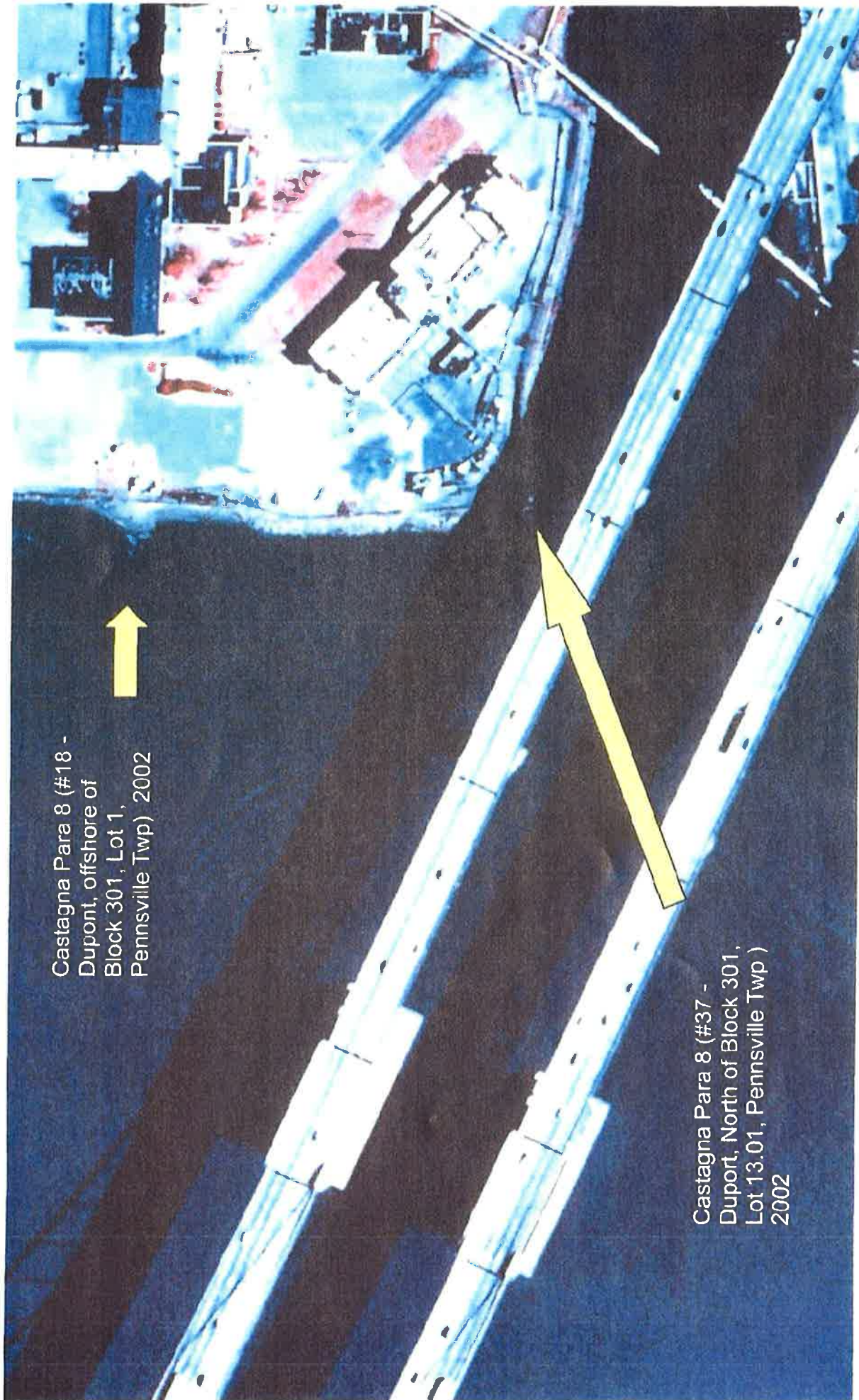
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Castagna Para 8 (#18 -  
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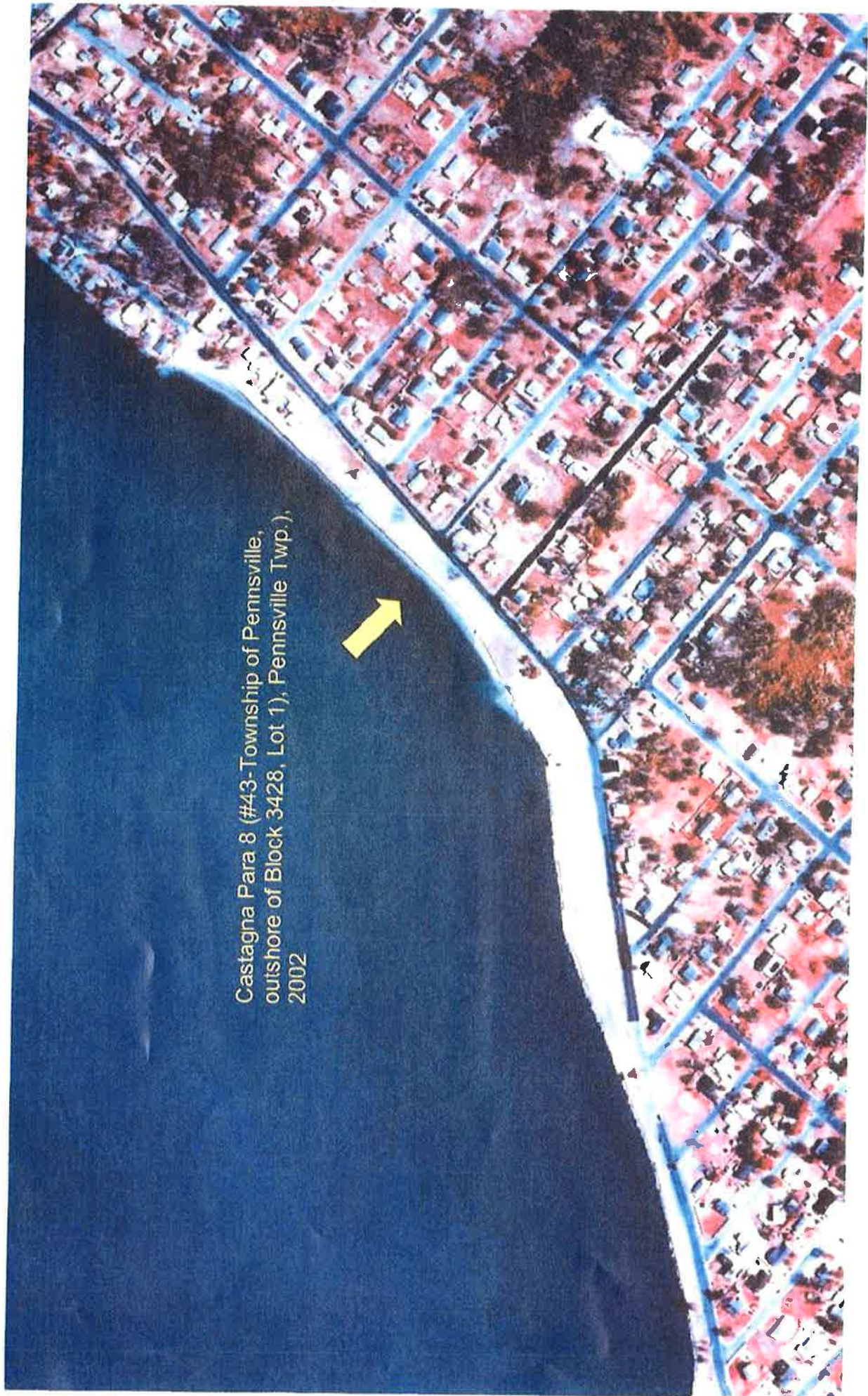


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NJ10071





Castagna Para 8 (#43-Township of Pennsville,  
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NJ10073



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## DE26671

RUN_NO	RPTD_DT	FIRE_D	LOCATION
94018554	19940703	1533	PEA PATCH ISL NORTH END
94018642	19940703	1533	DE RIVER OPP DEL CITY MARINA
94018749	19940704	2933	DELAWARE RIVER - REEDY ISLAND
94019498	19940711	1533	DELAWARE RIVER ACROSS DELAWARE CITY
94019501	19940712	2933	DELAWARE RIVER OPPOSITE OAKWOOD BEACH
94019716	19940714	2933	REEDY ISLAND DELAWARE RIVER
94020000	19940716	1133	1 MILE NORTH DEL MEM BRIDGE
94020324	19940720	2933	DEL RIVER S OF CANAL
94020849	19940725	2933	DE RIVER OFF AUGUSTINE BEACH
94021991	19940806	2933	DELAWARE RIVER AT AUGUSTINE BEACH
94022797	19940814	2933	DEL RIVER ON NJ SIDE OF JETTY
94023055	19940817	1534	DELAWARE RIVER AREA
94023429	19940821	1834	DELAWARE RIVER
94023642	19940823	1533	DELAWARE RIVER/PEA PATCH ISLAND
94023754	19940824	2933	DELA RIVER/REEDY ISLAND
94025182	19940909	2933	REEDY ISLAND RANGE - BOUY 2R
94025252	19940909	1834	DE RIVER OPP RIVERVIEW BEACH PARK
94025447	19940911	2033	DEL RIVER
94026042	19940918	1834	DELAWARE RIVER OFF KELLY POINT
94026758	19940925	2933	DELAWARE RIVER/HOPE CREEK
94027176	19940929	2933	DE RIVER E SIDE OF REEDY ISLAND
94028728	19941015	2933	DEL RIVER AT REEDY ISLAND
94029908	19941028	2433	DEL RIVER STH OF ARTIFICIAL ISL
94029995	19941029	1533	DELAWARE RIVER/STAR ENTERPR
94034313	19941213	2933	DELAWARE RIVER/REEDY ISLAND
95008022	19950325	1834	DELAWARE RIVER OFF PENNSVILLE RAMP
95008339	19950328	1533	DEL RIVER NEAR FT MOTT
95010269	19950417	1133	DELAWARE RIVER NORTH OF EDGEWOOD PLANT
95011327	19950427	1333	DELAWARE RIVER OFF CITISTEEL
95012292	19950507	1834	DEL RIVER BATTERY PARK
95012848	19950512	2933	DELAWARE RIVER NEAR ELNISBORO POINT
95014886	19950601	2933	25 AUGUSTINE BEACH, A5
95016867	19950618	2933	DEL RIVER/AUGUSTINE BEACH
95017137	19950623	2433	DELAWARE RIVER NEAR ARTIFICIAL ISLAND
95018105	19950703	2933	36 AUGUSTINE BEACH, A5
95018179	19950704	1533	DELAWARE RIVER/STAR JETTY
95018257	19950705	2933	DELAWARE RIVER NEAR ARTIFICIAL ISLAND
95018312	19950706	1333	DELAWARE RIVER/BELLVUE RANGE
95018998	19950713	1833	DELAWARE RIVER- BUOY 1D- DEEPWATER RANGE
95019304	19950715	2933	REEDY ISLAND
95019334	19950715	2933	24 AUGUSTINE BEACH, A5
95019336	19950715	1533	PEA PATCH ISLAND/DELAWARE RIVER
95021070	19950728	1133	DELAWARE RIVER NORTH OF MARINE TERMINAL
95021093	19950729	1534	DELAWARE RIVER/DEL CITY
95022520	19950811	1834	DELAWARE RIVER NEAR LUKENS DRIVE
95022916	19950815	2933	OFF OAKWOOD BEACH ELSINBORO
95022962	19950816	1834	DELAWARE RIVER, SOUTH OF DEL MEM BRIDGE
95023593	19950822	2433	DEL RIVER 2 MI SOUTH OF POWER PLANT
95024017	19950826	1834	DELAWARE RIVER/RIVERSIDE PARK
95024348	19950829	2933	DEL RIVER OFF OF PORT PENN
95024979	19950904	1333	DEL RIVER/CLAYMONT

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## DE26672

95025327	19950907	2033 CHERRY ISLAND FLATS
95025393	19950908	2933 DELAWARE RIVER NEAR PORT PENN
95026501	19950920	1834 DELAWARE RIVER OFF NEW CASTLE
95028643	19950921	1834 DELAWARE RIVER/NEW CASTLE
95026840	19950923	1133 DELAWARE RIVER OPPOSITE LEPARC CONDOS
95026845	19950923	1834 DELAWARE RIVER OFF PENNSVILLE BOAT DOCKS
95027820	19950930	1533 DEL RIVER N OF PEA PATCH ISLAND
95027684	19951001	1533 DEL RIVER, 1/2 MI N OF PEA PATCH ISLAND
95027808	19951002	1833 DELAWARE RIVER OFF NEW CASTLE
95027878	19951003	1533 PEA PATCH ISLAND
95031480	19951106	1534 DELAWARE RIVER NEAR PIER 2
95033274	19951123	1534 DELAWARE RIVER/SALEM RIVER
95036214	19951220	1333 DEL RIVER OFF PHOENIX STEEL
96011011	19960415	2933 DELAWARE RIVER NEAR SAM GREENS BEACH
96011023	19960415	2933 DELAWARE RIVER OFF AUGUSTINE BEACH
96011158	19960417	1133 DELAWARE RIVER OFF DPL EDGEMOOR
96012457	19960428	2933 DELAWARE RIVER OFF PORT PENN
96013246	19960505	2933 REEDY ISLAND JETTY
96014777	19960520	2033 DEL RIVER 1/2 MI STH OF DMB
96014844	19960521	1834 DEL RIVER OFF BATTERY PARK
96014885	19960521	1133 DELAWARE RIVER OFF DP/L EDGEMOOR
96015510	19960527	1534 DELAWARE RIVER BY POWER LINES
96015518	19960527	1834 DELAWARE RIVER OFF 3RD ST - NEW CASTLE
96016909	19960608	1533 DEL RIVER OFF FORT MOTT
96019707	19960705	1834 DEL RIVER OPP DEEMERS BEACH #BOUY 4-D
96021364	19960721	2033 DEL MEMO BRIDGE
96021808	19960725	1833 DEL RIVER S OF NEW CASTLE
96022677	19960804	2433 DELAWARE RIVER OPP SALEM NUCLEAR PLANT
96023371	19960810	2933 DELAWARE RIVER OPP AUGUSTINE BEACH
96023483	19960811	1533 DELAWARE RIVER BET POWER LINES/FORT MOTT
96024209	19960818	1534 DEL RIVER BTWN SALEM COVE/PEA PATCH IS
96024216	19960818	1534 DEL RIVER S OF PEA PATH ISLAND
96027490	19960919	1333 DELAWARE RIVER - BELLEVUE RANGE #7C
96027870	19960921	1833 DELAWARE RIVER OFF NEW CASTLE
96027693	19960921	1333 DELAWARE RIVER AT PA/DEL LINE
96027705	19960921	1834 DELAWARE RIVER BTWN DMB/PEA PATCH IS
96028350	19960928	1533 DEL RIVER AT FORT DEL NJ SIDE
96030548	19961017	1833 DELAWARE RIVER NORTH OF RIVERVIEW BEACH
96030618	19961018	1834 DEL RIVER OFF PENNSVILLE
96030827	19961020	2033 UNDER DEL MEMO BRIDGE EAST TOWER
96031596	19961027	2433 DEL RIVER OFF SALEM NUCLEAR PLANT
96031756	19961029	1834 DEL RIVER OFF KELLYS POINT OPP NEW CASTL
96031856	19961029	2933 DEL RIVER OFF ARTIFICIAL ISLAND
96032107	19961101	1533 DELAWARE RIVER UNDER HIGH TENSION WIRES
97004390	19970212	1533 DEL RIVER AREA OF PEA PATCH ISLAND
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97015757	19970525	1833 DELAWARE RIVER OFF BATTERY PARK
97016081	19970528	2933 DEL RIVER S OF C/D CANAL
97016083	19970528	1834 DEL RIVER END OD CHESTNUT ST
97016199	19970529	2933 DELAWARE RIVER AT AUGUSTINE BEACH
97016556	19970602	1333 DEL RIVER S OF MARCUS HOOK

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97017084	19970606	1833 DEL RIVER/DEEMERS BEACH
97017157	19970607	1834 DEL RIVER OFF NEW CASTLE
97017302	19970608	1834 DELAWARE RIVER OFF BATTERY PARK
97017340	19970608	2933 DEL RIVER AT REEDY ISLE
97017720	19970611	1833 DEL RIVER OFF BATTERY PARK
97018175	19970615	2033 DELAWARE RIVER NORTH OF DEL MEMO BRIDGE
97018205	19970615	2933 AUGUSTINE BEACH
97018783	19970621	1533 DEL RIVER, 1/4 MI N OF PEA PATCH ISLAND
97019097	19970623	1834 DELAWARE RIVER OFF PENNSVILLE
97019543	19970627	2034 DELAWARE RIVER
97020413	19970705	2933 ARTIFICIAL ISLAND
97020525	19970706	2033 DELAWARE RIVER S OF DMB
97020737	19970708	1834 DELAWARE RIVER/THIRD ST
97021355	19970713	2933 DEL RIVER SOUTH OF REEDY ISLAND
97022880	19970726	1533 PEA PATCH ISLAND
97022885	19970726	1533 DEL RIVER OFF DEL CITY PIER
97023964	19970805	1133 DELAWARE RIVER AT DP/L
97024660	19970811	1834 DEL RIVER AT END OF DELAWARE ST
97025305	19970817	1534 DELAWARE RIVER NEAR THE SALEM RIVER
97025453	19970819	1834 DELAWARE RIVER OFF OF PENNSVILLE
97027043	19970902	1533 DELAWARE RIVER NORTH OF PEA PATCH ISLAND
97028259	19970914	1534 DELAWARE RIVER OPP SALEM RIVER
97028444	19970916	1533 DELAWARE RIVER N OF PEAPATCH ISLAND
97028603	19970917	1333 DELAWARE RIVER/PA LINE
97030859	19971008	1834 DELAWARE RIVER AT PENNSVILLE BOAT RAMP
97030907	19971006	1534 DEL RIVER ENT TO C/D CANAL
97030914	19971006	2933 DEL RIVER OFF ARTIFICIAL ISLE
97032136	19971017	1133 DELAWARE RIVER OFF DUPONT EDGEMOOR
97032440	19971020	1133 OFF FOX POINT
97032563	19971021	1333 DEL RIVER S OF PA LINE
97035828	19971117	1333 DELAWARE RIVER OPPOSITE CAPTAINS DECK
97036865	19971127	1333 DE RIVER OPP CAPTAINS DECK
97037526	19971203	2034 W MAIN/DELAWARE PENNSGROVE
98000637	19980106	2033 DELAWARE RIVER NEAR KELLYS POINT
98001644	19980115	1533 DEL RIVER/POWER LINE
98007025	19980303	1533 DE RIVER NEAR PEA PATCH ISLAND
98008191	19980314	1133 DELAWARE RIVER OFF DOD, OLDMANS TWNSHP
98009023	19980321	1833 DELAWARE RIVER OFF DOBBINSVILLE
98011360	19980411	1834 DEL RIVER AREA RIVERVIEW INN
98011476	19980413	2933 DE RIVER OFF AUGUSTINE BEACH
98012151	19980418	1833 DELAWARE RIVER NORTH OF HAMBURG COVE
98012580	19980423	2933 DELAWARE RIVER 1/4 MI NORTH OF PORT PENN
98012747	19980424	2933 DELAWARE RIVER NEAR PORT PENN
98012783	19980424	2933 DELAWARE RIV/REEDY PT
98012861	19980425	2933 DELAWARE RIVER EAST OF REEDY POINT ISLAN
98012995	19980426	2033 DEL RIVER S DEL MEMO BRIDGE
98013531	19980501	2933 DELWARE RIVER OFF BAYVIEW BEACH
98013670	19980502	2033 DELAWARE RIV 1/4M S OF BRIDGE
98014275	19980507	2034 DELAWARE RIVER N OF DMB
98014527	19980509	1834 DELAWARE RIVER OFF BATTERY PARK
98015792	19980520	2033 DELAWARE RIVER/RIVERVIEW INN
98016243	19980624	2033 DEL RIVER SOUTH OF DEL MEMO BRIDGE

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98016351	19980525	1533 DELAWARE RIVER OFF DELAWARE CITY
98016841	19980529	2033 UNDER DELAWARE MEMORIAL BRIDGE
98017545	19980803	1834 DEL RIVER N OF JETTY OPP RIVERVIEW BEACH
98018261	19980809	1133 DEL RIVER OFF EDGEMOOR
98018969	19980615	1834 DELAWARE RIVER NEAR BATTERY PARK
98019595	19980620	2933 AUGUSTINE BEACH
98020028	19980624	1133 DEL RIVER BUOY 4 IN THE BELLVUE RANGE
98020432	19980628	2933 DELAWARE RIVER/C/D CANAL
98021387	19980706	1834 DE RIVER OFF PENNSVILLE
98022038	19980712	2033 DELAWARE RIVER S OF DMB
98022831	19980719	2033 DELAWARE RIVER, 1/4 MI S OF DMB
98023633	19980725	2033 DELAWARE RIVER UNDER DEL MEMO BRDG
98023599	19980726	1533 PEA PATCH ISLAND
98023685	19980726	1534 PEA PATCH ISLAND
98023743	19980727	1534 DEL RIVER OFF AUGUSTINE BEACH
98024337	19980801	1533 DELAWARE RIVER NORTH OF THE TOWERS
98024365	19980801	1533 DE RIVER NEAR NORTHERN TIP OF PEA PATCH
98024446	19980802	1533 DELAWARE RIVER, N OF STAR PIERS
98024718	19980804	1333 DELAWARE RIV/PA
98025332	19980809	1533 PEA PATCH ISLAND
98025970	19980814	1333 DEL RIVER OPP HOLLY OAK
98026167	19980816	1533 1533 DELAWARE RIVER, DELR
98026641	19980820	2033 DELAWARE RIVER OPP PENNSVILLE
98028496	19980906	1833 DEL RIVER OFF DEEMERS BEACH
98028501	19980906	1833 DEL RIVER JERSEY SIDE JETTY N POWER LINE
98029177	19980912	1133 DELAWARE RIVER/EDGEMOOR
98030010	19980919	2933 AUGUSTINE BEACH/SLUCE GATE
98030108	19980919	2033 DELAWARE RIVER, SOUTH OF DMB
98030811	19980925	1533 DELAWARE RIVER, 100 FT E OF REEDY ISLAND
98032207	19981006	1833 DELAWARE RIVER/BATTERY PARK
98032933	19981012	2933 DEL RIVER/NECULAR PLANT
98033302	19981015	1333 DEL RIVER OPP HARBOR HOUSE APTS
98033581	19981018	1133 DEL RIVER AT FOX POINT PARK
98033986	19981021	1533 DELAWARE RIVER/C/D CANAL
98035259	19981031	1533 1533 DELAWARE RIVER, DELR
98035470	19981102	2034 DEL RIV OPP CHAMBERS WORKS
98036434	19981110	2033 DEL RIVER S OF DMB
98036974	19981115	2933 DEL RIVER/S OF REEDY PT
98037391	19981118	1833 DELAWARE RIVER OFF DOBBINSVILLE
99000547	19990105	2933 DELAWARE RIVER OFF AUGUSTINE BEACH
99002631	19990120	1533 HAMBURG COVE
99008062	19990306	1833 DELAWARE RIVER OFF LLANGOLLEN ESTS
99010349	19990324	1834 DELAWARE RIVER END THIRD ST NEW CASTLE
99012113	19990407	1534 DELAWARE RIVER
99013304	19990417	2933 DEL RIVER #4L
99013888	19990422	1533 DEL RIVER UNDER THE POWER LINES
99013920	19990422	2933 DELAWARE RIVER
99014281	19990425	2933 DELAWARE RIVER
99014675	19990428	2933 DELAWARE RIVER N OF REEDY ISLAND
99015038	19990501	1833 DELAWARE RIVER BULKHEAD BAR BACK CHANNEL
99015071	19990501	2034 DELAWARE RIVER OFF AUGUSTINE BEACH
99016043	19990509	1533 DELAWARE RIVER OFF DEL CITY

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99016576	19990514	1834 DEL RIVER NEAR E 6TH ST
99016693	19990514	2933 DELAWARE RIVER OFF ARTIFICIAL ISLAND
99017021	19990517	2033 DEL RIVER SOUTH OF BRIDGE
99018550	19990529	2033 DEL RIVER 1/4 M S OF BRIDGE
99018596	19990529	2933 DELAWARE RIVER
99018831	19990531	1533 DELAWARE RIV/C/D CANAL
99019944	19990609	2933 DELAWARE RIVER SOUTH OF REEDY ISLAND
99020322	19990612	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
99020399	19990613	1534 C AND D CANAL/DELAWARE RIVER, DELR
99021040	19990618	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
99021143	19990619	1533 DELAWARE RIVER/HAMBURG COVE, DELR
99021163	19990620	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
99021168	19990620	1833 BULKHEAD SHOAL/DELAWARE RIVER, DELR
99021169	19990620	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
99022214	19990628	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
99022275	19990629	1333 DELAWARE RIVER/HARBOR HOUSE APTS, DELR
99022681	19990702	2933 DELAWARE RIVER/OAKWOOD BEACH, DELR
99023006	19990704	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
99023015	19990704	1833 DELAWARE RIVER/3RD STREET
99023167	19990705	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
99023954	19990711	1534 C AND D CANAL/DELAWARE RIVER, DELR
99023961	19990711	1533 DELAWARE RIVER/MOTIVA PIERS
99024167	19990713	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
99024681	19990717	1533 1533 DELAWARE RIVER, DELR
99025448	19990724	1534 C AND D CANAL/DELAWARE RIVER, DELR
99025853	19990727	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
99026169	19990730	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
99027600	19990809	1333 DEL RIVER OPP GRUBBS LANDING
99027832	19990811	2933 DELAWARE RIVER/REEDY ISLAND, DELR
99028259	19990814	2033 DELAWARE RIVER S OF DEL MEM BRI
99028273	19990814	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
99029179	19990821	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
99029262	19990822	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
99030364	19990831	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
99030557	19990902	2033 ARMY CREEK/DELAWARE RIVER, DELR
99030613	19990902	1533 1533 DELAWARE RIVER, DELR
99031191	19990906	1834 DELAWARE RIVER/RIVERVIEW BEACH, DELR
99031347	19990908	1133 DELAWARE RIVER/FOX POINT PARK, DELR
99031790	19990911	1834 DELAWARE RIVER OFF PENNSVILLE BEACH
99031890	19990912	1533 DEL RIVER JETTY BY POWER LINES
99032883	19990917	1834 DELAWARE RIVER/PENNS BEACH, DELR
99033426	19990920	1833 DELAWARE RIVER SOUTH OF BATTERY PARK
99034822	19991001	1534 C AND D CANAL/DELAWARE RIVER, DELR
99036030	19991011	1834 DELAWARE RIVER OPPOSITE PENNSVILLE
99036209	19991012	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
99037440	19991022	1333 DELAWARE RIVER/HOLLY OAK, DELR
99038456	19991030	1333 CITISTEEL MILL/DELAWARE RIVER, DELR
99040519	19991114	1833 DELAWARE RIVER JUST SOUTH OF DEL MEM
99041666	19991123	1533 DELAWARE RIVER MOUTH OF CANAL SOUTH SIDE
8659	20000307	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
11337	20000327	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
12114	20000402	1533 DELAWARE RIVER/MOTIVA PEIR

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13896	20000416	1834 BATTERY PARK/DELAWARE RIVER, DELR
14973	20000424	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
16601	20000506	1533 1533 DELAWARE RIVER, DELR
16751	20000507	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
17447	20000512	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
19211	20000525	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
20549	20000604	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
20940	20000607	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
21020	20000608	1834 DEL RIVER OFF BOAT RAMP NEWCASTLE
21381	20000610	1533 1533 DELAWARE RIVER, DELR
22037	20000615	1534 DELAWARE RIVER MOUTH SALEM RIVER
23030	20000620	1834 DELAWARE RIVER/PENNS BEACH, DELR
23322	20000623	1833 DELAWARE RIVER NORTH OF POWER LINES
23411	20000623	1534 DELAWARE RIVER/SALEM RIVER, DELR
23563	20000624	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
24499	20000701	1533 DELAWARE RIVER NORTH OF PEA PATCH ISLAND
24610	20000702	1533 DEL RIVER/MOTIVA PIERS
25420	20000708	1834 DELAWARE RIVER/RIVERVIEW BEACH, DELR
26142	20000713	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
26995	20000720	1533 1533 DELAWARE RIVER, DELR
27325	20000723	2933 DELAWARE RIVER/REEDY ISLAND, DELR
27337	20000723	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
28827	20000803	1834 DELAWARE RIVER OFF NEW CASTLE
31095	20000820	1534 DELAWARE RIVER NEAR REEDY POINT
31318	20000822	1834 BATTERY PARK/DELAWARE RIVER, DELR
31635	20000824	1834 BATTERY PARK/DELAWARE RIVER, DELR
31913	20000826	1534 C AND D CANAL/DELAWARE RIVER, DELR
33012	20000903	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
33081	20000904	1833 DELAWARE RIVER NEAR HAMBURG COVE
33110	20000904	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
34596	20000915	1834 DELAWARE RIVER/NEW CASTLE FLATS, DELR
34616	20000915	1534 C AND D CANAL/DELAWARE RIVER, DELR
34618	20000915	1534 C AND D CANAL/DELAWARE RIVER, DELR
34838	20000917	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
35118	20000919	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
35564	20000922	1533 DELAWARE RIVER JETTY JUST N OF DEL CITY
35590	20000923	1133 DELAWARE RIVER APPROX 2 MILES N PORT
35593	20000923	1533 1533 DELAWARE RIVER, DELR
36594	20000930	1533 1533 DELAWARE RIVER, DELR
36740	20001001	2033 DELAWARE RIVER
39288	20001020	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
40705	20001031	1533 1533 DELAWARE RIVER, DELR
41246	20001103	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
41286	20001104	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
41915	20001108	1534 C AND D CANAL/DELAWARE RIVER, DELR
44314	20001127	1834 DELAWARE RIVER/NEW CASTLE FLATS, DELR
1000413	20010103	2933 DELAWARE RIVER AREA ARTIFICIAL ISLAND
1008601	20010307	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
1013018	20010409	1833 DEEMERS BEACH/DELAWARE RIVER, DELR
1015107	20010426	1133 DELAWARE RIVER AREA EDGEMOOR
1015512	20010428	1834 BATTERY PARK/DELAWARE RIVER, DELR
1015777	20010430	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR

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1017396	20010511	1534 C AND D CANAL/DELAWARE RIVER, DELR
1017422	20010511	1534 DELAWARE RIVER/ST GEORGES CREEK, DELR
1017696	20010513	1533 1533 DELAWARE RIVER, DELR
1019108	20010522	1133 DELAWARE RIVER/STONE CREEK, DELR
1019479	20010525	2033 DELAWARE RIVER/RIVER EDGE IND PARK
1020697	20010603	1533 1533 DELAWARE RIVER, DELR
1021250	20010607	2933 DELAWARE RIVER/REEDY ISLAND, DELR
1021523	20010609	2933 DELAWARE RIVER OFF AUGUSTINE BEACH
1021638	20010610	1834 DELAWARE RIVER OFF BATTERY PARK
1022113	20010613	1133 CHERRY ISLAND FLAT/DELAWARE RIVER, DELR
1022299	20010614	1834 DELAWARE RIVER/NEW CASTLE FLATS, DELR
1023451	20010622	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
1023595	20010623	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
1023618	20010624	2933 DELAWARE RIVER/REEDY ISLAND, DELR
1024511	20010630	1133 DELAWARE RIVER/FOX POINT PARK, DELR
1024648	20010701	1534 DELAWARE RIVER/HIGH POWER LINES
1024666	20010701	1834 BATTERY PARK/DELAWARE RIVER, DELR
1024686	20010701	1834 BATTERY PARK/DELAWARE RIVER, DELR
1024728	20010701	1333 DELAWARE RIVER/OLDMANS CREEK, DELR
1025971	20010710	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
1026142	20010711	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
1026287	20010712	1834 BATTERY PARK/DELAWARE RIVER, DELR
1026516	20010714	1133 DELAWARE RIVER/OLDMANS POINT, DELR
1026633	20010715	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
1027483	20010721	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
1028029	20010725	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
1030073	20010809	2933 DELAWARE RIVER/REEDY ISLAND, DELR
1030510	20010811	1533 1533 DELAWARE RIVER, DELR
1032700	20010826	1534 C AND D CANAL/DELAWARE RIVER, DELR
1033302	20010831	1834 DELAWARE RIVER/RIVERVIEW BEACH, DELR
1034362	20010907	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
1034410	20010908	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
1036319	20010921	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
1038160	20011004	1834 DELAWARE RIVER/PENNS BEACH, DELR
1039053	20011010	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
1039145	20011011	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
1039415	20011013	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
1039915	20011016	2933 50 DELAWARE RIVER, DELR
1041021	20011024	1133 DELAWARE RIVER NEAR EDGEMOOR
1041422	20011027	1533 1533 DELAWARE RIVER, DELR
1042571	20011103	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
1043651	20011111	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
1046027	20011121	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
1045305	20011123	2933 DELAWARE RIVER/PORT PENN, DELR
2002054	20020115	1834 BATTERY PARK/DELAWARE RIVER, DELR
2003396	20020124	1133 CHERRY ISLAND FLAT/DELAWARE RIVER, DELR
2013360	20020406	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2013735	20020409	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2014224	20020412	1333 DELAWARE RIVER/HOLLY OAK, DELR
2017342	20020504	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
2018811	20020514	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2019107	20020516	1834 DELAWARE RIVER/RIVERVIEW BEACH, DELR

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2020456	20020525	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
2020663	20020527	1833 BULKHEAD SHOAL/DELAWARE RIVER, DELR
2021575	20020601	1834 BATTERY PARK/DELAWARE RIVER, DELR
2021680	20020602	1133 DELAWARE RIVER/OLDMANS POINT, DELR
2022162	20020805	1533 1533 DELAWARE RIVER, DELR
2022217	20020605	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
2022707	20020609	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2022739	20020609	1333 DELAWARE RIVER/OLDMANS CREEK, DELR
2023582	20020615	1533 1533 DELAWARE RIVER, DELR
2023626	20020615	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2023752	20020616	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2024432	20020621	1533 1533 DELAWARE RIVER, DELR
2024552	20020622	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2025017	20020625	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
2025026	20020625	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2025058	20020626	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
2025187	20020626	1534 C AND D CANAL/DELAWARE RIVER, DELR
2026088	20020702	1133 DELAWARE RIVER/FOX POINT PARK, DELR
2026251	20020703	1333 DELAWARE RIVER/PA STATE LINE, DELR
2026311	20020704	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2026338	20020704	1534 C AND D CANAL/DELAWARE RIVER, DELR
2026558	20020705	1834 DELAWARE RIVER/RIVERVIEW BEACH, DELR
2026660	20020706	2933 ALLOWAY CREEK/DELAWARE RIVER, DELR
2026820	20020707	1333 DELAWARE RIVER/HARBOR HOUSE APTS, DELR
2027004	20020709	1534 DELAWARE RIVER/SALEM RIVER, DELR
2027434	20020711	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
2027876	20020714	1834 DELAWARE RIVER/RIVERVIEW BEACH, DELR
2027961	20020715	1534 DELAWARE RIVER/SALEM COVE, DELR
2028102	20020716	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2028237	20020717	1534 C AND D CANAL/DELAWARE RIVER, DELR
2029008	20020722	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
2029430	20020725	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
2029888	20020728	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
2031016	20020804	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
2031047	20020804	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2031062	20020804	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2031139	20020805	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
2031643	20020808	1534 DELAWARE RIVER/SALEM COVE, DELR
2031979	20020810	1834 DELAWARE RIVER/RIVERVIEW BEACH, DELR
2033017	20020817	1533 1533 DELAWARE RIVER, DELR
2033214	20020818	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
2034274	20020825	1534 C AND D CANAL/DELAWARE RIVER, DELR
2038261	20020922	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
2039157	20020928	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
2039937	20021003	2933 DEL RIVER BAKER RANGE
2041243	20021012	2933 DELAWARE RIVER/REEDY ISLAND, DELR
2045255	20021109	1534 DELAWARE RIVER/SALEM COVE, DELR
2046762	20021120	1533 1533 DELAWARE RIVER, DELR
2050759	20021218	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
2052620	20021231	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
3000884	20030107	2933 DELAWARE RIVER/REEDY ISLAND, DELR
3003463	20030126	1533 1533 DELAWARE RIVER, DELR

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3004699	20030204	1133 DELAWARE RIVER/FOX POINT PARK, DELR
3007601	20030222	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
3011941	20030324	1533 1533 DELAWARE RIVER, DELR
3012692	20030329	1133 DELAWARE RIVER/FOX POINT PARK, DELR
3015273	20030418	1534 C AND D CANAL/DELAWARE RIVER, DELR
3016553	20030427	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
3016620	20030427	1333 DELAWARE RIVER/HOLLY OAK, DELR
3016793	20030428	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
3017506	20030503	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
3017614	20030504	2933 DELAWARE RIVER/REEDY ISLAND, DELR
3017773	20030505	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
3018944	20030514	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
3018952	20030514	1533 BRANCH CANAL, DELAWARE CITY
3021525	20030602	2933 DELAWARE RIVER/ELISINBORO POINT, DELR
3022105	20030607	1533 BRANCH CHANNEL/DELAWARE RIVER, DELR
3022254	20030608	1834 DELAWARE RIVER/RIVERVIEW BEACH, DELR
3023123	20030613	1533 1533 DELAWARE RIVER, DELR
3023455	20030615	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
3024359	20030621	1533 BRANCH CANAL/DELAWARE RIVER, DELR
3026000	20030701	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
3026415	20030704	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
3026723	20030706	1834 CEDAR POINT/DELAWARE RIVER, DELR
3027457	20030711	1133 DELAWARE RIVER/DUPONT EDGEMOOR PL, DELR
3027547	20030712	1834 BATTERY PARK/DELAWARE RIVER, DELR
3027595	20030712	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
3027744	20030713	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
3029438	20030725	1534 C AND D CANAL/DELAWARE RIVER, DELR
3029792	20030728	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
3029974	20030729	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
3030188	20030730	1834 BATTERY PARK/DELAWARE RIVER, DELR
3030206	20030730	1834 BATTERY PARK/DELAWARE RIVER, DELR
3030308	20030731	1133 DELAWARE RIVER/FOX POINT PARK, DELR
3030878	20030804	2033 150 DELAWARE RIVER, DELR
3032328	20030814	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
3032834	20030818	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
3033383	20030821	2933 DELAWARE RIVER/OAKWOOD BEACH, DELR
3033902	20030824	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
3034847	20030829	1834 BATTERY PARK/DELAWARE RIVER, DELR
3034767	20030830	1834 BATTERY PARK/DELAWARE RIVER, DELR
3034771	20030830	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
3034938	20030831	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
3035924	20030907	1534 C AND D CANAL/DELAWARE RIVER, DELR
3037413	20030916	1833 DEEMERS BEACH/DELAWARE RIVER, DELR
3038420	20030919	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
3040590	20031002	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
3041490	20031008	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
3041657	20031009	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
3042145	20031012	1133 DELAWARE RIVER/FOX POINT PARK, DELR
3044857	20031030	1333 DELAWARE RIVER/HARBOR HOUSE APTS, DELR
3045615	20031104	1333 DELAWARE RIVER SOUTH OF CLAYMONT
3046388	20031109	1534 C AND D CANAL/DELAWARE RIVER, DELR
3046932	20031113	1534 C AND D CANAL/DELAWARE RIVER, DELR

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3046997	20031113	2933 DELAWARE RIVER AT THE REEDY ISLAND BAR
4000764	20040106	2033 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
4016114	20040423	2933 DELAWARE RIVER/REEDY ISLAND, DELR
4016209	20040424	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
4017780	20040505	1533 1533 DELAWARE RIVER, DELR
4018404	20040509	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
4019048	20040513	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
4019805	20040517	1833 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
4020487	20040523	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
4020506	20040523	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
4020528	20040523	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
4021078	20040527	1533 DELAWARE RIVER/MOTIVA PIERS, DELR
4021237	20040528	1133 DELAWARE RIVER/DUPONT EDMOOR PL, DELR
4021344	20040529	2933 DELAWARE RIVER/REEDY ISLAND, DELR
4021364	20040529	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
4021498	20040530	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
4021959	20040602	1534 C AND D CANAL/DELAWARE RIVER, DELR
4022765	20040608	1133 DELAWARE RIVER/FOX POINT PARK, DELR
4023477	20040812	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
4024516	20040618	1833 BULKHEAD SHOAL/DELAWARE RIVER, DELR
4024608	20040619	2034 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
4024615	20040619	2034 DELAWARE RIVER/DUPONT CHAMBERS WO, DELR
4024804	20040620	2933 DELAWARE RIVER/REEDY ISLAND, DELR
4025191	20040623	2933 DELAWARE RIVER/REEDY ISLAND, DELR
4025690	20040627	1333 DELAWARE RIVER/FOX POINT PARK, DELR
4026642	20040703	1533 1533 DELAWARE RIVER, DELR
4026648	20040703	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
4026723	20040704	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
4026751	20040704	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
4026907	20040705	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
4026971	20040706	1834 BATTERY PARK/DELAWARE RIVER, DELR
4029206	20040720	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
4029376	20040721	1534 C AND D CANAL/DELAWARE RIVER, DELR
4029787	20040724	1834 DELAWARE RIVER OFF PENNS BEACH
4029829	20040725	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
4029867	20040725	1533 DELAWARE RIVER/FOX POINT PARK, DELR
4030793	20040731	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
4031587	20040806	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
4031805	20040806	2034 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
4031698	20040807	1533 1533 DELAWARE RIVER, DELR
4033851	20040822	1534 DELAWARE RIVER/SALEM RIVER, DELR
4034383	20040826	1834 BATTERY PARK/DELAWARE RIVER, DELR
4034567	20040827	1834 BATTERY PARK/DELAWARE RIVER, DELR
4034885	20040828	1534 DELAWARE RIVER/SALEM RIVER, DELR
4034885	20040828	2933 DELAWARE RIVER/OAKWOOD BEACH, DELR
4034771	20040829	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
4035829	20040905	1834 BATTERY PARK/DELAWARE RIVER, DELR
4036548	20040910	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
4036691	20040911	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
4037782	20040918	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
4041310	20041010	1534 DELAWARE RIVER/SALEM RIVER, DELR
4041329	20041010	1333 DELAWARE RIVER/PA STATE LINE, DELR

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4041344	20041010	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
4048107	20041127	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
4048586	20041201	2033 DELAWARE RIVER OPPOSITE PENNSVILLE
4050030	20041211	1834 DELAWARE RIVER/PENNS BEACH, DELR
4050081	20041212	1834 DELAWARE RIVER/NEW CASTLE FLATS, DELR
4052213	20041227	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
4052449	20041228	2933 DELAWARE RIVER/MILL CREEK COVE, DELR
5015788	20050403	2933 DELAWARE RIVER/REEDY ISLAND, DELR
5016055	20050405	2933 DELAWARE RIVER/REEDY ISLAND, DELR
5018098	20050417	2933 DELAWARE RIVER/OAKWOOD BEACH, DELR
5018470	20050419	2933 DELAWARE RIVER NEAR REEDY ISLAND BAR
5020902	20050504	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
5021606	20050508	1534 DELAWARE RIVER/SALEM COVE, DELR
5021776	20050509	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
5022424	20050513	1534 C AND D CANAL/DELAWARE RIVER, DELR
5022457	20050513	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
5022717	20050515	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
5023128	20050517	2933 DELAWARE RIVER/REEDY ISLAND, DELR
5024019	20050522	2933 DELAWARE RIVER/PORT PENN, DELR
5025003	20050528	1834 BATTERY PARK/DELAWARE RIVER, DELR
5025326	20050530	2933 DELAWARE RIVER/AUGUSTINE BEACH
5026221	20050604	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
5027051	20050609	1533 DELAWARE RIVER/PREMCOR PIERS, DELR
5027624	20050612	1133 DELAWARE RIVER/FOX POINT PARK, DELR
5027763	20050613	1534 C AND D CANAL/DELAWARE RIVER, DELR
5028505	20050618	1533 1533 DELAWARE RIVER, DELR
5029705	20050625	1533 1533 DELAWARE RIVER, DELR
5029712	20050625	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
5030596	20050630	1534 DELAWARE RIVER/SALEM RIVER, DELR
5031107	20050703	2933 DELAWARE RIVER/REEDY ISLAND BAR, DELR
5034500	20050723	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
5035825	20050731	2933 DELAWARE RIVER ACROSS FROM ARTIFICIAL IS
5036572	20050804	2034 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
5036869	20050806	1533 DELAWARE RIVER/PREMCOR PIERS, DELR
5037006	20050807	1534 C AND D CANAL/DELAWARE RIVER, DELR
5038118	20050813	1333 DELAWARE RIVER OPPOSITE GRUBBS LANDING
5039375	20050821	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
5040087	20050825	1133 DELAWARE RIVER/FOX POINT PARK, DELR
5040247	20050826	1333 DELAWARE RIVER/HOLLY OAK, DELR
5040573	20050828	1834 DELAWARE RIVER/PENNS BEACH, DELR
6040639	20050829	1534 DELAWARE RIVER/SALEM RIVER, DELR
5041409	20050902	1534 C AND D CANAL/DELAWARE RIVER, DELR
5041442	20050902	2034 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
5041716	20050904	1834 DELAWARE RIVER/NEW CASTLE FLATS, DELR
5042588	20050909	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
5045097	20050923	1133 DELAWARE RIVER/OLDMANS POINT, DELR
5045288	20050924	1133 CHERRY ISLAND FLAT/DELAWARE RIVER, DELR
5045448	20050925	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
5046481	20051001	1534 DELAWARE RIVER/PEA PATCH ISLAND, DELR
5046616	20051002	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
5048993	20051016	1834 BATTERY PARK/DELAWARE RIVER, DELR
5049630	20051020	2933 DELAWARE RIVER/REEDY ISLAND, DELR

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5050206	20051024	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
5052298	20051105	2933 DELAWARE RIVER/REEDY ISLAND, DELR
5054009	20051115	2034 DEL MEMO BRIDGE/DELAWARE RIVER, DELR
5056744	20051201	1133 DELAWARE RIVER/FOX POINT PARK, DELR
6006300	20060207	1534 C AND D CANAL/DELAWARE RIVER, DELR
6008048	20060217	1534 C AND D CANAL/DELAWARE RIVER, DELR
6010862	20060306	1533 1533 DELAWARE RIVER, DELR
6016462	20060407	1534 BULKHEAD SHOAL CHA/DELAWARE RIVER, DELR
6017099	20060411	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
6018714	20060420	1534 C AND D CANAL/DELAWARE RIVER, DELR
6020074	20060428	1534 DELAWARE CITY CANAL/DELAWARE RIVER, DELR
6020553	20060501	2933 DELAWARE RIVER/SOUTH OF CANAL
6022072	20060509	1133 DELAWARE RIVER/DUPONT EDGEMOOR PL, DELR
6027267	20060606	1639 BRANCH CANAL/DELAWARE RIVER, DELR
6027274	20060606	1533 BRANCH CANAL/DELAWARE RIVER, DELR
6027894	20060610	1533 DELAWARE RIVER/C/D CANAL
6028513	20060613	2933 ARTIFICIAL ISLAND/DELAWARE RIVER, DELR
6033353	20060709	1834 DELAWARE RIVER/RIVERVIEW BEACH, DELR
6033395	20060710	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
6034983	20060718	1834 DELAWARE RIVER/PENNS BEACH, DELR
6036258	20060725	2933 DELAWARE RIVER/MILL CREEK COVE, DELR
6036509	20060727	1533 1533 DELAWARE RIVER, DELR
6036767	20060728	1834 BATTERY PARK/DELAWARE RIVER, DELR
6037310	20060731	2033 DELAWARE RIVER/TRAVIS COVE, DELR
6038219	20060805	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
6038394	20060806	1133 DELAWARE RIVER/FOX POINT PARK, DELR
6040038	20060816	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
6043443	20060903	2933 DELAWARE RIVER/REEDY ISLAND, DELR
6043595	20060904	1533 DELAWARE RIVER/HIGH POWER LINES, DELR
6044592	20060910	2933 DELAWARE RIVER/ST GEORGES CREEK, DELR
6044983	20060912	2933 AUGUSTINE BEACH/DELAWARE RIVER, DELR
6045912	20060918	2933 DELAWARE RIVER/OAKWOOD BEACH, DELR

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DNREC Air and Waste Management Complaint Files

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Object Of Complaint:

Start Date: delaware f%

Location:

Nature:

County:

End Date:

Reported By:  
Dispositions:

Action Comment:

Assigned EPO:

Section:

Division:

Year	Complaint #	Date	EPO	Location	Section	Nature	Object of Complaint Name	Action Comment
1986	10066	07/12/1986	51	DELAWARE RIVER & BRANCH CANAL		OIL SPILL	TEXACO	CLOSED
1986	10687	10/07/1986	51	DELAWARE RIVER ACROSS FROM DP&L EDGEMOOR		OIL SPILL	Unknown(no info)	CLOSED
1988	1851	03/14/1988	11	DELAWARE RECLAMATION CENTER		DUMPING	Unknown(no info)	SERT
1989	2145	08/24/1989	709	DELAWARE RIVER OFF CLAYMONT		OIL SPILL	PRESIDENTE RIVERA TANKER	CLOSED
1989	11339	10/27/1989	704	DELAWARE RIVER NEAR PIER AREA OF STAR ENTERPR		OIL SPILL	Unknown	
1990	1853	01/31/1990	704	DELAWARE RIVER AT MARCUS HOOK		OIL SPILL	Unknown(no info)	CLOSED
1990	2522	03/31/1990	702	DELAWARE RIVER OFF EDGEMOOR WILMINGTON		OIL SPILL	Unknown(no info)	CLOSED
1990	10474	08/07/1990	707	DELAWARE RIVER FM CLAYMONT TO DE MEMORIAL BR		OIL SPILL	SUN OIL REFINERY	CLOSED
1990	10720	08/25/1990	704	DELAWARE RIVER DUPONT CHAMBERS WORKS		DISCHARGE	DUPONT-CHAMBER WORKS	CLOSED
1990	10915	09/10/1990	702	DELAWARE RIVER AT BUOY 32		OIL SPILL	VESSEL WORLD VEAL	CLOSED
1991	181	01/28/1991	701	DELAWARE RIVER DELAWARE CITY AREA		OIL SPILL	VESSEL FAITH ONE	CLOSED
1991	1250	05/06/1991	707	DELAWARE RIVER, PA & DE BORDER		OIL SPILL	SUN OIL CO.	CLOSED
1992	183	01/10/1992	709	DELAWARE RIVER OFF PENNSVILLE		ABANDONED DRUMS	Unknown(no info)	USCG
1992	597	02/19/1992	709	DELAWARE RIVER (AROUND STAR ENTER. PORT)		OIL SPILL	Unknown(no info)	CLOSED
1992	872	03/07/1992	703	DELAWARE RIVER AT MEMORIAL BRIDGE		DISCHARGE	Unknown(no info)	CLOSED
1992	1445	04/22/1992	712	DELAWARE RIVER - PA SIDE		OIL SPILL	MODULAR HOME COMMUNITIE	CLOSED
1992	2485	06/23/1992	707	DELAWARE RIVER		OIL SPILL	Unknown(no info)	CLOSED
1993	203	01/13/1993	704	DELAWARE RIVER BEHIND GENERAL CHEMICAL		OIL SPILL	Unknown(no info)	CLOSED
1993	1435	03/24/1993	712	DELAWARE RIVER NEAR GENERAL CHEMICAL		SPILL	Unknown(no info)	CLOSED
1993	1463	03/25/1993	701	DELAWARE RIVER FROM PENNSVILLE NJ		DISCHARGE	Unknown(no info)	CLOSED
1993	1829	04/09/1993	709	DELAWARE RIVER 3 MI N/O DELAWARE MEM BRIDGE		OIL SPILL	Unknown(no info)	ERB C BERLIN
1993	2318	04/28/1993	712	DELAWARE RIVER		DISCHARGE	Unknown(no info)	ERB AW-17
1993	2604	05/04/1993	711	DELAWARE RIVER		SPILL	DUPONT EDGEMOOR	CLOSED
1993	3567	06/13/1993	709	DELAWARE RIVER NEAR MARCUS HOOK		OIL SPILL	SUN OIL REFINERY / MARCUS	SERT JACKSON
1993	3498	06/18/1993	702	DELAWARE RIVER		DIESEL FUEL SPILL	SAFETY KLEEN	CLOSED

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Object Of Complaints

Start Date: delaware 1%

Locations:

Nature:

County:

End Date: Active Comment:  
 Reported By: Disposition: Assigned EPO:  
 Sections:

Year	Complaint #	Date	EPO	Location	Nature	Object of Complaint Name	Action Comment
1993	3848	07/03/1993	711	DELAWARE RT 202 FAIRFAX AREA	ODOR	Unknown(no info)	CLOSED
1993	3992	07/13/1993	702	DELAWARE RIVER	SPILL	STAR ENTERPRISE	SEE COMP 3970
1993	6044	11/12/1993	704	DELAWARE RIVER	SHEEN	Unknown(no info)	CLOSED
1994	327	01/31/1994	702	DELAWARE RIVER BIT TEXACO DOCKS & C&D CANAL	SPILL	Unknown(no info)	CLOSED
1994	2128	05/24/1994	712	DELAWARE RIVER	ABANDONED CYLINDER	Unknown(no info)	CLOSED
1994	2276	08/02/1994	707	DELAWARE RIVER, STAR ENTERPRISE	DISCHARGE	STAR ENTERPRISE	CLOSED
1994	3342	07/31/1994	700	DELAWARE RIVER	DISCHARGE	TOM NEUMANN / MARISPOND	SEE COMP 3341
1994	4029	09/11/1994	706	DELAWARE RIVER	OIL SHEEN	Unknown(no info)	CLOSED
1995	126	01/08/1995	708	DELAWARE RIVER, DELAWARE CITY	DISCHARGE	Unknown(no info)	CLOSED
1995	1914	04/12/1995	707	DELAWARE RIVER	OIL SPILL	Unknown(no info)	SEE COMP 1904
1995	2834	05/23/1995	709	DELAWARE RIVER NO STAR ENTERPRISE DOCKS	PERMIT CHECK	STAR ENTERPRISE	CLOSED
1995	3179	06/08/1995	700	DELAWARE RIVER	DUMPING	Unknown(no info)	CLOSED
1995	3525	09/24/1995	707	DELAWARE RIVER	SHEEV/ SPILL	Unknown(no info)	CLOSED
1996	15	01/02/1996	711	DELAWARE RIVER @ EDGEMOOR	SPILL	Unknown(no info)	CLOSED
1996	68	01/01/1996	702	DELAWARE RIVER 3-G DOCK	SPILL	SUN OIL REFINERY	CLOSED
1996	209	01/23/1996	704	DELAWARE RIVER NEAR FOX POINT IN THE CHANNEL	ABANDONED DRUMS	Unknown(no info)	CLOSED
1996	1406	04/02/1996	704	DELAWARE RIVER @ HAY RD WWTP, WILMINGTON	DISCHARGE	CITY OF WILMINGTON PUBLIC	CLOSED
1996	1862	04/18/1996	711	DELAWARE RIVER NEAR THE STAR DOCKS DEL CITY	SPILL	Unknown(no info)	CLOSED
1996	1989	04/25/1996	711	DELAWARE RIVER 670 PEA PATCH ISLAND	DISABLED VESSEL	A-1 TOWING INC / BARGE PPT.	CLOSED
1996	2414	05/16/1996	709	DELAWARE RIVER AT PEA PATCH ISLAND	SPILL	Unknown(no info)	CLOSED
1996	3102	05/15/1996	704	DELAWARE RIVER NJ SIDE N/O REEDY ISL PORT PEN	SPILL	Unknown(no info)	CLOSED
1996	4016	07/22/1996	704	DELAWARE RIVER	SPILL	EAGLE POINT	CLOSED
1996	4139	07/26/1996	702	DELAWARE RIVER, GLOUCSTER, NJ	SPILL	Unknown(no info)	CLOSED
1996	4642	08/18/1996	705	DELAWARE RIVER W/S NEAR CHRISTIANA RIVER	DISCHARGE	Unknown(no info)	CLOSED
1996	5182	09/18/1996	707	DELAWARE RIVER, DELAWARE COUNTY, PA	SPILL	Unknown(no info)	CLOSED
1996	5480	10/03/1996	707	DELAWARE RIVER @ STAR ENTERPRISE	OIL SPILL	VOSHELL, FREDERICK	CLOSED

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Year	Complaint #	Date	EPO	Location	Section	Reported By:	Nature	Object of Complaint Name	Action Comment
1996	6098	11/05/1998	707	DELAWARE RIVER			SPILL	SUN OIL REFINERY	CLOSED
1996	6480	11/28/1998	705	DELAWARE RIVER NEAR PENNS GROVE NJ			SPILL	Unknown(no info)	CLOSED
1996	6528	12/02/1998	704	DELAWARE RIVER MOBIL OIL REFINERY			SPILL	MOBILE OIL CO.	CLOSED
1996	6878	12/18/1998	707	DELAWARE RIVER BY DP&L IN EDGEMOOR			SPILL	Unknown(no info)	CLOSED
1996	6883	12/18/1998	707	DELAWARE RIVER IN EDGEMOOR BY FOX POINT PARK			SPILL	Unknown(no info)	CLOSED
1997	152	01/15/1997	709	DELAWARE RIVER			SPILL	VAN BROTHERS	CLOSED
1997	467	02/10/1997	705	DELAWARE RIVER			SPILL	DELAWARE RIVER	CLOSED
1997	517	02/14/1997	702	DELAWARE RIVER			SPILL	Unknown(no info)	CLOSED
1997	718	03/02/1997	704	DELAWARE RIVER			SPILL	Unknown(no info)	CLOSED
1997	862	03/14/1997	702	DELAWARE RECYCLE LAN			FIRE	DELAWARE RECYCLABLE PRC	CLOSED
1997	899	03/17/1997	711	DELAWARE RIVER			DISCHARGE	CITY OF WILMINGTON WASTE	NR4334
1997	1106	03/28/1997	709	DELAWARE RIVER			SPILL	ICI AMERICAS	CLOSED
1997	3038	07/12/1997	704	DELAWARE RIVER			SPILL	SUN OIL CO	CLOSE
1997	3702	08/14/1997	709	DELAWARE RIVER NO DELAWARE CITY			SPILL	Unknown(no info)	CLOSED
1997	3708	08/14/1997	707	DELAWARE RIVER			DUMPING	Unknown(no info)	CLOSED
1997	4295	09/08/1997	711	DELAWARE RECYCLEABLE			SPILL	DRPI	CLOSED
1997	5245	10/17/1997	707	DELAWARE RIVER			SPILL	Unknown(no info)	CLOSED
1997	5642	11/10/1997	704	DELAWARE RECYCLING			SPILL	Unknown(no info)	CLOSED
1998	30	01/03/1998	707	DELAWARE RIVER			OS	DELAWARE RECYCLABLE PRC	CLOSED
1998	766	02/19/1998	711	DELAWARE RIVER			EXCEEDANCE	Unknown	CLOSED
1998	1404	03/27/1998	704	DELAWARE RIVER NEAR NEW CASTLE			SPILL	Unknown	CLOSED
1998	2192	05/13/1998	707	DELAWARE RIVER CAMDNE NJ			SPILL	MCCALLESTER TUG	CLOSED
1998	2421	05/26/1998	711	DELAWARE RT 9 NORTH OF NEW CASTLE NEW CASTLE			SPILL	REGNIERS REFRIGERATED E	NR741B
1998	2834	06/13/1998	711	DELAWARE RIVER VICTORY BUS GARAGE 110 VICTORY			SPILL	HOPKINS, RON T/A SEPTA	CLOSED
1998	3325	07/10/1998	707	DELAWARE RIVER WILMINGTON			SPILL	ZENECA	CLOSED
1998	4378	08/03/1998	702	DELAWARE RIVER			SPILL	Unknown	CLOSED
1998	4380	08/03/1998	702	DELAWARE RIVER			SPILL	Unknown	CLOSED
1998	4651	08/14/1998	704	DELAWARE RIVER			SPILL	SCOPIC SHIP MANAGE	CLOSED
1998	4552	09/14/1998	704	DELAWARE RIVER			EXCEEDANCE	Unknown	CLOSED
1998	4553	09/14/1998	704	DELAWARE RIVER			SPILL	Unknown	CLOSED
1998	4995	10/14/1998	707	DELAWARE RIVER AT MOTIVA ENTERPRISES DE CITY			EXCEEDANCE	NEW IDEAL SHIPPING CORP	NR7503

DNREC Air and Waste Management Complaint Files

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Object Of Complaint:

Start Date: delaware r/c  
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 Assigned EPO:

Action Comment:

Section:

Division:

Year	Complaint #	Date	EPO	Location	Nature	Object of Complaint Name	Action Comment
1998	5697	11/22/1998	707	DELAWARE RIVER	SPILL	UNKNOWN	CLOSED
1998	5008	12/17/1998	709	DELAWARE RIVER PORT OF WILMINGTON	EROSION	US ARMY CORP OF ENGINEER	CLOSED
1999	143	01/12/1999	705	DELAWARE RIVER	RELEASE	NRC	CLOSED
1999	382	01/28/1999	707	DELAWARE RIVER GLOUCESTER NJ	SPILL	UNKNOWN	CLOSED
1999	757	02/18/1999	711	DELAWARE RIVER AT THE PENN TERMINAL CHESTER	SPILL	DROOP, RON / MORAN DRYBU	CLOSED
1999	827	02/24/1999	708	DELAWARE REFINERY	EXCEEDANCE	DP&L	CLOSED
1999	698	03/01/1999	704	DELAWARE RIVER	EXCEEDANCE	UNKNOWN	CLOSED
1999	1239	03/24/1999	702	DELAWARE RIVER	EXCEEDANCE	UNKNOWN	CLOSED
1999	2023	05/05/1999	708	DELAWARE RIVER @ FOX POINT PARK	OS	SHIP COLORADO	CLOSED
1999	2265	05/18/1999	709	DELAWARE RIVER TRAINER	SPILL	UNKNOWN	CLOSED
1999	2384	05/22/1999	709	DELAWARE RIVER MEMORIAL BRIDGE	EXCEEDANCE	UNKNOWN	CLOSED
1999	2500	05/30/1999	702	DELAWARE RIVER	SPILL	MOTIVA ENTERPRISE	CLOSED
1999	2722	06/11/1999	711	DELAWARE RIVER GENERAL CHEMICAL	ASSIST	GENERAL CHEMICAL	CLOSED
1999	2736	06/12/1999	711	DELAWARE RIVER, MARCUS HOOK S/O CLAYMONT	EXCEEDANCE	UNKNOWN	CLOSED
1999	2737	06/12/1999	711	DELAWARE RIVER, NORTH OF PEA PATCH ISLAND	ASSIST	BLASCH, DAVID	CLOSED
1999	4486	06/20/1999	711	DELAWARE RIVER SWEDESBOFO, NJ	SPILL	UNKNOWN	CLS
1999	4764	10/03/1999	709	MILE MARKER 81	SPILL	UNKNOWN	CLS
1999	4963	10/16/1999	711	DELAWARE RIVER DEPTFORD NJ	SPILL	UNKNOWN	CLOSED
1999	5207	11/01/1999	709	DELAWARE RIVER OFF MARCUS HOOK	SPILL	UNKNOWN	CLOSED
1999	5243	11/02/1999	705	DELAWARE RIVER DEPTFORD NJ	EXCEEDANCE	MARTRANS	CLOSED
1999	5942	12/10/1999	711	DELAWARE RIVER	SPILL	UNKNOWN	CLOSED
1999	6043	12/10/1999	711	DELAWARE RIVER MARCUS HOOK	SPILL	UNKNOWN	CLOSED
1999	6097	12/15/1999	710	DELAWARE RIVER	RELEASE	UNKNOWN	CLOSED
2000	486	01/18/2000	703	DELAWARE RIVER	EXCEEDANCE	UNKNOWN	CLOSED
2000	515	02/04/2000	704	DELAWARE RIVER	SPILL	UNKNOWN	CLOSED
2000	1519	03/30/2000	711	DELAWARE RIVER N/O DELAWARE	ASSIST	UNKNOWN	CLOSED
2000	1602	04/04/2000	705	MEMORIAL BRIDGE	ASSIST	DECONSKY, GREG	CLOSED
2000	2342	05/16/2000	705	DELAWARE RIVER ROCK JETTY	DUMPING	WILMINGTON WASTEWATER T	CLOSED
2000	2441	05/22/2000	705	DELAWARE RIVER	EXCEEDANCE	UNKNOWN	CLOSED
2000	2471	05/23/2000	704	DELAWARE RIVER AT 485 CALL BOX 4069 CLAYMONT	SPILL	MOTIVA ENTERPRISE	CLOSED
2000	2471	05/23/2000	704	DELAWARE RIVER AT 485 CALL BOX 4069 CLAYMONT	SPILL	UNKNOWN	CLOSED

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Year	Complaint #	Date	Division:	EPO	Location	Nature	Object of Complaint Name	Action Comment
2000	2625	08/01/2000	702		DELAWARE RIVER AND CHRISTINA RIVER	FISH KILL	UNKNOWN	CLOSED
2000	3122	06/29/2000	707		DELAWARE RIVER	SPILL	UNKNOWN	CLOSED
2000	4086	08/22/2000	705		DELAWARE RIVER NEW CASTLE CITY	SPILL	UNKNOWN	CLOSED
2000	4084	08/22/2000	700		DELAWARE RIVER NEW CASTLE	EXCEEDANCE	UNK	CLOSED
2000	4260	08/01/2000	700		DELAWARE RIVER	EXCEEDANCE	UNK	CLOSED
2000	4293	08/04/2000	711		DELAWARE RIVER MOTIVA	DUMPING	UNKNOWN	CLOSED
2000	5027	10/12/2000	700		DELAWARE RIVER NC	EXCEEDANCE	UNKNOWN	CLOSED
2000	5669	12/08/2000	700		DELAWARE RIVER	EXCEEDANCE	UNKNOWN	CLOSED
2001	204	01/14/2001	702		DELAWARE RIVER AT PA LINE	SPILL	PHILADELPHIA NAVAL SHIP Yf	CLOSED
2001	2646	06/16/2001	712		DELAWARE RIVER AT PA	SPILL	UNKNOWN (NO INFO)	CLOSED
2001	2830	06/20/2001	703		DELAWARE RIVER/NEW CASTLE	SPILL	UNKNOWN (NO INFO)	CLOSED
2001	5044	10/24/2001	707		DELAWARE RIVER & BAY AUTHORITY NEW CASTLE	BIOA	N/A	CLOSED
2002	1290	03/22/2002	711		DELAWARE RIVER AT SUN OIL MARCUS HOOK PA	SPILL	SUN OIL CO	CLOSED
2002	1353	03/28/2002	712		DELAWARE RIVER NEAR MARCUS HOOK PA	SPILL	SUN OIL CO	CLOSED
2002	1433	04/02/2002	705		HOOK PA	SPILL	ICI AMERICAS	CLOSED
2002	3554	07/30/2002	705		DELAWARE RIVER INDUSTRIAL PARK	SPILL	TRANSTRITE GLOBAL LOGISTIC	CLOSED
2002	4512	08/25/2002	705		DELAWARE RIVER CLAYMONT	ODOR	UNKNOWN (NO INFO)	CLOSED
2002	4547	08/27/2002	711		DELAWARE RIVER CLAYMONT	SPILL	UNKNOWN (NO INFO)	CLOSED
2002	5663	10/25/2002	711		DELAWARE RIVER AT WILMINGTON WWTP	ASSIST	US FILTERS	CLOSED
2002	5740	11/01/2002	707		DELAWARE RIVER CLAYMONT	NOTIFICATION	SUN OIL CO	CLOSED
2002	6181	12/09/2002	711		DELAWARE RIVER AT MARCUS HOOK PA	DUMPING	NORFOLK DREDGING	CLOSED
2003	1434	04/16/2003	711		DELAWARE RIVER @ MOTIVA	SPILL	TUG BOAT DAUPHIN	CLOSED
2003	1790	05/07/2003	711		DELAWARE CITY	BIOA	DELAWARE RIVER AND BAY A	CLOSED
2003	2650	06/25/2003	712		DELAWARE RIVER AND BAY AUTHORITY NEW CASTLE	SPILL	VANE LINE BUNKERING	CLOSED
2003	2712	06/28/2003	711		DELAWARE RIVER PENNSYLVANIA	SPILL	SUN OIL CO	CLOSED
2003	3507	08/16/2003	711		DELAWARE RIVER MARCUS HOOK PA	SPILL	MOTIVA	NRT2987 & NRT29
2003	3875	09/16/2003	707		DELAWARE RIVER AT MOTIVA	ASSIST	UNKNOWN (NO INFO)	CLOSED
2003	4328	10/08/2003	711		DELAWARE RIVER/DEEMERS BEACH NEW CASTLE	SPILL	UNKNOWN (NO INFO)	CLOSED
2003					DELAWARE RIVER AT PA STATE LINE			

**DNREC Air and Waste Management Complaint Files**

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2004	2415	06/28/2004	704	DELAWARE RIVER	SPILL	Sunoco 0004 8561 Claymont	CLOSED
2004	2595	07/07/2004	708	DELAWARE RIVER @ DUPONT EDGEMORE	Spill	DuPont Edgemoor Plant	PENDING
2004	2673	07/12/2004	711	DELAWARE RIVER CLAYMONT	Spill	UNKNOWN	CLOSED
2004	3142	08/12/2004	711	DELAWARE RIVER CLAYMONT	Spill	SUN OIL	CLOSED
2004	3464	08/06/2004	712	DELAWARE RIVER @30 MILES NORTH OF DELAWARE	Spill	PENCO	CLOSED
2004	3634	09/29/2004	704	DELAWARE RIVER	Discharge	UniQema New Castle Plant	CLOSED
2004	4741	11/27/2004	711	DELAWARE RIVER	Spill	MV ATHOS 1	CLOSED
2004	4889	12/09/2004	711	DELAWARE RIVER	Spill	ATHOS 1	CLOSED
2005	483	02/20/2005	709	DELAWARE RIVER AT PREMCO'S PIER 3	Spill	ATHOS 1	CLOSED
2005	580	03/08/2005	711	DELAWARE RIVER AT CHAMBERS WORKS	Discharge	AFODIA PHARM SOLUTIONS	
2005	607	03/08/2005	711	DELAWARE RIVER AT THE PREMCO INTAKES DELAWARE	Spill	UNKNOWN	
2005	610	03/28/2005	711	DELAWARE RIVER DELAWARE COUNTY PA	Spill	UNKNOWN	
2005	811	03/28/2005	711	DELAWARE RIVER MARCUS HOOK PA	Spill	UNKNOWN	CLOSED
2005	909	04/05/2005	705	DELAWARE RIVER IN CHESTER	Abandoned Container	UNKNOWN	
2005	1093	04/15/2005	707	DELAWARE RIVER, WILMINGTON	OUTREACH	NONE	
2005	1215	05/01/2005	711	DELAWARE RIVER IN THE AREA OF CITY STEEL CLAY	Spill	UNKNOWN	
2005	1230	05/02/2005	704	DELAWARE RIVER	Spill	N/A	CLOSED
2005	1284	05/06/2005	711	DELAWARE RIVER PAULSBORO NEW JERSEY	Spill	K'S-HEA	CLOSED
2005	1454	05/20/2005	704	DELAWARE RIVER NEAR WILMINGTON AIRPORT	Drift	N/A	CLOSED
2005	1554	05/27/2005	707	DELAWARE RIVER, CLAYMONT	Spill	UNKNOWN	CLOSED
2005	1601	06/01/2005	704	DELAWARE RIVER, CLAYMONT, DE 16703	SPILL	UNKNOWN, POSSIBLY RELATE	CLOSED
2005	1643	06/04/2005	705	DELAWARE RIVER	NOTIFICATION	NONE	
2005	1734	06/09/2005	707	DELAWARE RIVER	Property Check	SUSPECTED TO BE MW ANTHC	
2005	1888	06/21/2005	711	DELAWARE RIVER AT PAULSBORO NJ	Spill	USCG NATIONAL RESPONSE C	
2005	1927	06/23/2005	711	DELAWARE RIVER	Assist	UNKNOWN	
2005	1957	06/28/2005	711	DELAWARE RIVER GLOUSTER COUNTY NEW JERSEY	Spill	UNKNOWN	

DE21806

DE21806

DNREC Air and Waste Management Complaint Files

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Year	Complaint #	Date	EPO	Location	Nature	Object of Complaint Name	Action Comment
2005	2123	07/11/2005	711	DELAWARE RIVER SALEM NEW JERSEY	Spill	ANTHOIS I	UNKNOWN
2005	2160	07/13/2005	707	DELAWARE RIVER, CLAYMONT, DE	Spill	MORAN TOWING	UNKNOWN
2005	2778	09/09/2005	707	DELAWARE RIVER, DELAWARE CITY, DE	Spill	UNKNOWN	UNKNOWN
2005	3053	10/03/2005	711	DELAWARE RIVER NORTH OF WILMINGTON WASTE WASTE	Abandoned Container	UNKNOWN	UNKNOWN
2005	3231	10/24/2005	711	DELAWARE RT 1 AT DELAWARE RT 72	Odor	VALERO REFINERY	UNKNOWN
2005	3576	11/21/2005	704	DELAWARE CITY	Spill	UNKNOWN	CLOSED
2005	3793	12/07/2005	711	DELAWARE RIVER SALEM NEW JERSEY	Spill	DAN MARINE TOWING COMPA	CLOSED
2005	3892	12/16/2005	704	DELAWARE RIVER, EDGEWOOD DU PONT, HAY ROAD, W	Discharge	DuPont Edgemoor Titanium Oxide	CLOSED
2005	3928	12/20/2005	711	DELAWARE RIVER PAULSBORO BEACH PAULSBORO NJ	Spill	UNKNOWN	CLOSED
2006	5	01/02/2006	708	DELAWARE RIVER AT THE CITY DOCKS	Spill	UNKNOWN	CLOSED
2006	101	01/11/2006	711	DELAWARE RIVER AT WEST DEPTFORD NJ	Spill	UNKNOWN	CLOSED
2006	112	01/11/2006	711	DELAWARE RIVER AT MARCUS HOOK PA	Spill	UNKNOWN	CLOSED
2006	590	02/23/2006	704	DELAWARE RIVER NEAR VALERO DOCK #1	Spill	UNKNOWN	CLOSED
2006	755	09/09/2006	707	DELAWARE RIVER	Notification	UNKNOWN	CLOSED
2006	1385	05/04/2006	711	DELAWARE RIVER AT LOGAN TOWNSHIP NJ	Spill	UNKNOWN	CLOSED
2006	1439	05/10/2006	711	DELAWARE RIVER AT ARTIFICIAL ISLAND NJ	Discharge	SALEM NUCLEAR GENERATING	CLOSED
2006	1480	05/15/2006	711	DELAWARE RIVER LOWER ALLOWAYS TOWNSHIP NJ	Discharge	SALEM NUCLEAR GENERATING	CLOSED
2006	1727	06/06/2006	704	DELAWARE RIVER AT EDGEWOOD	Abandoned Drum	JOHN R. YOUNG & CO.	CLOSED
2006	1797	06/11/2006	709	DELAWARE RIVER NORTH OF THE BRANCH CANAL	Spill	UNKNOWN	CLOSED
2006	2063	07/02/2006	705	DELAWARE RIVER	Spill	UNKNOWN	CLOSED
2006	2065	07/03/2006	709	DELAWARE RIVER AT THE MEMORIAL BRIDGE	Spill	NONE	CLOSED
2006	2069	07/03/2006	705	DELAWARE RIVER	Spill	UNKNOWN	CLOSED
2006	2070	07/03/2006	705	DELAWARE RIVER	Spill	UNKNOWN	CLOSED
2006	2122	07/07/2006	711	DELAWARE RIVER AT MARCUS HOOK PA	Miscellaneous	D'AMICO TANKERS	CLOSED
2006	2152	07/11/2006	711	DELAWARE RIVER PAULSBORO NJ	Spill	PENN MARITIME	CLOSED
2006	2153	07/11/2006	704	DELAWARE RIVER	Spill	UNKNOWN	CLOSED



DNREC Air and Waste Management Complaint Files

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Object Of Complaints

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Year	Complaint #	Date	EPO	Location	Nature	Object of Complaint Name	Action Comment
2006	2169	07/12/2006	711	DELAWARE RIVER WEST DEFTFORD NJ	Miscellaneous	UNKNOWN MALE IN A KAYAK	CLOSED
2006	2215	07/18/2006	704	DELAWARE RIVER NEAR CHERRY ISLAND	Spill	International Petroleum Corporat	CLOSED
2006	2364	07/31/2006	711	DELAWARE RIVER MARCUS HOOK PA	Materials Handling	UNKNOWN	CLOSED
2006	2400	08/03/2006	711	DELAWARE RIVER ACROSS FROM PHILA NAVAL YARD G	Spill	UNKNOWN	CLOSED
2006	2457	08/08/2006	711	DELAWARE RIVER NEW CASTLE	DRILL	PARKS RICHARD T/A PENN MA	CLOSED

Total number of complaints is 197

DE21210

**WATER AND AIR  
RESOURCES COMMISSION**

**REGULATIONS  
GOVERNING THE USE OF WATER RESOURCES  
AND PUBLIC SUBAQUEOUS LANDS**



**STATE OF DELAWARE**

**ADOPTED JULY 14, 1969-**

DE21210

## REGULATION NO. IV

REQUIREMENTS FOR THE USE OF PUBLIC SUBAQUEOUS LANDSSection 1. Scope and Applicability

- 1.01 The Commission and the Governor have exclusive jurisdiction, pursuant to the provisions of Chapter 64, Subchapter II, Title 7, Delaware Code as amended, to convey a fee simple or lesser interest and to lease or grant permits or easements over all public subaqueous lands of the State.
- 1.02 This jurisdiction includes all ungranted subaqueous lands in non-navigable waters, and all ungranted tide and submerged lands in navigable and non-navigable waters; whether within or beyond the boundaries of the State, heretofore and hereafter acquired by the State by any legal means.
- 1.03 All jurisdiction and authority to convey a fee simple or lesser interest, to lease or to grant permits, concessions, alterations or requests of any nature to dredge, fill, occupy, lease, purchase or otherwise alter or use public subaqueous lands, to erect any structure as defined herein on land abutting, in, on, under, or over public subaqueous lands, or otherwise alter shore lines in any way, is vested in the Commission and the Governor.
- 1.04 No use of public subaqueous lands or beach or shore to the mean high water level shall be undertaken except pursuant to a recommendation for approval by the Commission and subsequent approval by the Governor.
- 1.05 Those activities involving the use of private subaqueous lands may be subject to formal Commission review and consideration insofar as such activities may contribute to the pollution of public waters, infringe upon the water rights of other private owners, or make connection with public subaqueous lands.
- 1.06 Those private lands lost by the processes of Nature and acts of God, being covered by water, become the lands of the State and permission to recover such lands rests entirely at the discretion of the State.
- 1.07 The Commission, in evaluating all applications for the use and/or recovery of subaqueous lands, shall do so in light of its overall policy and its recognition of sound estuarine conservation practices, as well as a due regard for the general interest and welfare of the people of the State.
- 1.08 All projects requiring approval pursuant to the provisions of Section 2 of this Regulation shall be subject to review by the appropriate State and Federal agencies having jurisdiction or interest in matters pertaining to water pollution, public health, fish and wildlife, planning, geology, or navigation. Conditions imposed upon the applicant in the approval certificate shall reflect the comments of such agencies, provided that such comments do not constitute reason for public hearing and subsequent denial of approval.

DE06713



## *The Regulations Governing The Use of Subaqueous Lands*

Adopted: May 8, 1991  
Amended: September 2, 1992



State of Delaware  
Department of Natural Resources and  
Environmental Control  
Division of Water Resources



DE06713

DE06714

STATE OF DELAWARE

DEPARTMENT OF NATURAL RESOURCES  
AND  
ENVIRONMENTAL CONTROL

REGULATIONS  
GOVERNING THE USE OF SUBAQUEOUS LANDS  
MAY 8, 1991

AMENDED SEPTEMBER 2, 1992

DE06714

STATE OF DELAWARE  
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL  
REGULATIONS GOVERNING THE USE OF SUBAQUEOUS LANDS

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STATE OF DELAWARE  
DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL  
REGULATIONS GOVERNING THE USE OF SUBAQUEOUS LANDS

## FOREWORD

AUTHORITY

These regulations governing the use of subaqueous lands are promulgated in accordance with the provisions of 7 Del. C. §7212.

PURPOSES

Subaqueous lands within the boundaries of Delaware constitute an important resource of the State and require protection against uses or changes which may impair the public interest in the use of tidal or navigable waters. The purposes of this chapter are to empower the Secretary to deal with or to dispose of interest in public subaqueous lands, and to place reasonable limits on the use and development of private subaqueous lands, in order to protect the public interest by employing orderly procedures for granting interests in public subaqueous land, and for issuing permits for uses of or changes in private subaqueous lands. To this end, 7 Del. C. §7212 empowers the Secretary to adopt rules and regulations to effectuate the purposes of the chapter, to apply to the courts for aid in enforcing this statute and the rules and regulations adopted pursuant thereto, and to convey interests in subaqueous lands belonging to the State.

DEFINITIONS

The following words or phrase shall have the following definitions unless the context clearly indicates otherwise.

- (1) "Activity" includes, but is not limited to, any human induced action, such as dredging, draining, filling, grading, bulkheading, mining, drilling, extraction of materials or excavation or construction of any kind, including, but not limited to, construction of a boat ramp or slip, breakwater, residences, bridge, bulkhead, culvert, dam, derrick, dock, groin, jetty, lagoon, gabion, rip-rap, launching facility, marina, mooring facility, pier, seawall, walkway or wharf.
- (2) "Anchoring" means the holding of a vessel solely by means of an anchor which is dropped to underwater lands and which is carried aboard the vessel.
- (3) "Anchorage/Moorage" means a designated and permitted area reserved for the anchoring or mooring of vessels.
- (4) "Approved upland residential unit(s)" means the residential units given final approval by a local government zoning agency for one parcel of land riparian to the adjacent or affected waterbody.
- (5) "Boat docking facility" means a place where a vessel or vessels may be secured to a fixed or floating structure, or moorage or mooring onto the shoreline or shoreline structure (including marginal docks), either temporarily or indefinitely.
- (6) "Commercial" means any activity undertaken for profit, for which a fee will be charged, directly or indirectly, or which results in the generation of revenue.



(7) "Commercial Project" means any boat docking facility or anchorage, other than a single-boat pier, dock or anchorage intended to serve a single family dwelling.

(8) "Convenience Structure" means any structure which provides access to a watercourse, including but not limited to, a boat ramp or slip, derrick, dock, dolphin, piling, launching facility, marina, mooring facility, pier, walkway or wharf; whether permanent or temporary, floating or fixed.

(9) "Critical Habitat" includes areas classified by the Department and serving an essential role in the maintenance of sensitive species. Areas may include unique aquatic or terrestrial ecosystems that support rare endangered or threatened plants and animals. Rare, endangered or threatened species are defined by both state and/or federal listings.

(10) "Cumulative Impacts" means the changes in an aquatic ecosystem that are attributable to the collective effect of a number of individual discharges or activities. Although the impact of a particular discharge or activity may be a minor change in itself, the cumulative effect may impair the water resources and interfere with the productivity, water quality, or public use of existing aquatic ecosystems.

(11) "Department" means the Department of Natural Resources and Environmental Control.

(12) "Dredging" means the removal or displacement, by artificial activities, of mud, soil, sand, gravel, shells or other material from subaqueous lands.

(13) "Facility" means all related land, structures, services, appurtenances and improvements associated with an activity regulated under 7 Del. C. Chapter 72.

(14) "Filled Lands" includes tidelands and submerged lands reclaimed artificially through raising such lands above the highest probable elevation of the tides to form dry land by placement of a fill or deposit of earth, rock, sand or other solid materials.

(15) "Filling" means depositing materials from any source onto tidelands, submerged lands, wetlands or upland, whether for the purpose of creating new uplands or for any other purpose, including the disposal of dredged materials.

(16) "Floating Platform" means any floating structure which has no means of propulsion or is not designed as a boating vessel.

(17) "Governor" means the Governor of the State of Delaware.

(18) "Lease" means an agreement for exclusive possession of lands for a determinate period.

(19) "Marginal dock" means a fixed or floating structure placed immediately contiguous and parallel to or including an established seawall, bulkhead, or revetment, used for the purpose of berthing vessels either temporarily or indefinitely.

(20) "Marina" means a boat docking facility, as defined in the Department's Marina Regulations.

(21) "Mean high water" or "mean high tide" (a tidal datum) means the point on a bank, tide flat, beach or shore, up to which the presence and action of the water is so continuous as to leave a distinct mark either by erosion, destruction of terrestrial vegetation (non-aquatic), physical markings or characteristics, known vegetation lines, and

maybe further identified by tidal gauge data, or any other suitable means delineating the mean height reached by a rising tide.

(22) "Mean low water" or "mean low tide" (a tidal datum) means the average lowest point on a bank, tide flat, beach or shore, found during normal tide conditions. This may be determined by physical or biological characteristics, interpolation from mean high water based on knowledge of tidal range for an area or tide gauge information, if corrected to account for local conditions.

(23) "Mooring" means the holding of a vessel by means of a mooring buoy or similar device which is fastened to a stationary underwater device that is not carried aboard the vessel as regular equipment.

(24) "Navigable water" means a river, stream, lake, bay, inlet, or other waterway capable of having been or being used for transport of useful commerce, including waterways which become navigable as the result of alteration such as dredging. "Transport of useful commerce" shall include the transportation of goods or persons by water including, but not limited to, recreational transport, such as canoeing, rafting, sailing, tubing, water-skiing, motor boating or windsurfing.

(25) "Ordinary high water line" means for nontidal waters, the line where the presence and action of the water are so continuous in all ordinary years so as to mark upon the soil of the bed, or character distinct from that of the banks, with respect to vegetation, as well as with respect to the nature of the soil itself.

(26) "Person" means any individual, minor, partnership, corporation, joint venture, estate, trust, syndicate, fiduciary, firm and other association and combination whether public or private, including quasi-public corporations, political subdivisions, and governmental agencies, instrumentalities, and other entities.

(27) "Pier" means a structure in, on, or over subaqueous lands which is used by the public primarily for fishing, crabbing, swimming, or viewing. A pier shall not include vessel berthing use unless specifically designated as such.

(28) "Preemptive area" means the area of public subaqueous lands from which the traditional public uses have been, or would be, excluded to any extent by an activity, structure, or vessel.

(29) "Private subaqueous lands" means any subaqueous lands which are not public subaqueous lands.

(30) "Public interest" means demonstrable environmental, social, and economic benefits which would accrue to the public at large as a result of a proposed action, and which would exceed all demonstrable environmental, social, and economic costs of the proposed action. In determining the public interest in a request for use, sale, lease, or transfer of interest in subaqueous lands, the Department shall consider the ultimate project and purpose to be served by said use, sale, permit, lease, or transfer of lands or materials.

(31) "Public subaqueous lands" means those subaqueous lands owned by the State of Delaware, including subaqueous lands which were altered or created from non-subaqueous lands by excavation or other means or through loss by natural processes or acts of God.

(32) "Resident vessel" means a live-aboard vessel docked or moored at an anchorage, marina, or other boat docking facility for a period exceeding a total of two consecutive weeks in a single year.

(33) "Riparian habitat" means a habitat that is strongly influenced by water and which occurs in, or adjacent to, a waterbody (i.e. rivers, streams, ponds, lakes, bays, ocean, wetlands, etc.).

(34) "Secondary Effects" are effects on an aquatic ecosystem that are associated with a discharge or activity, but do not directly result from the discharge or activity.

(35) "Secretary" means the Secretary of the Department of Natural Resources and Environmental Control.

(36) "Shoreline Erosion Control Structure or Measure" means any activity or structure which provides for stabilization of the shore or bank of a watercourse including, but not limited to, a bulkhead, breakwater, gabion, groin, jetty, rip-rap revetments, seawall, vegetation, and/or grading of banks.

(37) "State" means the State of Delaware.

(38) "Structure" includes, but is not limited to, any boat ramp, slip, building, breakwater, bridge, bulkhead, culvert, dam, derrick, dock, gabion, groin, jetty, residence, launching facility, marina, mooring facility, pier, seawall, walkway, or wharf.

(39) "Subaqueous lands" means submerged lands and tidelands.

(40) "Submerged lands" means land lying below the line of mean low tide in the beds of all tidal waters within the boundaries of the State, together with the beds (channelward of ordinary high water in non-tidal waters) of navigable rivers, streams, lakes, bays, inlets, ponds, or other waterways within the boundaries of the State.

(41) "Tidal waters" means any waters affected by tide.

(42) "Tidelands" means lands lying between the line of mean high water and the line of mean low water.

(43) "Vessel" means and includes every description of watercraft, boat, houseboat, or other contrivance capable of navigating the waters of the State.

(44) "Water-dependent activity" means an activity which can only be conducted on, in, over, or adjacent to water, and where the use of the water or subaqueous lands is a primary and integral part of the activity or use.

(45) "Wetlands" means those lands defined as "Wetlands" in 7 Del. C. Chapter 66.

## SECTION 1. ADMINISTRATIVE PRINCIPLES

### 1.01 Jurisdiction

These Regulations are adopted pursuant to 7 Del. C. §7212.

### 1.02 Scope of Regulations

#### A. Applicability

1. The extent of jurisdictional authority over public or private subaqueous lands includes any activity in a navigable stream or waterbody, which have a hydrologic connection to natural waterbodies.

2. These Regulations shall apply to all activities upon or affecting public and private subaqueous lands within the State of Delaware.

3. These Regulations shall apply to all applications received on or after the effective date of these Regulations. Applications submitted before the effective date of these Regulations shall be governed by the regulations titled "Regulations Governing the Use of Public Subaqueous Lands," adopted July 14, 1969 and revised July 30, 1985.

4. These Regulations shall not alter any right or obligation arising from any lease, easement, license, grant or other legally binding agreement from or between the State of Delaware and any person which is in effect prior to the effective date of these Regulations.

5. To the extent that any activity is commenced prior to the effective date of these Regulations, any previous regulation or law which applied to such activity prior to the effective date of these Regulations shall remain in force.

6. Any expansion, modification, renewal, repair, or rebuilding of any structure affecting subaqueous lands, which occurs after the effective date of these Regulations, shall be subject to these Regulations.

7. Any change or modification of a permitted or grandfathered activity affecting subaqueous lands, which occurs after the effective date of these Regulations, shall be subject to these Regulations.

B. Subaqueous Lands

1. The areas where these Regulations apply are shown on the U.S. Geological Survey 7.5 Minutes Series (Topographic) Quadrangle Charts for the various quadrangles making up the State of Delaware. Such jurisdiction shall be presumed correct subject to written rebuttal by the public or the Department based on a determination made in the field, using established criteria and procedures adopted by the Department in accordance with the Regulations. These criteria shall be developed using biological and physical indicators which include, but are not limited to, the presence of a defined channel, banks, aquatic fauna and flora, and other field indicators of instream habitat.

2. Final determination of the location of mean high water shall be determined in the field by the Department, using biological and physical indicators. Where the bank or shore at any particular site is of such character that it is impossible or difficult to ascertain where the point of mean high water is, recourse may be had to other places on the bank or shore of the same stream, lake, etc. to determine whether a given stage of water is above or below the mean high water mark. Similarly, the ordinary high water mark along the banks of a navigable bay, lake, pond, river, stream, or other waterway shall be taken as the boundary between the subaqueous lands and the non-subaqueous lands.

3. These Regulations acknowledge the applicability of the Public Trust Doctrine to all navigable waters. Any applicant asserting private ownership of subaqueous lands must demonstrate said ownership.

1.03 Activities on Private Subaqueous Lands: Types of Projects Requiring a Permit

A. Owners of private subaqueous lands shall obtain a permit from the Department, pursuant to this regulation, before undertaking any activity on such lands which, as determined by the Department, may contribute to the pollution of public waters, have an adverse impact or destroy aquatic habitats, infringe upon the rights of the public use of the waterway or the public, infringe upon the rights of other private owners, or make connection with public subaqueous lands, including but not limited to, the activities specified in subsection C of this section.

B. No person shall deposit material upon, remove, or extract materials from, or construct, modify, repair, reconstruct, except as specified in subsection 1.08(B) any structure or facility upon or over private subaqueous lands

without first having obtained a permit or letter of authorization from the Department.

C. Permits or Letters of Authorization

The following types of activities in, on, over, or under private subaqueous lands require a permit or letter of authorization from the Department:

1. Construction of a convenience structure or boat docking facility.
2. Construction of a shoreline erosion control structure or measure.
3. Dredging, filling, excavating, or extracting of materials.
4. Excavation, creation, or alteration of any channel, lagoon, turning basin, pond, embayment, or other navigable waterway on private subaqueous lands which will make connection with public subaqueous lands.
5. Dredging of existing channels, ditches, dockages, lagoons, and other navigable waterways to maintain or restore the approved depth and width (letter of authorization).
6. Excavation of land which makes connection to subaqueous lands.
7. The laying of any pipeline, electric transmission line, telephone line, or any other utility structure in, on, over, or under the beds of private subaqueous lands.
8. Installation of temporary or permanent mooring buoys or private marker buoys.
9. Establishment of an anchorage for the use of a mooring for more than two (2) boats or for appurtenant onshore services.
10. Anchoring or mooring a floating platform over private subaqueous lands for a period of twenty-four (24) consecutive hours or more.
11. Anchoring or mooring any vessel or platform over private subaqueous lands for a revenue generating purpose.
12. Repair and replacement of existing serviceable structures over private subaqueous lands (letter of authorization), except no permit or letter is required for repairs or structural replacements which are above the mean low tide and which do not increase any dimensions or change the use of the structure.

1.04 Use of Public Subaqueous Lands: Types of Projects Requiring Approval

A. The Secretary may convey a fee simple title or any lesser interest for a commercial or noncommercial project. Once public subaqueous lands become private subaqueous lands, they are subject to regulation as private subaqueous lands pursuant to these Regulations.

B. The following types of activities on public subaqueous lands require a lease, permit, or letter of authorization from the Department:

1. Construction or use of any structure on, in, under, or over public subaqueous lands, including but not limited to, any convenience structures, shoreline erosion control structure or measure, or boat docking facility.

2. Dredging, filling, excavating, or extracting of materials.
3. Continuous anchoring or mooring of a commercial vessel used in a commercial activity on or over public subaqueous lands for thirty (30) or more consecutive calendar days or for thirty (30) or more calendar days during any consecutive three (3) months.
4. The laying of any pipeline, electric transmission line, or telephone line in, on, over, or under the beds of public subaqueous lands.
5. Installation of temporary or permanent mooring buoys or private marker buoys.
6. Establishment of an anchorage for mooring more than two (2) boats or which serves as a permanent place for resident vessels.
7. Anchoring or mooring a floating platform over public subaqueous lands and for a period of twenty-four (24) consecutive hours or more.
8. Maintenance dredging of existing or new channels, ditches, dockages, lagoon and other waterways to maintain or restore the approach depth and width (letter of authorization).
9. Anchoring or mooring any vessel or platform over public subaqueous lands for revenue generating purposes.
10. Repair and replacement of existing serviceable structures over private subaqueous lands (letter of authorization), except no permit or letter is required for repairs or structural replacements which are above the mean low tide and which do not increase any dimensions or change the use of the structure.
11. New dredging activities of channels, ditches, dockages or other waterways.

1.05 Statewide Activity Approvals

The Department may adopt statewide activity approvals for certain specified activities with limiting dimensions and criteria which are considered to have minimal impacts on subaqueous lands, water quality, habitats, etc. The qualification of a project for a statewide activity approval may require no review or will invoke an abbreviated review process for a decision by the Department.

1.06 Prohibitions

Certain types of projects are deemed inappropriate for consideration and shall not be considered or approved for private or public subaqueous lands under these Regulations:

A. Houseboats

No non-motorized vessel or floating platform whose function or use is primarily that of a residence shall be authorized under these Regulations to moor, anchor, dock over or otherwise occupy subaqueous lands.

1.07 Other Projects

No other project which may potentially impact the public interest in the use of tidal or navigable waters, contribute to water pollution, infringe upon the rights of the public, infringe on the rights of private owners, or make connection with public subaqueous lands, shall be undertaken on public or private subaqueous lands unless approval has been obtained from the Department.

1.08 Exemptions

A. Anchoring

A waterfront property owner, other than one within a development which provides a marina or anchorage for residents' use, may anchor or moor, not more than two (2) personally owned vessels in the waters adjacent to and within the perpendicular seaward extension of the property boundaries of the waterfront property, provided that the preemptive mooring area does not extend more than ten percent of the width of the waterbody at high tide, is not in a navigational channel, and does not pose a navigational hazard.

B. Written Notification of Exempted Repairs and Replacements

Repairs or structural replacements which are above the mean low tide and which do not increase any dimensions or change the use of the structure are exempt from the permit or letter of authorization requirements contained herein. The user shall notify the Department in writing in advance of utilization of the exemption. For purposes of this subsection, the notice shall include the location of the structure, a description of the use of the structure, and provide its dimensions.

C. Shellfishing

The use of shellfish grounds for shellfishing and the authorized use, deployment, and marking of fishing equipment and gear, is regulated under the authority of 7 Del. C. Chapters 9, 11, 18, 19, 21, 23, 24, 25 and 27.

D. Drainage Ditches

Artificially created channels excavated from non-subaqueous lands and designed according to reasonable drainage standards do not require approval under these Regulations.

1.09 Waivers

A. The Department may waive any provision of these regulations when warranted under the following circumstances:

1. Life-threatening emergencies.
2. Actions are required for public safety for which sufficient time is not available to follow the Regulations.

3. Where the authority of the Department under 7 Del. C. Chapter 72 overlaps with another statute, including but not limited to Shellfish Grounds, 7 Del. C. Chapter 19; Beach Preservation, 7 Del. C. Chapter 68; or Wetlands, 7 Del. C. Chapter 66, provided that the following criteria are met:

- a. If, in the opinion of the Secretary, equal environmental impact review and regulation of

the activity would be provided by either statute; and

b. Waiver of these regulations would not be contrary to the purposes of 7 Del. C. Chapter 72.

B. For facilities or activities which require a permit pursuant to the Department Marina Regulations, the Department will waive the provisions of Sections 3.01.B and 3.01.C of these Regulations.

C. The failure of the Department to enforce any of the provisions of these Regulations, however, shall not constitute a waiver by the Department of any such provisions.

1.10 Revocation

The Secretary may revoke any lease or permit for failure to comply with these Regulations or the terms and conditions of the lease or permit. The Secretary may, upon expiration or cancellation of a lease, direct the lessee to remove all structures and equipment from the leased area within 180 days. If the lessee fails to remove the structures and equipment thereon within the 180 day period, the Department shall, at its option and after 10 days from receipt of written notice by certified mail to the lessee, have the structures and equipment removed at the expense of the lessee.

1.11 Penalties

Violations of these regulations shall be punishable in accordance with 7 Del. C. §7214.

1.12 Other Regulatory Agencies

Compliance with these Regulations does not relieve any person from complying with the laws, rules, regulations, and requirements imposed on the same lands, uses, structures, facilities or other appurtenances by local, State and Federal government agencies or other divisions within the Department.

1.13 Public Information

All material submitted in connection with any application shall be deemed public records subject to disclosure subject to 29 Del. C. Chapter 100 unless designated by the applicant and accepted by the Department as covered by one or more of the exceptions enumerated in 29 Del. C. §10002(d).

1.14 Severability

If any part of these Regulations or the application of any part thereof are held invalid or unconstitutional, the application of such part to other persons or circumstances, and the remainder of these Regulations, shall not be affected thereby and shall be deemed valid and effective.

1.15 Appeals

Any person whose interest is substantially affected by any action of the Secretary taken pursuant to these Regulations may appeal to the Environmental Appeals Board as per 7 Del. C., §7210. There shall be no appeal of a decision by the Secretary to deny a permit on any matter involving State-owned subaqueous lands.

1.16 Effective Date of These Regulations

These Regulations shall take effect upon final adoption.



SECTION 2. PROCEDURES FOR APPLICATION2.01 GeneralA. Requirements for Every Application

A person seeking a lease or permit shall submit to the Secretary a written request, using the appropriate forms available from the Department, stating in detail the type of grant, lease or permit desired, showing the location of the area and containing specifications for any proposed activity.

The application for every type of activity shall provide the information requested in the appropriate application form. No application shall be considered complete or acted upon until the application is deemed complete by the Department. Providing false or inaccurate information shall be grounds for denial or revocation of a permit or lease and shall be grounds for a civil or criminal penalty.

B. Required Attachments to the Application

The applicant shall attach the following to the application:

1. A map showing the location and boundaries of the proposed project in relation to the adjoining property and to the nearest existing street or road intersection, and the specific location of all proposed activities.

2. A neat, scaled drawing of the proposed activities on 8-1/2" x 11" paper which shows: i) that the design conforms to generally accepted engineering principles, ii) accurate dimensions of the proposed activity (e.g., cubic yards of dredging or fill, square feet of dock, pier, jetty, or preemptive area, linear feet of bulkheading, utilities, etc.), iii) all existing structures, iv) exact location of property corners and property lines, wetlands and aquatic habitats. If the design does not conform to generally accepted engineering principles, the Secretary may require that the design be prepared, signed, and sealed by a professional engineer registered in the State of Delaware.

3. A certified copy of the deed and survey plot plan (to indicate property lines and corners) to the land, and written permission from the owner if other than the applicant for the project. The Department may request such additional information as will enable it to determine ownership of or authority to use the property.

4. Evidence of zoning approval for the project. The Department may defer consideration of the application if it determines that substantive questions regarding the validity of the County's or municipality's actions are raised in an appeal of that action.

5. The application fee and any deposit required.

6. Performance bond as required.

7. Additional information as required by the Department.

C. Current Application

The applicant shall maintain the application in a current state and notify the Department immediately of any changes in the information provided.

2.02 Additional Information

The Department may request such additional information as will enable it to consider the application properly. The Department may require the applicant to provide an environmental assessment if it determines that the proposed activity may have a substantial adverse effect on the environment. Any requested additional information not provided to the Department within a reasonable time may be grounds to declare the permit incomplete or deny the permit.

The Department may request of any State agency a report or recommendation concerning any application before it which affects that agency or for which that agency has particular information or expertise. The Department may consider the report in ruling on the application.

2.03 Burden on Applicant

The burden shall be on the applicant to satisfy the Department that the requirements of these Regulations have been met; and if the granting of the permits, lease or approval will result in loss to the public of a substantial resource, that the loss has been offset or mitigated.

SECTION 3. CRITERIA OF PERMITS, LEASES, AND LETTERS OF AUTHORIZATION

3.01 Evaluation Considerations

Each application shall be reviewed based on the consideration of the performance specifications, standards and other criteria listed in this section for the type of activity proposed.

An application may be denied if the activity could cause harm to the environment, either singly or in combination with other activities or existing conditions, which cannot be mitigated sufficiently.

For shoreline erosion control structures or measures and for water-dependent activities, each activity shall be reviewed on basis of need for the type of structure proposed.

For repair and replacement projects of serviceable structures, serviceability must be proven to the satisfaction of the Department. A serviceable structure includes existing structures which are intact and functioning for the original intended design purpose. For structures which are no longer intact due to a specific and catastrophic water event or activity, camera-dated photographs or aerial photography must clearly indicate the serviceability of said structure (as defined by the criteria above) within six (6) months prior to the date of application.

With regard to an evaluation of the overall public benefits from the proposed activity or structure, the following criteria may be used to determine whether or not to issue a permit, easement, lease, fee simple interest, or other instrument, with or without mitigating measures and conditions.

A. Public Use Impact

The Department shall consider the public interest in any proposed activity which might affect the use of subaqueous lands. These considerations include, but are not limited to, the following:

1. The value to the State or the public in retaining any interest in subaqueous lands which the applicant seeks to acquire, including the potential economic value of the interest.
2. The value to the State or the public in conveying any interest in subaqueous lands which the applicant seeks to acquire.
3. The potential effect on the public with respect to commerce, navigation, recreation, aesthetic enjoyment, natural resources, and other uses of the subaqueous lands.
4. The extent to which any disruption of the public use of such lands is temporary or permanent.
5. The extent to which the applicant's primary objectives and purposes can be realized without the use of such lands (avoidance).
6. The extent to which the applicant's primary purpose and objectives can be realized by alternatives, i.e. minimize the scope or extent of an activity or project and its adverse impact.
7. Given the inability for avoidance or alternatives, the extent to which the applicant can employ mitigation measures to offset any losses incurred by the public.

8. The extent to which the public at large would benefit from the activity or project and the extent to which it would suffer detriment.

9. The extent to which the primary purpose of a project is water-dependent.

B. Environmental Considerations

1. The Department shall consider the impact on the environment, including but not limited to, the following:

a. Any impairment of water quality, either temporary or permanent, which may reasonably be expected to cause violation of the State Surface Water Quality Standards. This impairment may include violation of criteria or degradation of existing uses.

b. Any effect on shellfishing, finfishing, or other recreational activities, and existing or designated water uses.

c. Any harm to aquatic or tidal vegetation, benthic organisms or other flora and fauna and their habitats.

d. Any loss of natural aquatic habitat.

e. Any impairment of air quality, either temporarily or permanently, including noise, odors, and hazardous chemicals.

f. The extent to which the proposed project may adversely impact natural surface and groundwater hydrology and sediment transport functions.

2. For major commercial activities, or for other activities which may have a substantial environmental impact, the Department may require an environmental impact assessment. In all cases, a general assessment of potential impacts listed in Section 3.01.B(1) must be provided by the applicant.

3. The Department shall consider whether the activity under review could have the potential to cause any adverse environmental impacts, taken in conjunction with the existing situation and with other activities under construction or review. To assess the cumulative and secondary impacts, the Department may require the applicant to provide the following information:

a. Determination of cumulative effects on the aquatic ecosystem, natural surface and groundwater hydrology.

b. Determination of secondary effects on the aquatic ecosystem, natural surface and groundwater hydrology.

4. The Department shall consider whether any significant impacts or potential harm could be offset or mitigated by appropriate actions or changes to the proposed activity by the applicant. If so, the required mitigating measures may be included as conditions of the permit or lease.

C. Other Considerations

The Department shall also consider the following to determine whether to approve the application:

1. The degree to which the project represents an encroachment on or otherwise interferes with public lands, waterways or surrounding private interests.

2. The degree to which the project incorporates sound engineering principles and appropriate materials of construction.

3. The degree to which the proposed project fits in with the surrounding structures, facilities, and uses of the subaqueous lands and uplands.

4. Whether the proposed activity complies with the State of Delaware's Surface Water Quality Standards both during construction and during subsequent operation or maintenance.

5. The degree to which the proposed project may adversely affect shellfish beds or finfish activity in the area.

**3.02 Requirements for all Structures**

A. Structures shall be constructed in a manner that allows for continued growth and nourishment of aquatic and wetland vegetation under or near the structure wherever possible, and allows for adequate water circulation and water quality to support plants and animals.

B. Structures shall be constructed, installed, and used in a manner that minimizes pollution or the causing of harm to aquatic and tidal plants, fish and wildlife.

C. Structures shall utilize the best available materials and technologies and shall be constructed in a manner that will prevent or minimize leaching or runoff of harmful chemicals or other substances which may cause water pollution or harm to aquatic plants and wildlife.

D. Structures shall not interfere with navigation, public, or other rights.

**3.03 Boating Docking Facilities**

A. All new and existing marinas must comply with the requirements of the Department's Marina Regulations.

B. General Siting Considerations: Siting of boat docking facilities shall be evaluated on site-specific conditions including, but not limited to, location of navigational channel, proximity of existing structures, aquatic habitats, and width and orientation of waterbody. The following criteria will be weighed and balanced when evaluating the siting of boat docking facilities.

1. Structures should be sheltered or protected from storm-driven currents, waves, and ice in an area with low or moderate normal currents and littoral drift.

2. Structures should be constructed to avoid dredging or filling, with minimal impact on aquatic vegetation and wetlands, and without dead-end or poorly flushed lagoons.

3. Structures should be located away from critical habitats, historic, or archaeological areas.

4. Structures should be located away from hazardous facilities or designated recreational swimming areas.

5. Where adequate depths exist for water-dependent structures, no dock, mooring, piling, or other structure or mooring area shall extend channelward more than 10 percent of the width of the waterbody at that location (from mean low water). In no case shall a structure extend more than 20 percent of the width of the waterbody, nor shall it extend seaward more than 250 feet, except under exceptional circumstances necessary to provide access for needed commerce.

6. Docks, mooring, pilings, or other structures should be located a minimum of ten (10) feet from a navigation channel.

7. Docks and piers should extend out from the shoreline far enough so as to eliminate need for dredging and filling, and provide sufficient height to allow light to penetrate to vegetation underneath and alongside.

8. Slips, lagoons, basins, and access channels should be no deeper than the parent waterbody (i.e. no sill), and the depth should slope upward toward the landward extent from the parent waterbody. Exception may be allowed only by individual review of the potential environmental impacts and approval granted by the Secretary of the Department.

9. Berms and grasslands should be made a part of the boat docking facility design wherever feasible and possible, particularly for buffer zones between the facility and any wetlands. As much of the land surface as possible should be vegetated or covered with porous materials to decrease stormwater runoff.

10. All convenience structures shall be set back a minimum of ten (10) feet from adjacent property lines. Exceptions may be allowed only if a written letter of no objection is obtained from the adjacent property owner, and the Department is satisfied that no navigation hazard or other adverse environmental impact may result.

11. New docking facilities should not extend beyond existing structures in the immediate vicinity unless absolutely necessary to obtain navigable water depths for a water-dependent activity.

12. Docking facilities should extend out from the shoreline no further than to a depth necessary for docking a boat capable of navigating the waterway.

13. Dredging to obtain navigable water depths in conjunction with private residential boat docking facilities should be avoided.

C. Structures shall not be constructed using creosote treated lumber.

D. For subdivided, recorded parcels of real property, applications for construction of a boat docking and/or launching facility must satisfy the minimum area requirements of a lot for residential construction, to include applicable setback and utility construction requirements (based on county, state and municipal standards), prior to consideration for approval for a subaqueous lands lease/permit. Community or common area parcels within an approved subdivision must satisfy the requirements defined by the Marina Regulations for a marina, based on the maximum number of potential users within the subdivision.

E. Properties which were legally subdivided and recorded prior to the adoption of Subaqueous Lands law (July 14, 1969) are exempted from the minimum size requirements for a docking facility as specified by Subsection 3.03D of these Regulations. All structures exempted by this condition must satisfy all other siting, design, and review criteria of these Regulations.

F. Minimum frontage adjacent to subaqueous lands for a docking facility for any parcel will be forty (40) feet.

Any proposed structure must satisfy all setback requirements as defined by state, federal or county regulation or guidelines.

G. Applications for the construction of a boat docking/launching facility within a recorded easement/right-of-way, linking non-waterfront properties to the shoreline, must be submitted with a written letter of no objection by the owner of the property containing said conveyance. Location and siting of the structure must satisfy all setback and frontage requirements, as defined by the Department. Applications will not be accepted for private/community structures within approved public easements or right-of-ways.

### 3.04 Installation and Use of Shoreline Erosion Control Measures

#### A. Requirements

1. Structural shoreline erosion control measures shall not be permitted in those areas where minimal demonstrable erosion is evident, as determined by the Department.

2. Efforts shall be made to utilize shoreline erosion control methods that best provide for the conservation of aquatic nearshore habitat, maintain water quality, and avoid other adverse environmental effects. These include, but are not limited to, vegetation, revetments, and gabions. Structural erosion control measures may be allowed where it can be shown, through a review of site conditions and generally accepted engineering standards, that nonstructural measures would be ineffective in controlling erosion. When engineering feasibility and effectiveness considerations are equal, the shoreline erosion control method utilized shall be the one with the least adverse environmental impact.

3. Nonstructural measures are preferred for shoreline stabilization work in:

a. Low wave energy areas where no significant shoreline erosion occurs or wetlands occur. In this case, the allowable activity or measure should be limited to, the introduction or management of suitable vegetation.

b. Eroding areas where combinations of structural/nonstructural measures would be a practicable and effective method of erosion control. In this case, the allowable activities include:

(1) The properly designed and constructed regrading and contouring of the shoreline followed by planting and management of suitable vegetative stabilizing cover.

(2) A combination of low profile stone groins and suitable vegetative stabilizing cover.

(3) Properly designed and constructed low-profile rip-rap revetments, marsh-toe sills, or other non-vertical structures which may be used in conjunction with vegetative stabilizing cover.

4. Vertical-walled structures shall be allowed only where a non-vertical structure, designed to equal standards, would be ineffective to control erosion, where deleterious environmental effects associated with the construction of vertical structures would be less than the impacts on the adjacent environment during construction of a non-vertical structure, where functionally, no practical alternatives exist for certain water-dependent facilities or activities, or where generally accepted engineering practices would preclude the use of non-vertical walled structures.

5. All structural shoreline erosion control measures shall be designed to conform to generally accepted engineering principles. If the designed measure does not conform to accepted engineering principles, the

Department may require a design to be prepared, signed, and sealed by a professional engineer registered in Delaware.

6. Structural erosion control measures shall address and satisfy the following elements:

- a. Protection of aquatic biota, wetlands, and nearshore shallow water habitat.
- b. Protection of water quality, flushing, and naturally occurring littoral drift and flow.
- c. For vertical walls, protection against "toe scour" by adequately designed toe depth and, in high energy environments, rip-rap at the toe of the structure for existing tidal and wave conditions.
- d. Adequate flow and circulation necessary to support the functional value of adjacent wetlands or aquatic habitat.
- e. Materials and methods of construction shall be sufficient to withstand the stresses to which they will be subjected, from wind, waves, tides, currents, ice, and debris.
- f. Avoidance or minimization of increased erosion of adjacent or downdrift shorelines.

B. Additional Requirements

1. Erosion control measures shall be installed and used only for the purposes of shoreline stabilization; any structure which serves or could serve to increase the property of an applicant shall be regulated by the provisions of Section 3.05 below.

2. Bulkheads must be aligned, where possible, with any adjacent bulkheads and shall be designed to prevent the possibility of trapping floating debris or impairing water circulation.

3. Each shoreline erosion control structure shall be designed to the extent possible to minimize adverse environmental impacts. If the Department determines that the granting of a permit for a shoreline erosion control structure will result in loss to the public of a substantial resource, the permittee may be required to take measures which will offset or mitigate the loss.

4. No permanent structure (building, house, patio, porch, deck, or other such structure) shall be constructed on a bulkhead or any portion of the anchoring system or any adjacent area that would interfere with future repair and/or replacement of the bulkhead.

3.05 Activities Involving Dredging, Filling, Excavating or Extracting Materials

A. Objectives

Projects shall be designed to meet the following objectives:

1. Conform to the pertinent objectives, classification system, environmental considerations, and criteria of the "Inland Bays Dredging Study, Volumes I and II," dated April 1986, as adopted by the Department on July 18, 1986.
2. Maintain the navigability of channels.
3. Maintain or improve the environmental quality of the State's water resources, subaqueous lands



and wetlands.

**B. General Evaluation Consideration**

The Department shall consider the following additional factors in reviewing a dredging, filling, excavating, or extracting application:

1. Any environmental impacts at and surrounding the dredging site(s).
2. Any environmental effects of the disposal of the dredged materials at and surrounding the disposal or fill site(s), before or after mitigation, during and following the disposal of fill activities and particularly impacts on water quality as described below in Paragraph C.
3. Any economic and noneconomic benefits of the project compared to the costs of the project, both direct and secondary.
4. Consistency of the project with regional growth and local land use plans.

**C. Water Quality on Dredging Projects**

The applicant may be required to submit information to the Department to facilitate its evaluation of water quality impacts, as may be required to ensure compliance with State Surface Water Quality Standards.

The following concerns for protecting water quality shall be specifically considered by the Department in evaluating applications for dredging projects:

1. All dredging is to be conducted in a manner consistent with sound conservation and water pollution control practices. Spoil and fill areas are to be properly diked to contain the dredged material and prevent its entrance into any surface water. Specific requirements for spoils retention may be specified by the Department in the approval, permit or license.
2. All material excavated shall be transported, deposited, confined, and graded to drain within the disposal areas approved by the Department. Any material that is deposited elsewhere than in approved areas shall be removed by the applicant and deposited where directed at the applicant's expense, and any required mitigation shall also be at the applicant's expense.
3. Materials excavated by hydraulic dredge shall be transported by pipeline directly to the approved disposal area. All pipelines shall be kept in good condition at all times and any leaks or breaks shall be immediately repaired.
4. Materials excavated and not deposited directly into an approved disposal area shall be placed in scows or other vessels and transported to either an approved enclosed basin, dumped, and then rehandled by hydraulic dredge to an approved disposal area, or to a mooring where scows or other vessels shall be unloaded by pumping directly to an approved disposal area.
5. When scows or other vessels are unloading without dumping, they shall have their contents pumped directly into an approved disposal area by a means sufficient to preclude any loss of material into the body of water.
6. In approved disposal areas, the applicant may construct any temporary structures or use any means

necessary to control the dredge effluent, except borrowing from the outer slopes of existing embankments and/or hydraulic placing of perimeter embankments. For bermed disposal sites, a minimum freeboard of two (2) feet, measured vertically from the retained materials and water to the top of the adjacent confining embankment, shall be maintained at all times.

7. The applicant shall not obstruct drainage or tidal flushing on existent wetlands or upland areas adjacent thereto. The applicant shall leave free, clear, and unobstructed outfalls of sewers, drainage ditches, and other similar structures affected by the disposal operations. The dredged materials shall be distributed within the disposal area in a reasonably uniform manner to permit full drainage without ponding during and after fill operations.

8. The dredging operation must be suspended if water quality conditions deteriorate in the vicinity of dredging or the spoil disposal site. Minimum water quality standards may be included as an element of the permit and shall be monitored by the applicant. Violation of these conditions shall be cause for immediate suspension of activity and notification of the Department. Dredging shall not be resumed until water quality conditions have improved and the Department has authorized the resumption.

#### D. Prohibited Dredging Project

The following types of dredging projects are prohibited.

1. Dredging of biologically productive areas, such as nursery areas, shellfish beds, and submerged aquatic vegetation, if such dredging will have a significant or lasting impact on the biological productivity of the area.
2. Dredging of new dead-end lagoons, new basins and new channels, which have a length to width ratio greater than 3:1 and for which the applicant cannot prove, by clear and convincing evidence, that such dredging would not violate State Surface Water Quality Standards. This subsection shall not apply to marina projects governed by the Marina Regulations.
3. Dredging channels, lagoons, or canals deeper than the existing controlling depth of the connecting or controlling waterway, unless otherwise approved under Subsection 3.03B(3) of these Regulations.
4. Dredging channels, cleaning marinas, or other subaqueous areas by using propeller wash from boats.

#### E. Removal of Public Subaqueous Lands

No person shall remove any material from public subaqueous lands without Department approval and receipt by the Department of full payment of the fee for the amount of material estimated to be removed. The Department reserves the right to determine the amount of material to be removed in dredging and/or filling projects.

### 3.06 Creation of Lands

#### A. Creation

No person shall fill, reclaim, or alter public subaqueous lands without the Department approval and receipt by the Department of full payment of a lease fee for the estimated area of land created or affected. The land created shall remain State property and may be leased to the applicant under terms and conditions to be set by the Department, unless otherwise conveyed as noted below in paragraph B. Lease fees may be waived for shoreline erosion control projects which have demonstrated water quality or habitat benefits associated with their use.

SECTION 4. FEES

4.01 Application Fees

Every application, except those from a state or federal government agency or political subdivision of the State of Delaware, shall be accompanied by the nonrefundable application fee established by the General Assembly. This fee shall cover the costs of handling and evaluating the application, and other expenses of administering the subaqueous lands program.

4.02 Lease Fees

Lease fees shall be established by the General Assembly for all commercial and non-commercial projects over public subaqueous lands.

The lease and fee requirements of these Regulations shall be applicable to all activities and structures, including previously leased lands, where no fee was required.

Lease fees shall apply to any lease that has expired until such time as the structure is removed pursuant to a denial or revocation, or until such time as a new lease has been issued.

4.03 Hearing Fees

A. Costs

The costs of public hearings, as described below, shall be charged to the applicant. These costs may include the costs of publication of the notice of the hearing, charge for the hearing room, if any, costs for recording, transcription, and copying the proceedings, and other costs directly related to the hearing. No charge will be made for the salaries and expenses of the public officials involved in the hearing.

B. Deposit

The Secretary may require a deposit in addition to the application fee at the time of application, or at any other time, to ensure payment of the applicable fees.

JOINT AGREEMENT  
BETWEEN  
THE STATE OF NEW JERSEY  
AND  
THE STATE OF DELAWARE

WHEREAS, pursuant to 29 Del. C. §202, the Director of the Division of Historical and Cultural Affairs and the Secretary of the Department of Natural Resources and Environmental Control have been authorized to make joint agreements with the appropriate officials or agencies of an adjacent State and the National Geodetic Survey to delineate more thoroughly any part of any common boundary between the State of Delaware and any adjacent State; and

WHEREAS, pursuant to 29 Del. C. §202(c), the Director of the Division of Historical and Cultural Affairs and the Secretary of the Department of Natural Resources and Environmental Control in conjunction with the Delaware State Boundary Commission are authorized to negotiate a final settlement of questions arising as to the common boundary between the State of Delaware and any adjacent State; and

WHEREAS, N.J.S.A. 52:29-2 authorizes and directs the New Jersey Department of Environmental Protection to examine every monument marking the boundaries of the State of New Jersey and to cooperate with adjacent States to restore and repair boundary monuments found to have been injured, displaced or removed and to set suitable monuments wherever they are wanting at intersections with highways; and

WHEREAS, at a joint meeting of representatives of the State of New Jersey and the Boundary Commission of Delaware held January 29, 1986, in Newark, Delaware, it was determined that five Delaware-New Jersey Boundary Reference Monuments and one Delaware-New Jersey Boundary Monument needed corrective action and that efforts would be made to correct those problems as is more particularly described in Exhibit A attached hereto and made part hereof; and

WHEREAS, necessary corrective action was taken, including replacement of one boundary monument with a boundary reference monument and having Global Positioning by Satellite (GPS) positions established for all new reference monuments set,

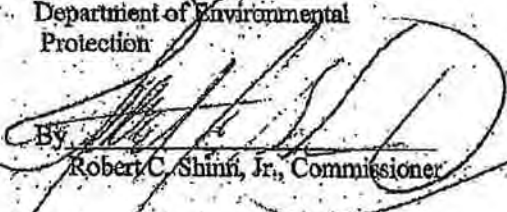
NOW, THEREFORE, pursuant to their respective authorities, the parties have determined and agree that the appropriate restorative and resurvey actions were taken; and that the National Geodetic Survey has reviewed, adjusted, and accepted the GPS resurvey of the six new Delaware-New Jersey Boundary Reference Monuments which have had GPS positions established, from which one can reference the 1934 Mean Low Water Line Boundary between the States of Delaware and New Jersey as more particularly described in Exhibit B attached hereto and made part hereof; that the six new Boundary Reference Monuments which reference the 1934 Mean Low Water Line Boundary are properly represented between DE-NJ Reference Monument 1 and DE-NJ Reference Monument 6, each having a GPS position that can be precisely relocated using GPS technology as is more particularly described in Exhibit C attached hereto and made part hereof.

This agreement does not alter the location of the boundary between the states as determined by the United States Supreme Court in New Jersey v. Delaware, 295 U.S. 694 (1935) and the Compact of 1967, 34 Stat. 858, nor does it affect the provisions of N.J.S.A. 52:29-1 et seq.

It is agreed by the parties that the above survey represents with greatest possible fidelity the present established boundary of the States.

IN WITNESS WHEREOF, The parties have hereunto executed this Agreement this 29<sup>th</sup> day of August, 2001.

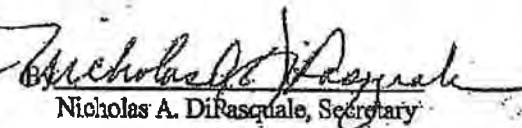
STATE OF NEW JERSEY  
Department of Environmental  
Protection

By   
Robert C. Shinn, Jr., Commissioner

New Jersey Geological Survey

By   
Karl W. Muessig, State Geologist

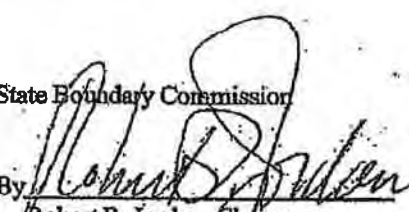
STATE OF DELAWARE  
Department of Natural  
Resources and Environmental Control

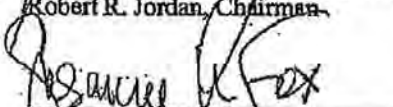
By   
Nicholas A. DiPasquale, Secretary

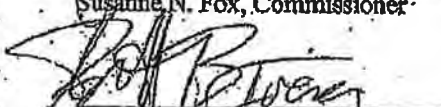
Division Of Historical And  
Cultural Affairs

By   
Daniel R. Griffith, Director

State Boundary Commission

By   
Robert R. Jordan, Chairman

  
Susanne N. Fox, Commissioner

  
Bettina L. Riveros, Commissioner

STATE OF NEW JERSEY )  
 ) ss.  
COUNTY OF MERCER )

I hereby certify that Robert C. Shinn, Jr., Commissioner of the New Jersey Department of Environmental Protection, personally appeared before me this 5 day of May, 2001 and acknowledged the foregoing Agreement to be his act and deed and the act and deed of the Department of Environmental Protection for the purposes therein contained.

*Richard A. Murray, Esq.*  
Notary Public  
*attorney at law - New Jersey*

STATE OF NEW JERSEY )  
 ) ss.  
COUNTY OF MERCER )

I hereby certify that Karl W. Muessig, State Geologist of the New Jersey Geological Survey, personally appeared before me this 23<sup>rd</sup> day of May, 2001 and acknowledged the foregoing Agreement to be his act and deed and the act and deed of the Department of Environmental Protection for the purposes therein contained.

*Keehauffen Murray, Esq.*  
Notary Public  
*attorney at law - New Jersey*

STATE OF DELAWARE )  
 ) ss.  
COUNTY OF KENT )

I hereby certify that Nicolas A. DiPasquale, Secretary of the Department of Natural Resources and Environmental Control of the State of Delaware, personally appeared before me this 11<sup>th</sup> day of JUNE, 2001 and acknowledged the foregoing Agreement to be his act and deed and the act and deed of the State Boundary Commission for the purposes therein contained.

*Gene Allen Young*  
Notary Public



DE20121

STATE OF DELAWARE )  
 ) ss.  
COUNTY OF KENT )

I hereby certify that Daniel R. Griffith, Director of the Division of Historical and Cultural Affairs of the State of Delaware, personally appeared before me this 26<sup>th</sup> day of June, 2001 and acknowledged the foregoing Agreement to be his act and deed and the act and deed of the State Boundary Commission for the purposes therein contained.

Charles R. Vickers  
Notary Charles R. Vickers  
Notary Public, State of Delaware  
Commission Expires 1-10-02

STATE OF DELAWARE )  
 ) ss.  
COUNTY OF NEW CASTLE )

I hereby certify that Robert R. Jordan, Chairman of the State Boundary Commission, personally appeared before me this 29<sup>th</sup> day of August, 2001 and acknowledged the foregoing Agreement to be his act and deed and the act and deed of the State Boundary Commission for the purposes therein contained.

Gail Alan Krucif  
Notary Public

STATE OF DELAWARE )  
 ) ss.  
COUNTY OF KENT )

I hereby certify that Susanne N. Fox, Commissioner of the State Boundary Commission, personally appeared before me this 1<sup>st</sup> day of JUNE, 2001 and acknowledged the foregoing Agreement to be her act and deed and the act and deed of the State Boundary Commission for the purposes therein contained.


Gail Alan Krucif  
Notary Public

STATE OF DELAWARE )

COUNTY OF NEW CASTLE )

) ss.  
)

I hereby certify that Bettina L. Riveros, Commissioner of the State Boundary Commission, personally appeared before me this 1<sup>st</sup> day of JUNE, 2001 and acknowledged the foregoing Agreement to be her act and deed and the act and deed of the State Boundary Commission for the purposes therein contained.

  
Notary Public

DE20123



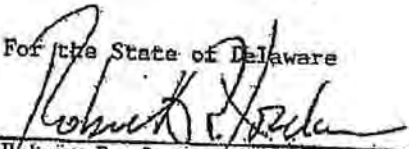
JOINT AGREEMENT  
BETWEEN THE STATES OF DELAWARE AND NEW JERSEY

This agreement between the States of Delaware and New Jersey indicates the steps that are to be taken to correct problems with boundary reference monuments and boundary monuments, along the Delaware-New Jersey boundary line. The work should be carried out expeditiously by representatives of the States and the National Geodetic Survey. Any expenses involved are to be identified and agreed to by the Delaware State Boundary Commission before proceeding. New Jersey shall provide in kind service only.

The Commissioners specify these actions:

Monuments Reference	Problem	Corrective Action
Boundary Ref. DE-NJ 1	Tilted, located in hazardous waste area.	Set a new monument referencing the original 1934 mean low water point.
Boundary Ref. DE-NJ 2	Concrete is badly crazed.	Set a new monument referencing the original 1934 mean low water point.
Boundary Ref. DE-NJ 3	Missing.	Set a new monument referencing the original 1934 mean low water point.
Boundary Ref. DE-NJ 4	Prono, underwater, disc missing.	Set a new monument referencing the original 1934 mean low water point.
Boundary Ref. DE-NJ 5	Prono, underwater, disc missing.	Set a new monument referencing the original 1934 mean low water point.
Boundary		
Boundary Mon. DE-NJ 6	Top of monument containing disc broken.	Set a new monument referencing the original position of the 1934 Boundary Monument #6.

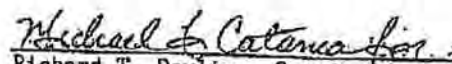
For the State of Delaware

  
Robert R. Jordan, Chairman  
Delaware Boundary Commission

Date

4/11/86

For the State of New Jersey

  
Richard T. Dewling, Commissioner  
Department of Environmental  
Protection

Date

5/19/86

AMENDMENT REPLACING EXHIBIT C  
OF THE 2001 JOINT AGREEMENT  
BETWEEN  
THE STATE OF NEW JERSEY  
AND  
THE STATE OF DELAWARE

WHEREAS, pursuant to 29 Del. C. § 202, the Director of the Division of Historical and Cultural Affairs and the Secretary of the Department of Natural Resources and Environmental Control have been authorized to make joint agreements with appropriate officials or agencies of an adjacent state and the National Geodetic Survey to delineate more thoroughly any part of any common boundary between the state of Delaware and any adjacent state; and

WHEREAS, N.J.S.A. 52:29-2 authorizes and directs the New Jersey Department of Environmental Protection to examine every monument marking the boundaries of the state of New Jersey and to cooperate with adjacent states to restore and repair boundary monuments found to have been injured, displaced or removed and set suitable monuments wherever they are wanting at intersections with highways; and

WHEREAS, at joint meeting of representatives of the State of New Jersey and the Boundary Commission of Delaware held August 29, 2001, an agreement was signed by both parties re-establishing six new boundary reference monuments that have Global Positioning by Satellite (GPS) positions from which one can reference the 1934 Mean Low Water Line Boundary between the States of Delaware and New Jersey within the 12-Mile Circle; and

WHEREAS, during work on recreating the 1934 Mean Low Water Line as a digital vector line layer, for inclusion in the Delaware Spatial Data Framework (DSDF) boundary layer the U.S. Geological Survey (USGS) found inconsistencies in attachment C of the 2001 agreement pertaining to the exact location of reference monuments 1,3,4, and 5; and

WHEREAS, Mr. David Doyle, Chief Geodetic Surveyor, National Oceanic and Atmospheric Administration National Geodetic Survey, has researched these inconsistencies and in a review and report on the Delaware-New Jersey boundary through the Delaware River and Delaware Bay, has provided a detailed explanation of the inconsistencies as is more particularly described in his January 6, 2004 report attached hereto as Exhibit A and made part hereof; and

WHEREAS, Mr. Doyle also recommends in his report that the lists of the North American Datum of 1927 (NAD27) and NAD83 (1991) for the Boundary Points 1,2,3,4,5, and 6 provided in his report be incorporated into the agreement by this amendment to avoid future confusion,

NOW THEREFORE, pursuant to their respective authorities, the parties have determined and agree that the North American Datum of 1927 (NAD27) and NAD83

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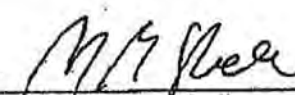
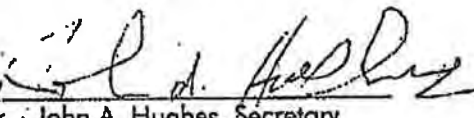
(1991) coordinates provided by Mr. Doyle in his report for Boundary Points 1,2,3,4,5, and 6 are verified and correct, and that this amendment and the report at Exhibit A shall be attached to the original agreement signed August 29, 2001 and shall replace the original Exhibit C in that agreement.

It is agreed by the parties that the above amendment and the attached report of Exhibit A replaces Exhibit C in the original August 29, 2001 agreement and that this now amended agreement represents, with the greatest possible fidelity, the present established boundary of the states.

The amendment shall become effective on the date of the last signature.

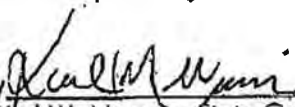
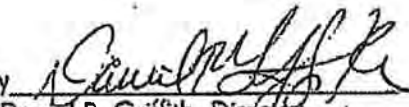
STATE OF NEW JERSEY  
Department of Environmental  
Protection

STATE OF DELAWARE  
Department of Natural  
Resources and Environmental Control

By  By   
Bradley M. Campbell, Commissioner ; John A. Hughes, Secretary

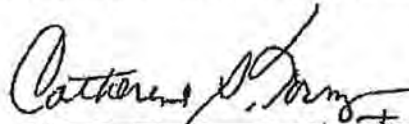
New Jersey Geological Survey

Division of Historical and Cultural Affairs

By  By   
Karl W. Muessig, State Geologist Daniel R. Griffith, Director

STATE OF NEW JERSEY )  
 ) ss.  
COUNTY OF MERCER )

I hereby certify that Bradley M. Campbell, Commissioner of the New Jersey Department of Environmental Protection, personally appeared before me this 22<sup>nd</sup> day of February, 2007 and acknowledged the foregoing agreement to be his act and deed and the act and deed of the Department of Environmental Protection for the purposes therein contained.

  
\_\_\_\_\_  
Notary Public  
Attorney at Law of New Jersey


STATE OF NEW JERSEY )  
 ) ss.  
COUNTY OF MERCER )

I hereby certify that Karl W. Muessig, State Geologist of the New Jersey Geological Survey, personally appeared before me this 25 day of January, 2007 and acknowledged the foregoing agreement to be his act and deed and the act and deed of the of the New Jersey Geological Survey for the purposes therein contained.

  
\_\_\_\_\_  
Notary Public

STATE OF DELAWARE )  
 ) ss.  
COUNTY OF KENT )

I hereby certify that John A. Hughes, Secretary of the Department of Natural Resources and Environmental Control, personally appeared before me this 1st day of December, 2004 and acknowledged the foregoing agreement to be his act and deed and the act and deed of the of Department of Natural Resources and Environmental Control for the purposes therein contained.

  
\_\_\_\_\_  
Notary Public

CAROL C. BROWN  
Notary Public, State of Delaware  
My Commission Expires Nov. 28, 2007

DE26048

STATE OF DELAWARE )  
 ) ss.  
COUNTY OF KENT )

I hereby certify that Daniel R. Griffith, Director of the Delaware Division of Historical And Cultural Affairs, personally appeared before me this ~~21st~~ day of December, 2004 and acknowledged the foregoing agreement to be his act and deed and the act and deed of the of Division of Historical And Cultural Affairs for the purposes therein contained:

*Constance A. Stultz*  
Notary Public

462-03

DE26049

No. 134, Original  
In the  
Supreme Court  
of the  
United States

---

State of New Jersey

v.

State of Delaware

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**Expert Report of Carol E. Hoffecker, Ph.D.**

My name is Carol E. Hoffecker, Ph.D. My address is 804 Cinnamon Drive, Hockessin, Delaware 19707. I am Richards Professor Emerita of History, University of Delaware, where I taught for approximately thirty-five years. I am the author of numerous books and articles dealing with aspects of Delaware history, including *Democracy in Delaware, The Story of the First State's General Assembly* (2004) and *Federal Justice in the First State: A History of the United States District Court for Delaware* (1992).

I have been assisted in preparing this report by Barbara E. Benson, Ph.D. Dr. Benson is the retired Executive Director of the Historical Society of Delaware and had served as an adjunct faculty member in the History Department of the University of Delaware from 1981-2003.

Neither I nor Dr. Benson has any financial interest in, or current employment or consulting arrangement with, any of the parties to this case other than having been

retained by the State of Delaware to review the claim made by the State of New Jersey, to provide my opinion as an expert on the background and historical context of the Compact of 1905 and to prepare this Expert Report.

#### **Qualifications**

Over more than forty years as a scholar and teacher, one of my principal interests has been research and teaching Delaware history, including the State's political history.

#### **Information Required Pursuant to Rule 26(a)(2)(B)**

My curriculum vitae is attached hereto as Exhibit A. Dr. Benson's curriculum vitae is attached hereto as Exhibit B.

All the data and information considered by me in forming the opinions herein, other than knowledge gained over many years of study in the field, are cited in this report.

I am being compensated for my work in preparing this report and for my testimony, if called, at the rate of \$200 per hour. Dr. Benson is being compensated at the same rate. Our compensation is not contingent on, or related in any way, to the outcome of this case.

#### **Scope of Assignment**

I have been retained by the State of Delaware to provide an opinion as to the historical background and context of the Compact of 1905.

#### **Summary of Opinion**

The Compact of 1905 grew out of an interstate conflict concerning the regulation of fishing rights in the Delaware River. In 1871, Delaware's General Assembly adopted a law to tax out-of-state commercial fisherman in Delaware's waters. Since colonial

times, Delaware had claimed water rights and the subaqueous soil in the Delaware River to the low water mark within a twelve-mile circle measured from the town of New Castle, Delaware. In 1877, New Jersey brought suit in the United States Supreme Court to contest Delaware's boundary claim and its right to regulate fishing in the river. The case languished for many years until both states decided to discontinue the litigation, without prejudice, based on agreements set forth in an interstate compact, which has come to be known as the Compact of 1905. The Compact of 1905 should be viewed in the context of a particular historical moment in time. It was designed to resolve the fishing dispute that caused the litigation. It was not intended to infringe on Delaware's boundary or jurisdictional claims in other respects, as to which both states reserved their claims. Delaware's boundary claim was later confirmed by the United States Supreme Court in 1934. By that time, there were few fish in the Delaware River, and the states were no longer concerned with the fishing issues that had led them to enter into the Compact of 1905.

### Opinion

Disputes over the commercial uses of the Delaware River and Bay have plagued relations between Delaware and New Jersey since colonial times. The two states' protracted cases before the United State Supreme Court can remind readers of fiction of the seemingly endless suit of *Jarndyce v. Jarndyce*, in Charles Dickens's *Bleak House*. Since the Age of Discovery, the Delaware River and Bay have provided a major entry into the east coast of the United States. Today they remain a major commercial link to the world for the cities of Trenton, New Jersey, Philadelphia, Pennsylvania, and Wilmington, Delaware. These waterways are also an essential part of the Atlantic



Basin's ecosystem and have been an important source of food to the people who have lived along their shores for many centuries. Those many uses have not always coexisted harmoniously. The Delaware River and Bay have served both Delaware and New Jersey well, yet these bodies of water continue to separate the two states in more ways than one. This report describes the historical background of some of those conflicts and how the states have attempted to resolve them over time.

### **Early Fishing on the Delaware**

Long before the European settlement of the Delaware River Valley, Native Americans paddled their dugout canoes on the waters of the Lenape Wihittuck, or the river of the Lenape, as the great river was then called.<sup>1</sup> The Lenni Lenape lived on both sides of the river, which was their major transportation artery and an important source of food. As part of their annual cycle of the seasons, Lenni Lenape visited the shores of the river and its tributaries during the summer months to fish for shad, sturgeon, and other fin fish, as well as to harvest oysters and shellfish. The abundance of fish and oysters made fishing easy. During the spawning season for shad and sturgeon, Lenape men and boys came to the river as those fish moved from salt to fresh water and then back again. They used woven nets and wooden stakes to create fence-like weirs to capture the fish. Some of the Native Americans would wade into the river to drive the fish into the net, where others could spear or even catch their slippery prey with bare hands.<sup>2</sup>

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<sup>1</sup> C.A. Weslager and Louise Heite, "History," in *The Delaware Estuary: Rediscovering a Forgotten Resource*, eds. Tracey L. Bryant and Jonathan R. Pennock (Newark, Del.: University of Delaware Sea Grant Program, 1998), p. 11.

<sup>2</sup> *Ibid.*; C. A. Weslager, *The Delaware Indians* (New Brunswick, N. J.: Rutgers University Press, 1972), esp. chap. 3, pp. 50-76. For an illustration of Lenape shad fishing, see Weslager and Heite, "History," p. 14. Eventually the river once known as the "river of the Lenape" came to be known as the Delaware River, and the Native Americans living there as Delaware Indians.

Western Europeans arrived in ever-increasing numbers in the seventeenth century to exploit and to assert their control over the Delaware River and Valley and the lands that surround it. For nearly a hundred years, the Dutch, the Swedes, and the English vied for control over part or all of the lands along the Delaware. Fur trading and whaling brought the first Europeans, but soon many could see the opportunities for financial advancement through exploitation of other natural resources. Most people immediately think of the trade in animal pelts, especially the highly prized beaver, but the variety and abundance of fin fish and shellfish under the water were also seen as a major commercial resource.<sup>3</sup>

Virtually every explorer and early settler commented on the abundance of the Delaware River. For example, Thomas Yong, sailing for England in 1634, waxed eloquent about the region of the Delaware. He compared the climate to that of Italy, and of the fish he noted, "heere is plenty, but especially sturgeon all the sommer time . . ."<sup>4</sup> Peter Lindeström, who came about 1650 to the Delaware as part of the New Sweden Colony, had to describe shad for his masters in Stockholm: "a kind of large fish like the salmon, runs against the stream like a salmon . . . ; a very fine flavored and excellent tasting fish . . ."<sup>5</sup> Within a year of his arrival on the Delaware, William Penn bragged to friends back in England about the bounty of the Delaware River. To John Aubrey he

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<sup>3</sup> Two scholarly but highly readable introductions to colonization of the western shore of the Delaware River are John A. Munroe, *Colonial Delaware: A History* (Millwood, N.Y.: KTO Press, 1978) and C.A. Weslager, *The English on the Delaware, 1610-1682* (New Brunswick, N.J.: Rutgers University Press, 1967).

<sup>4</sup> "Account of Thomas Yong, 1634," in *Narratives of Early Pennsylvania, West New Jersey, and Delaware, 1630-1707*, ed. Albert Cook Myers (New York: Charles Scribner's Sons, 1912), p. 48.

<sup>5</sup> Peter Lindeström, *Geographia Americae*, trans. Amandus Johnson (Philadelphia: Swedish Colonial Society, 1925), p. 187.

wrote, "the sorts of fish in these parts are excellent and numerous. Sturgeon leap day and night that we can hear them . . . in our beds."<sup>6</sup> A month later he told the Earl of Sunderland that there were "fish in abundance, especially of Shad and Rock [striped bass], which are excellent here."<sup>7</sup>

In 1683 William Penn had every reason to enjoy, in a proper Quaker way, his enviable position as proprietor of not one, but two, English colonies in North America. Little did he know then how difficult, how litigious, his struggle would be to hold claim to his colonies and to pass them down to his heirs. Because of his father's wealth and position, William traveled in the upper circles of the English aristocracy. His conversion to the radical new religion of the Society of Friends pained and frustrated his father and often moved young Penn beyond the realms of elite society. His faith led him to many places, including the Mid-Atlantic region of North America. His first encounter with this colonial world came with West Jersey, an experience that he found fraught with both potential and pitfalls. He learned that colonial lands could be used to create areas of settlement for Quakers and other religious nonconformists, but he also learned various lessons about the legal dangers of both partnerships and the Crown.<sup>8</sup>

William Penn subsequently sought a grant of land from England's monarch to create his own colony on the opposite or western side of the Delaware River. King Charles II owed Penn a large debt for money borrowed from Penn's late father. Penn preferred land to cash, and North American land was much easier for Charles to spare

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<sup>6</sup> William Penn to John Aubrey, June 13, 1683, *The Papers of William Penn*, 5 vols., eds. Richard S. Dunn and Mary Maples Dunn et al. (Philadelphia: University of Pennsylvania Press, 1981-1986), 2:395.

<sup>7</sup> William Penn to Earl of Sunderland, July 28, 1683, *The Papers of William Penn*, 2: 417.

<sup>8</sup> For a modern biography of William Penn, see Richard S. Dunn and Mary Maples Dunn, eds., *The World of William Penn* (Philadelphia: University of Pennsylvania Press, 1986).

than money. But such a grant had to fit a new colony into an area already partially carved up into the Colony of Maryland, granted to Lord Baltimore by Charles I in 1632, and the Three Lower Counties on Delaware, which the king's brother, James, duke of York, had seized from the Dutch in 1664. Imprecise knowledge of the area's geography, and its cartographic representations, made this grant tricky, and thereby began the controversy over the boundaries of Delaware.

Delaware's unusual shape and its claim to the Delaware River to the low-water mark on the eastern shore began with the royal grant of Pennsylvania. The Duke of York wanted to protect his major town and administrative center on the western side of the Delaware River, so his secretary, Sir John Werden, proposed a circle boundary from the town, New Castle, as a territorial buffer. The final determination of a twelve-mile circle was transferred just two years later, in 1682, by deed and lease to William Penn. Penn thus gained control of the western side of the Delaware River through two separately granted but contiguous colonies: the Province of Pennsylvania and The Three Lower Counties on Delaware.

Much time and attention, to say nothing of parchment, paper, and ink, have been lavished on the question of Delaware's boundaries for over 300 years. The Duke of York's "clouded title" to land on the western side of the river, as noted historian John A. Munroe so delicately termed it, accounts for those controversies. Lawyers, historians, and archivists have spent countless hours marshalling the documents and arguments used to assert the rights of one claimant over another, from William Penn and Charles Calvert, Lord Baltimore, to the states of New Jersey and Delaware. Legal decisions establishing and affirming the boundaries of the second smallest colony/state by size took from 1750

when the English Court of Chancery upheld the Penn claims over those of Lord Baltimore to the 1934 United States Supreme Court decision written by Justice Benjamin Cardozo upholding the State of Delaware's claim to the territory within the twelve-mile circle from New Castle to the low-water mark on the eastern shore of the Delaware River.<sup>9</sup>

### **The Nineteenth-Century Fishing Industry on the Delaware**

While the colonial population expanded and territorial boundaries were adjudicated, the river of the Leni Lenape became a major transportation corridor, and its fin fish and shellfish continued to be an important part of the local diet and commerce. By the middle of the nineteenth century fishing on the Delaware had become a profitable business, and newspapers in Philadelphia eagerly reported on the enormity of the annual catch.<sup>10</sup> Fishermen and fishing industries on the Delaware, like individuals and companies almost everywhere, reacted accordingly. Throughout history, when natural resources appear to be so plentiful as to be without limit, those involved in their exploitation see little reason for restraint. Exploitation, not conservation, becomes the operative mentality. The reasoning is always the same: if the harvest of a resource, like fish, is good, then more capital, more labor, and more tools will surely lead to greater exploitation and greater profits.

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<sup>9</sup> For brief summaries of early boundary decisions, see, among many, Weslager, *English on the Delaware*, pp. 221-26, and Munroe, *Colonial Delaware*, pp. 79-84. The Duke of York's deed of feoffment to William Penn delineated the boundary thusly: "all that the Towne of NewCastle otherwise called Delaware and All that Tract of Land lying within the Compass or circle of Twelve Miles about the same scituate lying and being upon the River Delaware in America And all Islands in the same River Delaware and the said River and Soyle thereof lying North of the Southernmost part of the said Circle of Twelve Miles about the said Towne" (*State of New Jersey v. State of Delaware*, 291 U.S. 361, 364 (1934)).

<sup>10</sup> Quoted in *Delmarva Star* (Wilmington, Del.), Mar. 31, 1929.

The two fin fish of particular value to the Delaware River's nineteenth-century fishing industry were the favorites from time immemorial: the shad and the sturgeon. William Penn's beloved shad is one of the largest and most valuable members of the herring family. Shad, which can weigh as much as twelve pounds, live in the salt water of the Atlantic Ocean, but from age three to five onward they return to fresh water to spawn. Shad-spawning season on the Delaware is primarily April through June. Shad can be found along the Atlantic coast of North America from the Gulf of Saint Lawrence to Florida, but they are most abundant in the Delaware River and the Chesapeake Bay. Atlantic sturgeon are found from the Saint Lawrence River south to the Gulf of Mexico. At the height of the sturgeon industry, the Delaware fishery was the largest in America. Sturgeon can reach a length of ten to twelve feet and, like shad, live in salt water but travel to fresh water to spawn. Sturgeon spawning season on the Delaware is normally the months of May and June.<sup>11</sup>

The Delaware River's commercial fishing industry began and ended with shad. From the 1870s, shad fishermen on the Delaware found eager buyers. At first fishermen sold their catch from their boats, or their wives hawked them at local markets. Then buyers from all over the East Coast came to the major port towns. By the end of the nineteenth century, much of Delaware's shad catch was sent to distant markets in water-tank rail cars. As the shad industry boomed, its expenses increased. More men and boats took to the water, and the drift nets used to catch the shad got longer and longer, reaching up to a mile in length. Often fishermen worked cooperatively in groups, fishing in teams

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<sup>11</sup> For an overview of the fish and fishing industry of the Delaware River and Bay, including shad and sturgeon, see Kent S. Price, Robert A. Beck, Steward M. Tweed, and Charles B. Epifanio, "Fisheries," in *The Delaware Estuary: Rediscovering a Forgotten Resource*, eds. Tracey L. Bryant and Jonathan R. Pennock (Newark, Del.: University of Delaware Sea Grant Program, 1998), pp. 71-89.

and sharing shoreline fishing shacks for eating and sleeping between trips. On the western shore of the river, the dominant shad-fishing area extended from Port Penn to Wilmington, while on the eastern shore, Penn's Grove was an important shad center. The shad catch in the Delaware increased dramatically: from about 3 million pounds a year in 1880 to nearly 15 million pounds in the early twentieth century. But then the shad industry fell as rapidly as it had soared. For the State of Delaware alone, the shad catch dropped 99 percent from 1896 to 1944. What brought about this collapse? One newspaper bluntly summed it up by saying, "killed off by greed and pollution."<sup>12</sup>

Initially, commercial fishermen on the Delaware viewed the huge, jumping sturgeon as a "nuisance" rather than an exploitable asset. Sturgeon surged upriver in spawning season in such huge numbers that people swore that the fish would actually jump into boats.<sup>13</sup> Shad fishermen hated sturgeon because the fish caused heavy damage, even destruction, when caught in shad nets. When shad fishermen saw sturgeon racing toward their nets, their best recourse was to try to take their nets in. Slowly a market grew for sturgeon meat, particularly smoked sturgeon, but the sturgeon really took off

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<sup>12</sup> *Delmarva Star*, Mar. 4, 1923. No single comprehensive source on the history of shad fishing in the Delaware River exists, but a good understanding can be gained by reading Price, Beck, Tweed, and Epifanio, "Fisheries," pp. 71-77, who note that improved water quality and government regulations have recently significantly increased the shad population in the Delaware. This increase, however, has not created a similar return of a shad fishing industry because the competitive situation has changed. See also, James G. Horn, "The History of the Commercial Fishing Industry in Delaware" (B.A. thesis, University of Delaware, 1957), pp. 2-20; Jay L. Harmic, "History of Delaware's Shad Fisheries," in *Delaware Conservationist* (Spring 1963): 14-15; and a series of articles in Delaware newspapers, especially *Wilmington Journal-Every Evening*, Aug. 30, 1947, and *Wilmington Evening Journal*, Jan. 25, 1927.

<sup>13</sup> No single comprehensive source for the history of sturgeon fishing on the Delaware exists, but a good overview of the industry can be gained from John N. Conn, "The Sturgeon Fishery of Delaware River and Bay," in U.S. Commission of Fish and Fisheries, *Report of the Commissioner for the United States Commission of Fish and Fisheries for 1899* (Washington, D.C.: Government Printing Office, 1899), pp. 369-80; John A. Ryder, "The Sturgeon and Sturgeon Industries of the Eastern Coast of the United States . . ." *Bulletin of the United States Commission of Fish and Fisheries for 1888* (Washington, D.C.: Government Printing Office, 1889), pp. 231-328; Price, Beck, Tweed, and Epifanio, "Fisheries," pp. 71-77; Horn, "Commercial Fishing Industry in Delaware," pp. 2-20; *Wilmington Every Evening*, Jan. 25, 1927.

when the price of caviar increased. The price of sturgeon eggs, or roe, jumped from 30 cents a pound in 1897 to \$3.50 1922.<sup>14</sup> Now female sturgeon became truly valuable. Sturgeon vessels and nets appeared on the Delaware to compete with shad ships. Sturgeon fishermen often worked from scows fitted out with two cabins, a large one for communal living and a small one for butchering the catch and preparing the roe. Others fished from sailing ships known as sturgeon skiffs, which were larger than shad skiffs. Sturgeon fishermen drifted long gill nets, often using fifteen small boats working as a team. The center of the sturgeon industry on the western side of the Delaware was from approximately twenty miles north to twenty miles south of Delaware City, while Penn's Grove and Bayside were important sturgeon centers on the eastern shore. Fishermen sold locally, nationally, and particularly internationally for caviar. As market demand increased, so did the number of fishermen and the size of the catch, leading to the beginning of the end of the sturgeon industry on the Delaware. The number of nets might increase, but the catch per net began a steady decline as early as 1888. High prices, however, sustained some level of commercial sturgeon fishing on the Delaware into the 1930s. Once again, "greed and pollution" got the blame for the industry's demise; but in the case of sturgeon, over-fishing through greed was believed to be the greater culprit.

#### **From the Fishing War of 1871 to the United States Supreme Court, Round 1**

Not all of those who worked in the fishing industries or in the governments of the states in which fisheries operated remained oblivious to the imperative of sustainability. Without regulation and protection of a natural resource, fishing could not survive at a commercial level. As early as 1871 the federal government created the United States

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<sup>14</sup> Price, Beck, Tweed, and Epifanio, "Fisheries," p. 75.



Commission of Fish and Fisheries to study why food fish in American waters were declining and how that decline could be turned around. From that commission came two major reports on the sturgeon industry of the Delaware River and Bay in 1888 and 1899.<sup>15</sup> At about the same time state governments with interests in the Delaware River and Bay began to enact legislation designed to protect the fishing interests of their citizens. New Jersey appointed Commissioners of Fisheries in 1870, and the following year Delaware's governor urged the legislature to appoint a study commission. The Delaware legislature subsequently approved the appointment of five fish commissioners in 1873.<sup>16</sup>

As commercial fishing became important at the beginning of the 1870s, both Delaware and New Jersey took an increasing interest in the Delaware River. Delaware Governor Gove Saulsbury included a section on fishing in his message of 1871 to the Delaware legislature concerning the conservation of the resource for the benefit of Delaware citizens.<sup>17</sup> "The laws of the state have not been adequate to the protection of

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<sup>15</sup> Ryder, "The Sturgeon and Sturgeon Industries of the Eastern Coast of the United States . . .," is a scientific study delineating the need to control over-fishing, protect habitat, and promote propagation; Conn, "The Sturgeon Fishery of the Delaware Bay and River" is a detailed history of the sturgeon industry to the end of the nineteenth century.

<sup>16</sup> *Revision of the Statutes of New Jersey, Published under the Authority of the Legislature* (Trenton: John L. Murphy, 1877), 425 [This law, passed in 1870 and amended in 1873 and 1874, was entitled "An act for the appointment of commissioners for the better protection of fishing interests of the state of New Jersey"]; Gove Saulsbury, Governor's Message of Jan. 3, 1871, in Delaware, *Journal of the Senate*, 1871, pp. 16-17; *Laws of Delaware*, vol. 14, chap. 419, sec. 2, p. 281.

The laws cited above were not the first passed by either state relating to fin fishing. At least as early as 1808, New Jersey enacted concurrent legislation with Pennsylvania to regulate fishing on the northern portion of the Delaware River. This legislation, supplemented many times, was in effect at the time the State of New Jersey created fish commissioners (*Revision of the Statutes . . .*, 1877, pp. 426-33). The State of Delaware passed its first regulatory fishing law in 1829, an act to regulate and tax gill nets, but promptly repealed it a year later. Another law adopted a decade later made it illegal for nonresidents to hunt, fish, or take oysters "from, in, or near the waters of the Delaware River and Bay" (*Laws of Delaware*, vol. 7, chap. 181, p. 372, and vol. 9, chap. 216, p. 263).

<sup>17</sup> Saulsbury, "Message of Jan. 3, 1871," p. 17.

our oyster beds, planting grounds, and fisheries from depredation by non-residents . . . .”

The legislature, he wrote, has a duty

to protect our inhabitants in the proximity to our rivers and streams, and the proprietors of the soil along our coasts, and all engaged in the business of fishing and culture of oysters, in all the rights which their location and business entitle them to, as it is to protect our fruit growers or the producers of any other of our staple crops.<sup>18</sup>

Governor Saulsbury’s concerns relating to fishing were nothing new in Delaware. The state’s first such law in the nineteenth century, passed in 1812, declared Delaware’s waters off-limits to non-Delawareans. While this law was concerned with oysters and terrapin, the legislature’s next protective effort, in 1839, prohibited all non-Delawareans from fishing and hunting in or near the “waters of the Delaware.”<sup>19</sup> Clearly Delaware’s lawmakers assumed ownership of the river, but equally clearly those laws lacked teeth, for funds were never allocated to enforce them.

New Jersey’s fish commissioners approached their mandate from a perspective very different from that of Governor Saulsbury. In 1871 they recommended legislation to regulate fishing by day, season, and mesh size of net. They also sought a tax on drift nets, which met immediate opposition from fishermen. All of the commissioners’ recommendations were passed by New Jersey’s legislature on March 15, 1871, with the exception of the tax on fishing nets.<sup>20</sup>

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<sup>18</sup> Ibid.

<sup>19</sup> *Delaware Laws*, vol. 9, chap. 216, pp. 263-65; *Delaware Laws*, vol. 4, chap. 209, pp. 568-69. In 1851, the legislature extended the law of 1839 to include all rivers and streams in addition to the Delaware River and Bay (*Delaware Laws*, vol. 10, chap. 569, pp. 564-65).

<sup>20</sup> *Laws of New Jersey*, Supplement to An Act to regulate the fisheries in the river Delaware, and for other purposes, Article 44, Mar. 15, 1871, p. 433.

New Jersey's legislators and fish commissioners approached fishing issues through the perspective of creating interstate agreements. The act was adopted as a supplement to legislation first passed in 1808 that had required the Commonwealth of Pennsylvania to pass an act of the same or similar wording before it took effect in New Jersey. Likewise, in 1871 New Jersey's fish commissioners sought Delaware's participation in creating a tri-state coalition on fishing laws. The commissioners, in fact, were most concerned with what New Jersey considered to be the southern portion of the Delaware River (that is the area of the river between the states of New Jersey and Delaware) because that area saw the most traffic in drift-net shad fishing. Thus, they sought, and received, permission from their governor to visit Delaware's legislators in Dover.<sup>21</sup> In some ways they counted their trip a success, for on March 28, 1871, the Delaware General Assembly passed an act that joined with New Jersey's law in regulating day, season, and mesh size of nets. But Delaware's legislators added a provision that addressed the issue raised by their governor. Section 1 of "An Act for the Protection of Fishermen" made it illegal for all non-Delaware residents to "catch or take fish of any kind in Delaware bay or river, or any of the creeks emptying into the same within the limits of the same" without a license. It would now cost non-Delawareans \$20 per annum for a license.<sup>22</sup>

Instead of creating harmony between and among the governments and fishermen of the states bordering the Delaware River, this fishing law emanating from Dover in 1871 unleashed a tidal wave of ill will and litigation that has pitted New Jersey against

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<sup>21</sup> *Third Annual Report of the Commissioners of Fisheries of the State of New Jersey, For the Year 1872* (Trenton: State Gazette, 1872), pp. 9-10.

<sup>22</sup> An Act for the Protection of Fishermen, *Delaware Laws*, vol. 14, chap. 72, pp. 84-87. A supplemental act in 1871 (vol. 14, chap. 73, p. 88) instituted a \$5.00 license fee for state residents.

Delaware for over 130 years, as the protection of fish and fishermen morphed into a full-scale, recurring judicial argument on state boundaries so reminiscent to Delawareans of the earlier, and seemingly endless, boundary dispute among William Penn, Lord Baltimore, and the English Crown.

Delaware's fishing law of 1871 sought to protect the state's own fishermen and fishing industry by oversight and control of all of the Delaware River that it had claimed since 1682, during the Duke of York-William Penn era—all of the water, and its soil below, to the low-water mark on the eastern side of the river within the twelve-mile circle from the town of New Castle. To Delawareans this boundary was beyond discussion. Indeed, it appears that the State of Delaware considered the twelve-mile circle to be such a given that it did not bother to codify it until 1852, in response to the Pea-Patch Island dispute in the 1840s.<sup>23</sup>

To non-Delaware fishermen using the Delaware River, the out-of-state licensing provision of Delaware's law of 1871 was offensive. No matter who claimed to own the river, fishermen had always taken equal access for granted. News did not travel as fast as it does today, but once people heard, they were anxious and confused. What would be the practical implications? The answer came in the spring of 1872 and was a straightforward application of the law, apparently initiated by Delaware's attorney general. On May 2, 1872, W.W. Pritchett, a constable in Wilmington, accompanied by an armed posse, took a steam tugboat to the eastern side of the Delaware River and arrested twenty-two New Jersey residents for fishing in the waters of the State of Delaware without

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<sup>23</sup> "Of Sovereignty, Jurisdiction and Limits," chap. 1, sec. 1, *Revised Statutes of Delaware*, 1852, pp. 2-3. For the Pea-Patch Island case, see Justice Cardozo's discussion of *In re Pea Patch Island*, 30 F. Cas. 1123 (Arb. Ct. 1848) (No. 18311). *State of New Jersey v. State of Delaware II*, 291 U.S. 361, 377, 54 S. Ct. 407, 412-13 (1934).

licenses. The men were taken, some at gun point, to the district attorney in Wilmington, along with their eleven rowboats and fishing nets. When the fishermen told the district attorney that they had always fished on the river and never had had to have a license, he told them of the new law and gave them a choice of buying licenses and paying court costs or forfeiting their boats and nets and going to jail to await trial. Reluctantly the men bought licenses.<sup>24</sup>

Reaction to those arrests was swift. Within a week, New Jersey's governor, Joel Parker, issued a proclamation asserting the State of New Jersey's right to the Delaware River from its own shore to the middle of the river and the right of New Jersey fishermen to fish in those water without having to get licenses from the State of Delaware. Governor Parker then warned "all persons" (meaning, of course, Delaware officials) not to arrest New Jersey fishermen in the disputed area and urged New Jersey citizens to resist violence.<sup>25</sup> Governor Parker next wrote a letter to Delaware's governor that both asserted New Jersey's territorial claim to the eastern half of the Delaware River and announced his proclamation of the previous day. New Jersey, he said, believed the question of state boundary claims required judicial resolution.

A few days later, Governor James Ponder of Delaware responded to Governor Parker with a strong assertion of Delaware's right to the river within the twelve-mile

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<sup>24</sup> Affidavits of John Q.A. Denny, George Stanton, and Job Barker, in Record, *New Jersey v. Delaware*, No. 1, (1877) (excerpt), reprinted in Documents submitted by the State of Delaware to U.S. Supreme Court in *New Jersey v. Delaware III* on Oct. 27, 2005, Lodging, tab 1:44-47.

<sup>25</sup> Joel Parker, governor of the State of New Jersey, to James Ponder, governor of the State of Delaware, Trenton, May 9, 1872, in *Report of the correspondence between Govs. Parker and Ponder . . .* (Trenton: State Gazette, 1873), p. 3; "A Proclamation by the Governor of New Jersey," May 8, 1872, reprinted in Record, *New Jersey v. Delaware*, No. 1, p. 25.

circle. It was, said Governor Ponder, "not . . . an open question."<sup>26</sup> From Delaware's perspective, the law of 1871 was not at all a territorial assertion; it was enacted "for the purpose of aiding the propagation of certain fish which were fast becoming extinct," a law passed "at the suggestion and request of the fish commissioners of New Jersey. . . ."<sup>27</sup> As to judicial review, Governor Ponder asked for a proposal from his counterpart because he (Ponder) did not have the constitutional power to agree to arbitration.

Governor Parker got the final word in this particular flurry of correspondence. On May 22, he sent a letter to Governor Ponder that again denied Delaware's boundary claim. His proposal for judicial review was to pass the question to his attorney general.<sup>28</sup> So, the first salvo of the Delaware River fishing war, which started with a drawn gun, ended in a barrage of words and legal maneuvering.

Later, Governor Parker, Governor Ponder, and the attorneys general of the two states met. After a "free interchange" of ideas, the officials of both states agreed that Delaware would make no arrests east of the middle of the Delaware River while both governors urged their respective state legislatures to appoint three commissioners to settle the question of river jurisdiction.<sup>29</sup> After some to-ing and fro-ing, both legislatures agreed.

Delaware went first. On January 30, 1873, the legislature adopted joint resolutions to establish the six-man commission recommended by the governor. The

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<sup>26</sup> James Ponder, governor of the State of Delaware, to Joel Parker, governor of the State of New Jersey, Dover, May 14, 1872, in *Report of the Correspondence between Govs. Parker and Ponder* . . . , p. 4.

<sup>27</sup> *Ibid.*

<sup>28</sup> *Ibid.*, pp. 5-8.

<sup>29</sup> Governor's Annual Address, July 14, 1873, New Jersey, *Senate Journal*, pp. 47-48.

legislature agreed that the decision of the commission was to be final. Two weeks later the legislature added supplementary joint resolutions that clarified their intent: Delaware would not submit the boundary question, but only the right, and the extent of that right, of citizens of New Jersey to fish in the Delaware River within the twelve-mile circle.<sup>30</sup> To up the ante, the Delaware General Assembly then passed a supplement to the "Act for the Protection of Fishermen of 1871" instituting a tax for nonresidents on nets greater than 300 fathoms.<sup>31</sup>

New Jersey's legislature soon followed Delaware's by passing an act to appoint three commissioners to a joint commission to "negotiate and agree respecting territorial limits and jurisdictions of the two states." When the legislature learned of the precise wording of Delaware's supplementary resolutions of February 14, it, in turn, modified its original legislation after receiving a message from Governor Parker. The governor reminded the legislators that "the important practical question which interests most of our citizens is the right of fishing in the river Delaware, its nature and extent . . . ."<sup>32</sup> By a supplement approved March 11, New Jersey's legislature agreed, for the sake of expediency, to negotiate on the narrow issue of fishing rights.<sup>33</sup> Delaware responded to New Jersey's apparent willingness to negotiate within Delaware's more narrow parameters with a major olive branch. In joint resolutions of April 8, 1873, the Delaware

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<sup>30</sup> Delaware, Legislature, Joint Resolutions, Jan. 30, 1873, Feb. 14, 1873, and Feb. 19, 1873, reprinted in Record, *New Jersey v. Delaware*, pp. 26-28.

<sup>31</sup> "A Supplement to the Act Entitled 'An Act for the Protection of Fishermen,' vol. 14, chap. 419, Feb. 19, 1873, in *Revised Statutes of the State of Delaware . . . to . . . 1874* (Wilmington: James and Webb, 1874), p. 281.

<sup>32</sup> Governor Joel Parker, Message to the Legislature, printed in New Jersey, *Journal of the Senate*, Mar. 5, 1873, p. 505.

<sup>33</sup> New Jersey, Legislature, Act of Feb. 26, 1873, and Supplement to Act, Mar. 11, 1873, reprinted in Record, *New Jersey v. Delaware III*, Lodging, tab 1, pp. 29-32.

legislature suspended the out-of-state fishing license section of the troublesome 1871 fishing protection act pending the outcome of the commission's negotiations. Moreover, if the commission decided favorably on Delaware's position, its state commissioners were authorized to agree to a mutual right of fishery.<sup>34</sup>

The new commission held meetings in the spring and summer of 1873. Delaware's three commissioners made several proposals to their counterparts from New Jersey, but since all of those proposals began with acceptance of Delaware's title to the river to the low-water mark on the eastern shore within the twelve-mile circle, the New Jersey commissioners declined to agree. The commission held three more unproductive meetings through June 1874. Then Delaware's commissioners presented their New Jersey counterparts with what in essence amounted to a closely argued legal brief, taking thirty-four pages to "prove" Delaware's title.<sup>35</sup> Eight months later Delaware's commissioners still had not received a response. Thus, they reported to their legislature that they did not believe the joint commission could ever come to a mutually agreeable settlement.<sup>36</sup>

In his message to Delaware's General Assembly in January 1877, Governor John P. Cochran reviewed the history of the joint commission. He said that the previous legislature of 1875 had construed New Jersey's long silence as "an implied abandonment of their case and a tacit relinquishment of their alleged claim of title and jurisdiction," so

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<sup>34</sup> Delaware Legislature, Joint Resolution, Apr. 8, 1873, reprinted in *Record, New Jersey v. Delaware*, 32-37.

<sup>35</sup> *The Fishery Question Argument of the Delaware Commissioners* (Wilmington: James & Webb, 1874).

<sup>36</sup> Report of the Fishery Commissioners, in Delaware, *Journal of the Senate*, Feb. 2, 1875, pp. 211-12.



on March 18, 1875, Delaware lawmakers disbanded the commission.<sup>37</sup> The Delaware legislators then reinstated the out-of-state fishing license requirement of the 1871 act. According to New Jersey's attorney general, New Jersey knew nothing about those actions until a New Jersey citizen called Governor Joseph D. Bedle's attention to a notice placed in the *Wilmington Morning Herald* on March 15, 1876, announcing the need for fishermen to again secure licenses from Delaware. The attorney general asserted that Delaware had misconstrued New Jersey's silence, for its commissioners were, in fact, still wrestling with the issues on the table.<sup>38</sup>

Territorial title remained an unresolved issue, but of greater concern to New Jersey's governor was the return of Delaware's fishing license law. Governor Bedle invited Governor Cochran of Delaware to a meeting in Philadelphia in hopes of winning a postponement of the law's reinstatement. At their meeting the governors could not resolve the issues, so the only recourse left to the State of New Jersey was to seek resolution by the United States Supreme Court. And so it did in March 1877.<sup>39</sup>

#### Efforts to Reach a Settlement

In preparation for litigation, Delaware's General Assembly adopted joint resolutions proclaiming the state's ownership of, and exclusive jurisdiction over, the twelve-mile circle across the Delaware River to the low water mark on the New Jersey

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<sup>37</sup> *First Biennial Message of His Excellency John P. Cochran, Governor of Delaware to the General Assembly, Session of 1877* (Wilmington, 1876 [sic]), p. 21; *Delaware Laws*, vol. 15, chap. 2249, pp. 254-55.

<sup>38</sup> Bill of Complaint, reprinted in Record, *New Jersey v. Delaware*, pp. 31-36. See also New Jersey, *Journal of the Senate*, Mar. 22, 1876, pp. 325-27 for letters of Governor Joseph D. Bedle and A. Browning for New Jersey Commissioners to governor of New Jersey.

<sup>39</sup> *First . . . Message of John P. Cochran . . .*, p. 22; *Laws of Delaware*, vol. 15, pt. 2, chap. 504, Jan. 26, 1877, pp. 641-42; *Third Annual Message of His Excellency Joseph D. Bedle, Governor of New Jersey to the legislature, Session of 1878*, Doc. No. 1 (Trenton, 1878), p. 23.

shore and authorizing the governor to employ counsel to defend the First State's position before the United States Supreme Court.<sup>40</sup> Governor John P. Cochran then appointed three of the state's most outstanding lawyers to represent the state in the suit. They were Thomas F. Bayard, George Gray, and George H. Bates. All were Democrats, then the majority party in Delaware. By 1885 only Bates, the son of a prominent Delaware jurist, Chancellor Daniel Moore Bates, and a former Speaker of the House of the Delaware legislature, was left. Bayard had gone on to become United States Secretary of State in Grover Cleveland's first administration, while Gray became a United States senator and then a federal judge. Preparation of the case was extremely time-consuming. Between 1901 and 1905, George Bates amassed piles of documents from the early colonial period. Some required translation; all had to be typed, edited for modern readers, and interpreted.<sup>41</sup>

In March 1877 the Supreme Court issued an injunction ordering Delaware to suspend the out-of-state license provision pending resolution of the litigation. The suit then languished for want of interest on the part of New Jersey, the complainant state, until the next fishing dispute arose. This time the source of the controversy lay south of the river, in the Delaware Bay. In 1885 Delaware authorities arrested and even jailed some fishermen in the upper Delaware Bay, confiscating their boats and nets.<sup>42</sup> Delaware argued that such arrests were permissible because the United States Supreme Court's injunction applied only to the contested portion of the Delaware River, that is, the area

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<sup>40</sup> *Laws of Delaware*, vol. 15, chap. 504, pp. 641-42.

<sup>41</sup> George H. Bates to Attorney General Robert H. Richards, March 8, 1909, Bates Family Collection (hereafter B.F.C.), Historical Society of Delaware, Wilmington, Del. (hereafter H.S.D.).

<sup>42</sup> *Report of the Commissioners of the Fisheries of New Jersey, 1884-85* (Trenton: John J. Murphy, 1886), pp. 5-6 (quotation, p. 5); *New York Times*, Aug. 13, 1885.

within the twelve-mile circle. But where did the river and bay divide? The governors of New Jersey and Delaware agreed that their respective attorneys general should meet to determine the boundary line. With the assistance of scholars and lawyers, Attorney General John H. Paynter of Delaware and Attorney General John P. Stockton of New Jersey set the dividing line between river and bay to run from Cohansey Light in New Jersey west to Bombay Hook Point in Delaware. Once that agreement was reached, Delaware agreed to drop its charges against the fishermen, whose boats and nets had already been returned. Delaware continued to insist upon its citizens' exclusive fishing rights in its half of the Delaware Bay, but for all practical purposes Delaware does not seem to have enforced that position. Attorney General Stockton urged another conference between the two states to secure mutual fishing rights in all the waters of the Delaware Bay. Such a conference never took place, most probably because it did not prove necessary. With the acquiescence of both states to the concept of mutual fishing rights in the waters of the river and bay, fishing continued unmolested.<sup>43</sup> As Governor Joel Parker had reminded the New Jersey legislature more than a decade earlier, "the important practical question . . . is the right of fishing in the Delaware . . ."<sup>44</sup> For the moment fishing rights were secure.

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<sup>43</sup> *Report of the Commissioners of Fisheries*, p. 6; *Annual Report of the Attorney General of the State of New Jersey, for the Year 1887*, pp. 19-21; *Final Report of the State Geologist*, vol. 1: *Topography, Magnetism, Climate* (Trenton: John J. Murphy, 1888), pp. 83-84; *New York Times*, Aug. 13, 1885.

<sup>44</sup> *New Jersey, Senate Journal*, 1873, p. 505.

## The Oyster Conflict Opens and Closes

Between 1871 and 1905, only once did an issue beyond fin fishing cause a ripple in the relationship of New Jersey and Delaware. The issue concerned oysters, and this time the aggressive assertion of legal rights came from New Jersey and not Delaware.

Oysters, like fin fish, had been an important part of the local diet since the time of the Native Americans, and they attracted as much attention from Western European explorers and settlers as did the Delaware River's shad and sturgeon. From earliest times, the governments of Delaware and New Jersey recognized the significance of this aqueous resource and passed laws to protect, preserve, and control an important food source and an increasingly valuable economic commodity. The main stimulus to commercial oystering in the Delaware Bay came in 1870 with the extension of the New Jersey Southern Railroad, a division of the New Jersey Central Railroad, to the Maurice River, a tributary of the Delaware Bay. With the railroad, the number of shucking houses increased, and New Jersey oysters could reach well beyond local and regional markets.<sup>45</sup>

Even without the railroad connection, New Jersey always had the advantage over Delaware because its oyster beds were larger than those of its neighbor to the west. Still, Delaware had significant oyster resources. Many families living along the Delaware Bay earned their livings from oystering. Delaware's oysters were most plentiful along the shores of Kent County from Leipsic to Bowers Beach, with the center at Port Mahon. With poorer train connections and smaller shucking houses, Delaware always lagged

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<sup>45</sup> Mary Emily Miller, "The Delaware Oyster Industry," *Delaware History*, 14(1971): 239-41; James B. Valle, "Harvesting Oysters," in *The Delaware Estuary: Rediscovering a Forgotten Resource*, eds. Tracey L. Bryant and Jonathan R. Pennock (Newark, Del.: University of Delaware Sea Grant Program, 1998), p. 26; Donald H. Rolfe, "Bivalve, New Jersey: 'Long Reach Remembered,'" in *The Delaware Estuary: Rediscovering a Forgotten Resource*, p. 82.

behind New Jersey in the scale of its oystering operations. Indeed, as time went on, Philadelphians came to dominate Delaware's oyster beds. Philadelphia entrepreneurs sent sailing ships equipped with two-to-four dredges into the Delaware Bay. The ships took their cargoes directly to Philadelphia for shucking and transport.<sup>46</sup>

Philadelphia ships also dredged for oysters in the eastern half of the Delaware Bay, which led to the first complaints about territorial claims to oyster areas. In 1871, the Commonwealth of Pennsylvania issued a report "in Reference to the Oyster fisheries in Delaware Bay" in response to a law passed by New Jersey's legislature earlier that year.<sup>47</sup> According to Pennsylvania, the three states of Pennsylvania, New Jersey, and Delaware had enjoyed common usage of oystering areas since the 1830s.

Then in 1871 the New Jersey legislature passed a law to require every boat working in New Jersey's waters to buy a license. The license was available only to individuals who had been residents of New Jersey for at least six months. The law added a sliding scale of license fees ranging from \$10 to \$60, depending upon the size of the oyster boat, as well as multiple enforcement provisions such as the appointment of a "special officer" who would have the power of arrest.

Not to be outdone, Delaware's legislature passed similarly restrictive laws that same year. The state closed its oyster beds to non-Delawareans or non-owners of Delaware plantation rights. Legislators also added a licensing fee on boats dredging in public beds that was three times that charged by New Jersey. Finally came the

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<sup>46</sup> Valle, "Harvesting Oysters," p. 26; Weslager and Heite, "History," p. 25; Mary Emily Miller, "The Delaware Oyster Industry: Past and Present" (Ph.D. diss., Boston University, 1962), pp. 142-44.

<sup>47</sup> Miller, "The Oyster Industry: Past and Present," pp. 133-34. The New Jersey law was entitled "An Act for the better enforcement in Maurice River cove and Delaware Bay of the act entitled 'An Act for the preservation of clams and oysters . . .'" (New Jersey P.L., 1871, p. 642). The original law was enacted on April 14, 1846.

enforcement provisions, which included a collector with arrest powers and the purchase of a watchboat.<sup>48</sup>

Aside from angering some in Pennsylvania, few jurisdictional problems appear to have arisen from the oystering legislation emanating from Trenton and Dover. One scholar noted no significant friction arising from the laws passed on both sides of the river. He found that for Delaware, the major result of the residency requirement was that members of New Jersey oystering families moved to Delaware to expand their operations, a migration that perhaps worked both ways.<sup>49</sup> In the last quarter of the nineteenth century, Delaware's oystermen voiced concern primarily about individuals who illegally dredged for oysters, "marauders" primarily from Pennsylvania. Eventually the conflict escalated to a level of combat and bloodshed. "Oyster pirates," as they came to be called, armed their boats with cannon and were able to overwhelm Delaware's watchboat and small, legal oyster boats.<sup>50</sup>

In 1887, Delaware's legislature passed a law that expanded the state's claim to oyster beds in the Delaware Bay. Until that time Delaware legislators had not asserted jurisdiction east of Blake's Channel.<sup>51</sup> Now they extended Delaware's jurisdictional claim to the oyster bed at Ship John Light. New Jersey responded by arresting two Delaware oystermen working in the Ship John bed. Prosecution was dropped when the

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<sup>48</sup> *Laws of Delaware*, vol. 14, chaps. 9-14, pp. 11-25. Oyster plantations, according to Delaware's 1871 legislation, were available in one area located south of Reedy Island and west of Blake's Channel. Private citizens could obtain a plantation for the planting of oysters for an annual fee plus a boat license.

<sup>49</sup> Valle, "Harvesting Oysters," p. 26.

<sup>50</sup> Miller, "The Delaware Oyster Industry: Past and Present," pp. 137-40; Miller, "The Delaware Oyster Industry," 245-46.

<sup>51</sup> *Laws of Delaware*, vol. 18, pt. 1, chap. 248, p. 464.

State of Delaware agreed to a settlement through negotiation, which must have included a repeal of the law.<sup>52</sup> No attorney general files exist in the Delaware Public Archives for this period, but, according to the New Jersey attorney general's statement in his brief to the United States Supreme Court in 1933, calm was returned. Under those circumstances, it does not seem surprising that the question of oysters did not loom large in the Compact of 1905. Over time each state had enacted, amended, repealed, and rewritten dozens of acts to promote, protect, and regulate oystering. Each side had vested interests, which at the time of the writing of the Compact of 1905 were satisfied by the status quo.<sup>53</sup>

#### Construction into the River

Although Delaware consistently laid claim to the waters and subaqueous soils to low water on the New Jersey shore within the twelve-mile circle, the wharves, piers, and bulkheads along the New Jersey shore were never part of the debate in the nineteenth century. Delaware neither interfered with their construction, nor did it tax such structures on either side of the river.

Delaware and New Jersey pursued different policies regarding wharfage. New Jersey established extensive controls, but Delaware did not. Urbanization was the major

<sup>52</sup> Brief of Plaintiff, reprinted in Documents submitted by the State of Delaware to U.S. Supreme Court in *New Jersey v. Delaware III* on Oct. 27, 2005, Lodging, tab. 10, p. 373; *Laws of Delaware*, vol. 18, pt. 1, chap. 557, p. 679.

<sup>53</sup> The Delaware legislature created an oyster commission in 1909, and with the U.S. Bureau of Fisheries produced a report and a map entitled "Chart of Leased Oyster Bottoms, Delaware Bay, State of Delaware" that showed no Delaware oyster beds east of the Delaware Bay's main shipping channel (Delaware Oyster Survey Commission, *Report of Commission* [Baltimore: King Bros., n.d.]. Twenty years later, the situation had changed dramatically, with the Ship John oyster bed as the flash point. Wilmington's *Every Evening* subsequently termed it an "armed fight" between New Jersey and Delaware oystermen over rights to the beds from the ship channel to the middle of the bay (Oct. 9, 1933). By 1929 oysters had become one of the two issues of sufficient magnitude to New Jersey to lead that state to return to the U.S. Supreme Court. The other issue was wharfage. ("Report to Honorable Morgan F. Larson, Governor of New Jersey by William A. Stevens, Attorney General . . ." 1929).

factor in explaining those differences. New Jersey had the major port cities of New York and Philadelphia opposite its watery borders, whereas Delaware had none. In 1851 New Jersey began taking control over its riparian lands by requiring that land owners obtain licenses from the state to build structures into New Jersey's waterways.<sup>54</sup> In 1864 the New Jersey legislature adopted "An Act to ascertain the rights of the state and of the riparian owners in the lands lying under the water of the bay of New York and elsewhere in the state."<sup>55</sup> It was the first of a series of laws, all of which traced their origins to the 1864 statute, by which New Jersey governed, sold, leased, and taxed submerged lands. The 1864 law explicitly focused on two urban areas: the waters along the Hudson River and New York Bay, and "the lands lying under the water of the Delaware river, opposite to the county of Philadelphia." Neither that law, nor those that followed, mentioned those parts of the Delaware River lying north or south of Philadelphia.

It is not surprising that New Jersey lawmakers concentrated their riparian laws on those parts of their state's waterways that were in contact with the major out-of-state commercial and industrial centers of New York City and Philadelphia. Those were the places where wharfage was most important and most lucrative. In 1871 New Jersey began the practice of committing the taxes it raised from those urban-area wharves to help support the state's public schools.<sup>56</sup>

By contrast, Delaware had no major urban centers lying across its portion of the Delaware River's eastern shore to prod it into licensing, controlling, or taxing wharves.

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<sup>54</sup> New Jersey P.L., 1851, p. 335.

<sup>55</sup> New Jersey P.L., 1864, p. 681.

<sup>56</sup> New Jersey P.L., 1871, p. 98.



A search of the state's laws in the nineteenth century reveals a few acts whereby the legislature gave steamboat and railroad companies permission to build wharves as part of the powers granted to them in their acts of incorporation.<sup>57</sup> In addition, in the 1850s a few individuals requested private acts whereby the legislature concurred in their construction of wharves, but, in the absence of a legal requirement to get advance approval from Delaware, such requests soon disappeared from Delaware law books.<sup>58</sup> The state did not tax wharves that extended into the state's waters, nor did it require a state license to erect them.

The State of Delaware has never taxed real estate. Its counties tax real estate. Until the mid-twentieth century all three of Delaware's county governments were called "Levy Courts" because they set the levies on taxable real estate. A search in the Delaware Public Archives found no records from the nineteenth century to show whether or not the assessors from New Castle County, the county that includes the twelve-mile circle, included wharves extending from either the western or eastern shore of the Delaware River in their assessment of real estate. Theirs was a rather unsophisticated operation designed to raise the modest sums needed to support the county jail and a poor house, and to build bridges across creeks. It is not surprising that the assessors never ventured across the Delaware River to claim taxes from wharf-owners on the eastern shore.

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<sup>57</sup> See, for example, *Laws of Delaware*, vol. 9, chap. 11, "An Act to Incorporate the Delaware Rail Road Company, pp. 17-26, and chap. 312, "An Act to Incorporate the Breakwater, Lewes, and Philadelphia Steam-boat Company," pp. 359-62.

<sup>58</sup> *Laws of Delaware*, vol. 11, chap. 463, p.528; chap. 398, p. 444.

The most important wharves extending from the New Jersey side of the Delaware River within the twelve-mile circle were associated with Delaware-based companies. Throughout most of the nineteenth century and well into the twentieth century, the Wilmington Steamboat Company, later called the Wilson Line, ran boats from Wilmington to Chester and Philadelphia, Pennsylvania. In the summer months the company also ran excursion boats from the west bank cities to a picnic grove at Penns Grove, New Jersey. In the 1920s an amusement park called Riverview Beach was added on the New Jersey shore of the river. Likewise, Delaware-owned ferry companies operated between Delaware and New Jersey until the Delaware Memorial Bridge opened in 1951.<sup>59</sup> The only industrial site with structures extending into the river from the New Jersey side within the twelve-mile circle was the Du Pont Company's Chambers Works. The Du Pont Company was, then as now, a Wilmington-based corporation.

#### **Seeking a Settlement**

The repeated postponements of *New Jersey v. Delaware I* stopped in 1901 when the Supreme Court's clerk alerted the parties that the Justices would wait no longer. Delaware had to decide to go forward or risk losing its boundary claim to the New Jersey shore. Neither Delaware's governor nor legislature hesitated to continue to press for vindication of the state's boundary rights. The legislature adopted a resolution whereby the attorney general and special counsel were "instructed to maintain the defense of said suit."<sup>60</sup> George Bates stopped all other business to concentrate on meeting the deadline to file an answer to New Jersey's Bill of Complaint.<sup>61</sup>

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<sup>59</sup> See Richard V. Elliott, *The Saga of the Wilson Line, Last of the Steamboats* (Cambridge, Md.: Tidewater Publishers, 1970).

<sup>60</sup> *Laws of Delaware*, vol. 22, chap. 244, p. 531.

The work of meeting Supreme Court deadlines proved so onerous to both sides that in 1903 they agreed to appoint the two states' governors, attorneys general, and counsels as their commissioners in an attempt to find a settlement without recourse to further court proceedings. Whereas Delawareans had no experience with interstate compacts, New Jersey's leaders could look back to a great deal of such experience. The Garden State already had compacts with both New York and Pennsylvania regarding those states' respective contiguous watery boundaries: the New York harbor and the Delaware River, respectively. Those documents provided for boundaries through the middle of those waters and explicitly noted which state owned every island in between. Each state had jurisdiction over the area within its own boundary, except that authorities on either side of the waterway were permitted to cross those bounds to pursue, arrest, and remove back to their own state persons accused of committing crimes in the arresting officer's state.<sup>62</sup> Thus New Jersey had a template for what might constitute an interstate compact.

The Delawareans had no such experience, but George H. Bates was a seasoned negotiator who had dealt with obstinate opponents in delicate diplomatic situations. In 1885 Bates had gone to the Samoan Islands as the special agent of the United States government to help re-establish peace among warring chiefs who were being urged on by the competing governments of Imperial Germany and Great Britain. The United States also had significant commercial and naval interests in the Samoan Islands. Bates was

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<sup>61</sup> Attorney General Herbert H. Ward to Governor John Hunn, Jan. 31, 1903, Delaware Public Archives, Dover (hereafter D.P.A.).

<sup>62</sup> New York Compact: N.J. Stat. sec. 52:28 *et. seq.*; Pennsylvania Compact: N.J. Stat. sec. 52:18-23 *et. seq.*

later one of three commissioners to represent the United States government at conferences with the Germans and British held in Washington, D.C., in 1887 and in Berlin in 1889 for the purpose of restoring peace in Samoa. Bates proved to be a vigorous negotiator on behalf of his country in dealing with such seasoned diplomats as Chancellor Otto von Bismarck of Germany. The representatives of the three powers all claimed to want a restoration of the *status quo*, whereby citizens of their countries could live and trade in the islands without fear that one of the other powers would stir up trouble. Bates's experience was thus appropriately germane to the business of negotiating on behalf of Delaware over the ownership and use of the Delaware River.<sup>63</sup>

Delaware's commissioners began their work by seeking the views of the people most concerned about the dispute: the state's fishermen. Those commercial fishermen, together with their New Jersey counterparts, constituted a major industry that employed 165 boats, each of which reportedly took in \$550 weekly during shad season. In early March 1903, Delaware's commissioners, including George Bates, organized a meeting with Delaware fishermen in the coastal town of Delaware City. The meeting proved to be very instructive. One fisherman complained of his arrest by New Jersey authorities when he had been fishing for sturgeon near the Jersey shore. Most fishermen agreed, however, that although the river within the circle rightfully belonged to Delaware, New Jerseymen should be permitted to cast their nets wherever they pleased so long as they abided by Delaware's Sabbath and seasonal restrictions.<sup>64</sup>

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<sup>63</sup> George Handy Bates Samoan Papers, University of Delaware Special Collections, Newark, Del. See particularly box 1, folder 13; box 2, folder 21; and box 3, folders 28-28.

<sup>64</sup> *Wilmington Evening Journal*, Mar. 4, 1903.

In light of such "live and let live" testimony from the fishermen, and considering the additional cost and effort of continuing the suit, the commissioners attempted to conclude a compact that would unify the states' conflicting fishing laws and thus end the case. As Delaware's Attorney General Herbert H. Ward put it to Governor John Hunn, "if the entire controversy between the two states can be settled out of court, it would seem the part of good reason to attempt to make such a settlement."<sup>65</sup>

The commission composed of the governors, attorneys general, and counsels of the two states, met in Philadelphia on March 12, 1903. The evidence is very scant, but it would appear that both sides came with ideas and language that they would like to see written into the compact. It is worth noting, for example, that Articles I and II, permitting each state to serve legal papers or make arrests on the entire breadth of the river, contain principles similar to New Jersey's compacts with New York and Pennsylvania.

The proposed document created in 1903 was designed to resolve the fishing issue, as detailed in Articles III, IV, and V, which proclaimed a common right of fishery, provided for the passage of uniform fishing laws in both states, and permitted the continuance of certain existing laws until adoption of the uniform legislation. The document also permitted the states to continue enforcing their laws with respect to two matters that had not been the subject of longstanding controversy: the oyster industry and the building of piers and wharves. But for the dispute in 1887, which had been resolved, the oyster industry had not been the cause of controversy between the states. In drafting the compact in 1903, Article VI was written to maintain the *status quo* of that industry. Likewise, with respect to Article VII, there was no evidence of a practical dispute with

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<sup>65</sup> Ward to Hunn, Jan. 31, 1903, D.P.A.

regard to the construction of piers and wharves extending from the New Jersey shore that entered onto the portion of the Delaware River within Delaware's twelve-mile circle. At that time the modest piers on the New Jersey shore that entered into the twelve-mile circle served the interests of citizens of both states.

Article VIII of the 1903 compact stated that nothing would affect the "territorial limits, rights or jurisdiction of either state" relating to the river or the ownership of its subaqueous soil except as "expressly set forth" in the document. Through this provision, the states sidestepped the dispute over ownership within the twelve-mile circle, as to which the two states could never have reached agreement, and similarly deferred other jurisdictional questions that did not require resolution at the time. Each state preserved its claims in Article IX, which stated that the lawsuit was to be dismissed "without prejudice."

The effort to forge an interstate agreement proved fruitless, however, because the Delaware General Assembly ended its session too soon to take up the proposed compact.<sup>66</sup> The suit would go on, at least until 1905, when Delaware's legislators were next scheduled to meet.

The lawyers on both sides had no recourse but to carry on their preparations for the fast-approaching deadline to submit their briefs to the Supreme Court's Special Commissioner, Francis Rawle. Francis Rawle (1846-1930) knew George Bates very well. In 1895, at Rawle's request, Bates drafted a law regarding street railways that was adopted by the Delaware General Assembly. That same year, George Bates's son, Theodore, became a law clerk in Rawle's Philadelphia office. When Theodore

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<sup>66</sup> Attorney General Herbert H. Ward to George H. Bates, Feb. 11, 1905, B.F.C., H.S.D.

committed suicide later that year, his father assumed responsibility for completing work that Rawle had assigned to his son.<sup>67</sup>

In developing his case Bates called several of Delaware's most distinguished elderly lawyers to appear at a hearing held in Salem, New Jersey. Those men all testified that going back as far as the 1840s, Delaware had exercised the right to arrest and try violators of Delaware state laws on the river, and that federal cases drawn from the river territory had been heard in the Federal District Court for Delaware.<sup>68</sup>

By the end of 1904 Bates's quest for evidence was nearly complete. The most pressing claim on his time was to organize the mass of historical documents he had collected. The clerk of the U.S. Supreme Court agreed to one final extension, to March 1, 1905, by which time the defense must present its evidence. New Jersey would then have until June 1, 1905, for rebuttal, and both parties were to have their arguments in the hands of Special Master Rawle by November 1, 1905.<sup>69</sup>

#### **Adopting the Compact of 1905**

It was in this context that Delaware's General Assembly met in Dover for its biennial session in January 1905. In his final month as governor, John Hunn told the assemblymen of his hope to end the long-smoldering case with New Jersey through "the appointment of a commission with full powers to settle the issue by arbitration." The "continuance of this suit," he said, "has been, and is likely to be, an extremely costly one

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<sup>67</sup> See various letters in B.F.C., H.S.D., especially Francis Rawle to George Bates, Jan. 31, 1895; George Bates to F. Rawle, Feb. 14, 1895; Theodore Bates to F. Rawle, Jun. 1895; Elizabeth Bates to George Bates, Dec. 4, 1896.

<sup>68</sup> The State of Delaware had made it illegal for nonresidents to fish in Delaware waters in 1839 (*Laws of Delaware*, vol. 9, chap. 216, p. 263).

<sup>69</sup> James H. McKenney, Esq., Clerk, U.S. Supreme Court, to George H. Bates, n.d., B.F.C., H.S.D.

for the State, thousands of dollars having already been expended in its prosecution." He told the legislators that his recent communications with New Jersey officials convinced him that they, too, were willing to pursue "an amicable arrangement for a settlement" outside the judicial system. It is worth noting that the interconnection of reaching an "amicable settlement" with that of saving a large sum of the state's money must have been particularly appealing to a governor who was both a Quaker and a businessman.<sup>70</sup> Later that same month Governor Hunn sent a message to the legislature drawing their attention to the chaotic nature of the state's fishing laws. He admonished them that rationalizing the fishing laws "demands primary consideration in as much as it concerns the propagation and protection of one of the largest sources of food supply belonging to the people." He recommended the creation of a commission charged to draft "a uniform, reasonable, comprehensive, and plain bill" to be presented to the next meeting of the legislature in 1907.<sup>71</sup>

Delaware's outgoing attorney general, Herbert H. Ward, and his successor, Robert H. Richards, were in complete agreement with Governor Hunn regarding both the desirability of an interstate compact and the need to redraft Delaware's fishing laws. In February 1905 Ward notified George Bates that the Delaware General Assembly had adopted a joint resolution "of precisely similar terms to that of two years ago, with the addition of the words 'and bay.'"<sup>72</sup> The commissioners appointed to serve were to be Delaware's new governor, Preston Lea, a Republican and Quaker businessman like his predecessor, together with Ward himself, his successor as attorney general, Robert H.

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<sup>70</sup> Delaware, *Journal of the Senate*, 1905, p. 93.

<sup>71</sup> *Ibid.*, pp. 91-92.

<sup>72</sup> Herbert H. Ward to George H. Bates, Feb. 11, 1905, B.F.C., H.S.D.



Richards, and George Bates. The New Jersey legislature having passed a similar measure earlier that same week, the commissioners could begin their work promptly so as to complete their compact in time for the Delaware General Assembly to act on it before it adjourned.

Once again commissioners from the two states met in Philadelphia, where they made the minor adjustments to the two-year-old compact document noted above. The first difference was changing the term "Delaware River" to "Delaware River and Bay" in passages concerning the regulation of fishing in Article IV. The Compact of 1905 also added a provision whereby the states were to determine the dividing line between the river and bay and then mark that division with monuments on both shores.<sup>73</sup>

All was not the same, however. In the two years since he had been a member of the commission of 1903, George Bates had changed his mind about the idea of substituting a compact for a ruling by the United States Supreme Court. He had prepared what he regarded as an unimpeachable case in support of Delaware's title and was ready to present the First State's arguments to Special Master Rawle. Why then should Delaware agree to put aside the case before the United States Supreme Court?

Disagreements among Delaware's commissioners over the efficacy of adopting a compact in lieu of continuing the state's defense before the Supreme Court became public knowledge through the pages of the *Wilmington Every Evening*. The *Every Evening* was aligned with George Bates and his political party, the Democrats. Interestingly, Wilmington's leading Republican daily, the *Morning News*, largely ignored the compact issue.

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<sup>73</sup> Delaware, *Journal of the Senate*, 1903, pp. 898-902; *Laws of Delaware*, vol. 23, chap. 5, pp. 12-17.

On March 2, 1905, the compact went to the Delaware Senate, where it was ratified by a unanimous vote without debate.<sup>74</sup> In the days that followed, the *Every Evening* published a daily barrage of editorials, articles, and letters to the editor hostile to the boundary compact. "Shall We Surrender All That We Have Contended For In The New Jersey Boundary Dispute?" the paper asked on the front page of the March 6 edition. The article that followed mirrored Bates's view that "no agreement should be made until the Supreme Court has judicially decided the underlying and basic question of territorial jurisdiction." The writer was not against establishing a fishing compact with New Jersey but thought that the compact should follow a ruling by the Supreme Court rather than serve as its substitute. The article also noted that some Delaware fishermen had been arrested and fined by New Jersey authorities, yet nothing in the compact provided for their reimbursement. "Shall we surrender . . . on the threshold of success?"<sup>75</sup>

The *Every Evening's* aggressive journalism drew a prompt response from Herbert Ward. The former state attorney general sent a letter to the editor that appeared just two days later. Ward wrote that the case had sprung from Delaware's "unwise legislation" in 1871. He contended that the proposed compact dealt solely with fishing rights and did nothing to affect Delaware's title to waters or soil within the twelve-mile circle.<sup>76</sup>

The next day's edition featured a letter from Alexander B. Cooper, a Democratic lawyer from New Castle. Cooper had made a close study of Delaware's historic

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<sup>74</sup> Delaware, *Journal of the Senate*, 1905, p. 335.

<sup>75</sup> Wilmington *Every Evening*, Mar. 6, 1905.

<sup>76</sup> *Ibid.*, Mar. 8, 1905.

boundaries that had convinced him that the colonial records supported Delaware's claim to the low water mark on the New Jersey shore within the twelve-mile circle. According to Cooper, the compact's language merely postponed an inevitable showdown before the United States Supreme Court over the First State's eastern boundary. Cooper also challenged the compact's supporters sanguine expectation that by endorsing the agreement Delaware could let New Jersey bear some of the cost of policing the river. Allowing authorities from both shores to arrest people on the river was certain to cause confusion, Cooper said. He ended with a grandiloquent flourish: "It is not a question of expense; it is a question of principle—the title to our lands, both under and above the water."<sup>77</sup> Cooper, like Bates, believed so firmly in the strength of the Delaware claim that he rejected the less expensive expedient of a compact with the uncertainty that might bring.

Not surprisingly, two days later Herbert Ward responded to Alexander Cooper's arguments. Ward recalled that as attorney general he had presented the almost identical compact to Delaware's House of Representatives two years before. He had then told the legislators that he was willing to continue to fight the case before the Supreme Court if that was what they wanted him to do, "but that my own judgment strongly favored the adoption of the compact . . . and thus avoiding the expense." Had the legislature taken his advice and acted at that time, Delaware could have saved substantial legal fees.<sup>78</sup> Whereas George Bates was eager to present his evidence in support of Delaware's title before the United States Supreme Court, Herbert Ward, who believed that the compact

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<sup>77</sup> *Ibid.*, Mar. 9, 1905.

<sup>78</sup> *Ibid.*, Mar. 11, 1905.

did nothing to undermine Delaware's title, was determined to save the state the expense of further litigation.

Because of the public disagreements over the wisdom of ratifying the compact, the Delaware House of Representatives set aside an afternoon to hear all sides of the issue before the vote was scheduled. Perhaps because the event provided a venue for the compact's defenders to speak publicly, the Republican *Wilmington Morning News* covered the hearing in much greater detail than did the *Every Evening*.

At the hearing Alexander Cooper and George Bates urged the legislators to reject the compact while Attorney General Robert Richards and former attorney general Herbert Ward argued for its ratification. The compact's defenders said that the agreement would provide "an amicable solution to the problem without surrendering Delaware's rights or title to territory within the famous Twelve-mile Circle." Speakers on both sides of the issue agreed that continuing the suit before the Supreme Court was likely to cost the state between \$15,000 and \$20,000.

Herbert Ward and Robert Richards repeatedly assured members of the House of Representatives that ratification of the compact would not impact Delaware's clear title to the Delaware River within the twelve-mile circle. Ward explained that under the compact New Jersey would no longer be able to arrest Delaware fishermen. If a Delaware fisherman broke the law, he would be arrested and tried by Delawareans, in Delaware, the former attorney general said. In response to a question, Ward responded "that Delaware would have jurisdiction in criminal matters over the entire river to the New Jersey shore."

Placed on the defensive, George Bates stated his belief that the compact that he had participated in writing and had championed two years before was "unwise and a useless and serious blow to the dignity of Delaware." These words drew an equally patriotic declaration from Attorney General Richards, who professed to be second to none in his willingness to uphold Delaware's honor. But the state's honor was not the issue. Speaking for himself and his predecessor, Herbert Ward, Richards told the legislators, "we do advise you that we consider it is for the best interests of the state to adopt this compact without yielding a foot of property or title." He also reminded the House members that should they reject the compact he would be coming back to them to ask that they appropriate at least \$10,000 to continue the suit.<sup>79</sup>

In all the news reports about the drafting and adoption of the compact, there is no record of any debate about the provisions of Articles VI and VII concerning regulation of the oyster and other shellfish industry or riparian rights. Issues concerning the oyster industry appeared to be settled, and riparian issues presented no problems since at that time Delaware did not regulate or tax structures built into the Delaware River on either side of the river.

Three days after the hearing the House ratified the compact with New Jersey by the close vote of seventeen to fourteen. Almost to a man, the Republicans voted "yea" while the Democrats voted "nay."<sup>80</sup>

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<sup>79</sup> *Wilmington Morning News*, Mar. 15, 1905.

<sup>80</sup> *Delaware, Journal of the House of Representatives*, 1905, p. 783.

### **The Compact in the Context of its Time**

The compact never rose to the prominence in Delaware politics that one might have assumed from the articles that appeared in the *Wilmington Every Evening* or from the partisan nature of the vote in the House of Representatives. Other issues were riveting the attention of politically-minded Delawareans. In March 1905 all eyes focused on efforts to rescind Delaware's infamous Voter Assistance Law. That law had a curious history that explains a good deal about the state's politics during the first decade of the twentieth century.

Delaware had been a border state during the Civil War: that is, it was a slave state that remained loyal to the Union. In the post-war years the Democrats were the major party in Delaware, although the Republican Party was strong among businessmen, especially in Wilmington. In 1889, after years in the minority, a split among the Democrats allowed the Republicans to claim control of the General Assembly.

The GOP triumph meant that Republican legislators could choose Delaware's next United States senator. Party stalwarts were astonished when a man who was a complete unknown in state politics appeared in Dover and announced that he must be the Republicans' choice. The man was John Edward O'Sullivan Addicks, a Philadelphia-based owner of municipal gas works, who was known as the "Napoleon of Gas." To claim citizenship in Delaware, Addicks bought a house in Claymont, the state's northernmost town.

In his quest for a seat in the United States Senate, Addicks proved to be rich, unscrupulous, and persistent. When persuasion failed in 1889, he resorted to spending large sums of money to elect Republican legislators who would be beholden to him,

particularly in rural parts of the state where the Democrats had been dominant. Delaware's Voter Assistance Law allowed Addicks's lieutenants to enter the voting booth with voters and thus make sure that Addicks got the votes he had paid for.

The Addicks phenomenon helped make the Republicans Delaware's major party, but it also split the party into two fiercely rival groups. To the acute frustration of all, in legislative session after session neither side had the votes to elect its candidate for the United States Senate seat. In 1903 the factions finally worked out a compromise that allowed one of Addicks's followers to be elected, but this did not satisfy the gas king.

In 1905 Addicks made what proved to be his final attempt to secure election. Once more he failed, and thereafter, his money exhausted, he dropped from the political scene, setting the stage for the emergence of the du Pont family as the major force in Delaware's Republican politics.

In 1905 amid cries denouncing corruption and "wholesale bribery" or shouting "Addicks or nobody" it was hard to concentrate legislators' attention on a mere fishing compact.<sup>81</sup> Yet, as the Assembly was riveted on those more compelling political concerns, it did find time on March 23, 1905, to appoint commissioners to confer with their counterparts in New Jersey regarding the two transcendent issues in the compact: drafting uniform fishing laws and delineating the boundary between the Delaware River and the Delaware Bay. Among Delaware's three commissioners was Alexander B.

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<sup>81</sup> Carol E. Hoffecker, *Democracy in Delaware: The Story of the First State's General Assembly* (Wilmington: Cedar Tree Books, 2004), pp. 120-25, 138-39.

Cooper, who became president of the "Delaware Commissioners, (Delaware-New Jersey Fisheries Compact)," as the commission's letterhead read.<sup>82</sup>

At the initial meeting of the joint commission held in Philadelphia on December 15, 1905, the six commissioners unanimously agreed to a resolution requesting their respective governors to seek a delay in Congressional ratification of the compact "until the Commission shall make further request."<sup>83</sup> The governors of both New Jersey and Delaware agreed to the commissioners' request.<sup>84</sup> But the postponement created new problems because of the constraints of the various state and national governmental bodies dealing with both the lawsuit and the compact. Two governors, two state legislatures, the United States Congress, and the United States Supreme Court all operated on differing schedules and with different time limitations.

Those time constraints, coupled with the large number of participants, sometimes led to miscommunications and hard feelings. For example, on March 14, 1906, Walter Hayes, secretary of the Delaware commissioners, sent Hiram R. Burton, Delaware's Congressman, a copy of the joint commissioners' resolution of December 15, 1905, asking for Congressional delay in ratification of the compact. Delaware's Attorney General Richards had also written to Burton to request such a delay.<sup>85</sup> Just a day earlier,

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<sup>82</sup> *Laws of Delaware*, vol. 23, pt. 1, chap. 6, pp. 17-20. See various correspondence using the letterhead, such as Alexander B. Cooper to Walter H. Hayes, Esq., January 29, 1907.

<sup>83</sup> Minutes of Meeting, Dec. 15, 1905, Delaware Commissioners, Delaware-New Jersey Fisheries Compact, Minute Book, 1905-1908, D.P.A.

<sup>84</sup> E.C. Stokes to H.C. Loudenslager, Mar. 14, 1906, New Jersey State Archives, Trenton, N.J. (hereafter N.J.S.A.)

<sup>85</sup> Walter H. Hayes to Hiram Burton, Mar. 14, 1906, Delaware Commissioners, Delaware-New Jersey Fisheries Compact, Letter Book, 1905-1908, D.P.A.; [Robert H. Richards] to Hiram R. Burton, Jan. 19, 1907, National Archives, Washington, D.C. (hereafter N.A.) There is no signature, but attribution is confirmed by internal dating, content, and style of letter.



however, it appears that at least some New Jersey leaders were so eager to secure ratification that they had encouraged Senator John Kean to rush the compact bill through the United States Senate without even informing his Delaware colleague of his action.<sup>86</sup> This apparent cross-purpose of activity led to telegrams between commissioners and their Congressmen. Delaware's commissioners alleged "bad faith" on the part of New Jersey. Congressman H.C. Loudenslager sought clarification from Trenton.<sup>87</sup> William J. Bradley, one of New Jersey's fish commissioners and head of the New Jersey Senate, wrote to his Delaware counterpart on the joint fishing commission that he believed that Kean's action was due to "some misunderstanding."<sup>88</sup>

Meanwhile, the work of the joint fishing commission went forward. Commissioners on both sides of the river held public meetings in the spring of 1906 to solicit the opinions of the states' fishermen about what the fishing regulations should contain. They found the views of the fishermen of the two states to be quite "harmonious."<sup>89</sup> At a meeting of the joint commission on October 10, 1906, the Delaware commissioners were first to present their version of an appropriate uniform fishing law.<sup>90</sup> New Jersey acted more slowly to draft a proposal, too slowly from the perspective of the Delaware commissioners, whose legislature was scheduled to meet in

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<sup>86</sup> Because of the Addicks dispute, Delaware had but one elected U.S. senator in 1907.

<sup>87</sup> Telegram, H.C. Loudenslager to E.C. Stokes, Mar. 14, 1906, N.J.S.A.

<sup>88</sup> William J. Bradley to Alexander B. Cooper, Mar. 19, 1906, D.P.A.

<sup>89</sup> Minutes of Meeting, May 8, 1906, Delaware Commissioners, Delaware-New Jersey Fisheries Compact, Minute Book, D.P.A.

<sup>90</sup> Minutes of Meeting, Oct. 10, 1906, *ibid.*

January 1907.<sup>91</sup> When the New Jersey document was completed, it was found to be incongruent with the Delaware draft. The joint body then met twice in January 1907 in an effort to bring the two proposed laws into uniformity.

On January 16, 1907, the six members of the joint fishing commission agreed that they had created the uniform fishing laws demanded by the compact and were ready to present them to their respective state legislatures. They wrote to their governors that Congress could now ratify the compact.<sup>92</sup> Three days later, Robert H. Richards, Delaware's Attorney General, informed Congressman Burton that it was now "necessary" that the Compact be ratified before the expiration of the February 1, 1907, deadline set by the United States Supreme Court.<sup>93</sup> On January 19, the same day he had written to Burton, Richards also wrote to the chairman of the House Judiciary Committee to say that, speaking on behalf of the government of Delaware, he urged the House of Representatives to move promptly to ratify the compact. Richards explained that "the object and purpose of this compact was to settle certain matters concerning fisheries which had been the cause of the litigation for years pending in the Supreme Court."<sup>94</sup>

Attorney General Richards was at pains to point out that the compact had gained the support of both states' legislatures. He added that "It does not purport to settle any of the boundary line between the two states," and went on to say "but on the other hand, [the compact] expressly provides that the boundary line between the two states shall not in

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<sup>91</sup> Alexander B. Cooper to William J. Bradley, Jan. 5, 1907, D.P.A.

<sup>92</sup> Minutes of Meeting, Jan. 16, 1907, Delaware Commissioners, Delaware-New Jersey Fisheries Compact, Minute Book, D.P.A. The commissioners met again several days later to complete minor adjustments.

<sup>93</sup> [Richards] to Burton, Jan. 19, 1907, N.A.

<sup>94</sup> Attorney General Robert H. Richards to Chairman, Judiciary Committee, U.S. House of Representatives, Jan. 19, 1907, D.P.A.

any wise be affected by the compact." Robert Richards's desire for speedy action in the United States House of Representatives was fulfilled when, on January 24, 1907, the House ratified the New Jersey-Delaware Compact.

On April 23, 1907, the Delaware General Assembly approved "An Act Providing Uniform Laws to Regulate the Catching and Taking of Fish in the Delaware River and Bay between the State of Delaware and the State of New Jersey."<sup>95</sup> New Jersey's legislature approved a comparable, but not identical, law on May 7, 1907.<sup>96</sup>

With passage of the fishing laws, the members of the joint commission's work was over. If preserving the health of the fishing industry on the Delaware River and Bay was the ultimate goal of the new laws, then the commissioners bore a heavy burden. In their final report, Delaware's commissioners noted "the undoubted fact of the gradual disappearance of the shad ... and the almost total disappearance of the valuable sturgeon industries." They focused blame on two factors: the destruction of small food fish by menhaden fishermen and industrial pollution. The commissioners suggested that the menhaden fishing problem could be resolved by restricting its season to the summer months. To the pollution problem they offered no remedy.<sup>97</sup>

The commissioners had also fulfilled their mandate under Article IV of the compact to place monuments to mark the division of the Delaware River and Bay on both shores. In June 1906 the members of the Joint Commission boarded a tug boat that took them down the Delaware River to locate the place that they would declare to be the end

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<sup>95</sup> *Laws of Delaware*, vol. 24, pt. 1, chap. 146, pp. 272-81.

<sup>96</sup> *New Jersey P.L.*, 1907, chap. 131, p. 302.

<sup>97</sup> Report of the Commissioners to the Del. Gen. Assembly, 1906.

of the river and beginning of the bay. Their efforts were thwarted by the soggy marshland soil on either side, but not by any disagreement concerning where the imaginary line should be drawn. They settled on places of adequately fast land, one near Liston's Point on the Delaware side and another near the mouth of Hope Creek in New Jersey. In those places monuments to delineate the mouth of the Delaware River could be erected without fear of their sinking.<sup>98</sup>

Perhaps finally the troublesome and costly issues that had sprung from Delaware's fishing law of 1871 could be put to rest, but it was not to be. As early as 1909 Governor Preston Lea told the legislators in Dover that "unfortunately, certain modifications were made in the bill as passed by the General Assembly of Delaware so that it does not conform to the bill prepared by said Joint Commission and which was passed by the state of New Jersey."<sup>99</sup> Put simply, in spite of so much effort, the two states' fishing laws were not uniform, and they were destined to become even less so in the years to come. The mandate in Article IV of the compact for the passage of uniform laws never happened, not within the two year requirement of the compact—or ever.

#### **The Post-Compact Era**

Legislative memory was short. Members of Delaware's General Assembly seldom served for more than one or two terms. In the years after 1907 the state government focused its attention on the large-scale tasks of providing modern roads and highways for the increasing number of automobiles and providing modern schools, including high schools, for the state's youth. In that environment, the Compact of 1905

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<sup>98</sup> *Report of Delaware Commissioners on Delaware and New Jersey Fisheries Compact* (no place, no date), pp. 6-8. D.P.A.

<sup>99</sup> *State of Delaware, Biennial Message of His Excellency Preston Lee, Governor, to the General Assembly convened at Dover on Tuesday, The Fifth Day of January, 1909*, p. 25, D.P.A.

quickly receded into hazy memory. No one complained when the legislatures of either state made changes in their respective fishing laws; and the Delaware River within the twelve-mile circle came to be seen as a commercial highway rather than as a source of food.

A letter from New Jersey's attorney-general, John W. Wescott, to Herbert H. Ward dated July 3, 1914, demonstrates how quickly memory of the compact had faded. The little that Wescott knew about the agreement had come in garbled form from an older colleague. The attorney-general falsely claimed that Delaware had never even tried to pass a fisheries law subsequent to the 1905 Compact. Wescott went on to observe that New Jersey had recently changed its fishing law and suggested that Delaware adopt that same law. Thus, he said, the two states might yet achieve uniform laws. Delaware did not respond, and New Jersey never pursued the issue.<sup>100</sup>

In the mid-1920s jurisdiction over oyster beds in the Delaware Bay became an issue. The Compact of 1905 had not established an east-west boundary between the states in the Delaware Bay. Article VI of the compact had merely allowed both states to maintain their laws respecting oysters. In 1925, the arrest of Delaware oystermen by New Jersey for working in water claimed by both states set in motion a series of steps that led to another joint commission. According to the joint resolution of the Delaware legislature, the commission was charged with creating "the final adjustment of all controversies relating to the boundary line between said States and to their respective

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<sup>100</sup> John W. Wescott to Herbert H. Ward, Trenton, N. J., July 3, 1914.

rights in the Delaware River and Bay.<sup>101</sup> After that commission failed, New Jersey decided to put the state's land claims to the final test in the United States Supreme Court. In its bill of complaint New Jersey claimed title to the subaqueous soil of the Delaware River and Bay to the ship channel, specifically including the area within the twelve-mile circle. In addition to maintaining its ownership of the river within the twelve-mile circle, Delaware also claimed the boundary below the circle along the center of the waterway as measured from shore to shore. Delaware would finally get the day in court to put the boundary question to rest that George Bates and Alexander Cooper had desired back in 1905.

Unlike the dilatory movement of the similar case filed in 1877, this time the process moved forward quickly. William L. Rawls, Esq., of Baltimore, Maryland, was appointed special master in 1930 and promptly began hearings in 1931. Oral arguments were completed in the fall of 1932, and Special Master Rawls filed his report with the United States Supreme Court on October 9, 1933. To keep abreast of this speedy schedule Delaware's counsel, Clarence Sutherland, made extensive use of the documentary evidence that George Bates had collected nearly thirty years before.<sup>102</sup>

The special master gave something to both sides. He accepted Delaware's contention that the Penn grant had given the First State the river's subaqueous soils within the twelve-mile circle. On the other hand, he rejected Delaware's claim to the

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<sup>101</sup> *Laws of Delaware*, vol. 35, chap. 243, p. 644, reprinted in Documents submitted by the State of Delaware to U.S. Supreme Court in *New Jersey v. Delaware III* on Oct. 27, 2005, Lodging, tab 4, pp. 20-21.

<sup>102</sup> Clarence Sutherland to the Hon. Percy Warren Green, Attorney General of Delaware, July 3, 1935, D.P.A.

geographic center below the circle in favor of New Jersey's assertion that the dividing line was the ship channel.

On February 5, 1934, Justice Benjamin Cardozo announced the Supreme Court's final decree, which upheld the special master's rulings on both counts. After a careful review of the documentary evidence from colonial times Justice Cardozo concluded that the twelve-mile circle did indeed extend to the low water mark on the New Jersey shore. He also took pains to refute New Jersey's contention that by agreeing to the Compact of 1905 Delaware had abandoned its claims to the river waters and subaqueous soils within the twelve-mile circle.

Justice Cardozo wrote, "We are told that by this compact the controversy was set at rest and the claim of Delaware abandoned. It is an argument wholly without force. The compact of 1905 provides for the enjoyment of riparian rights, for concurrent jurisdiction in respect to civil and criminal process, and for concurrent rights of fishery. Beyond that it does not go."<sup>103</sup> In closing, Justice Cardozo reiterated the court's opinion that "Within the twelve-mile circle, the river and the subaqueous soil thereof up to low water mark on the easterly or New Jersey side will be adjudged to belong to the State of Delaware, subject to the Compact of 1905."<sup>104</sup>

What might the words "subject to the Compact of 1905" have meant, taken in historical context? The compact had been created to address conflict over the rights of commercial fishermen of New Jersey and Delaware, particularly within the twelve-mile circle. The compact's major goal had been the creation of uniform fishing laws, yet,

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<sup>103</sup> *New Jersey v. Delaware*, 291 U.S. 361, 377-378.

<sup>104</sup> *Ibid.*, 385.

despite the compact, such laws never came into being. In the years that followed the Supreme Court's decree of 1934, various officials in both Delaware and New Jersey occasionally brought the uniform law issue to the attention of other officials in their respective states, but neither side rose to the challenge to address those suggestions.<sup>105</sup> The reason is clear: by the 1930s few if any commercial fishermen cast their nets within the twelve-mile circle because there were few fish to be caught there. Commercial fishing had moved downstream to the Delaware Bay and Atlantic Ocean.

There was also the question of jurisdictional rights in the waters and subaqueous soils of the circle. In his final report to Delaware's attorney general, Clarence Sutherland, Delaware's special counsel in the Supreme Court case, mused that the state might consider taxing wharfs on the New Jersey shore.<sup>106</sup> But nothing came of that idea, perhaps because in Delaware real estate taxes were levied by the counties, not the state.

### Conclusion

Viewed in historical context, the Compact of 1905 addressed the most pressing and divisive issue of the time, which was fishing rights in the Delaware River. The compact did not attempt to resolve other issues, it merely deferred them with language that permitted the *status quo* to continue. As George Bates told the United States Supreme Court when he made oral argument on behalf of both state's joint application for suspension of proceedings in February 1906, "the compact . . . [was] not a settlement of the disputed boundary, but a truce or *modus vivendi*. . . . Its main purpose is to

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<sup>105</sup> See, for example, State of New Jersey Board of Fish and Game Commissioners to the Hon. A. Harry Moore, Governor of New Jersey, February 14, 1939; memo from Delaware Assistant Attorney General Jeremy W. Horner to Nathan Hayward, III, Director, Office of Management, Budget and Planning, October 28, 1977, 1977 WL 25804 (Del. A.G.), opinion number 77-033.

<sup>106</sup> Sutherland to Green, Jul. 3, 1935, D.P.A.



provide for enacting and enforcing a joint code of laws regulating the business of fishing in the Delaware River and Bay."<sup>107</sup>

Respectfully submitted,

  
Carol E. Hoffecker, Ph.D.

Date: November 9, 2006

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<sup>107</sup> Statement of reasons submitted orally for the joint application of counsel on both sides for suspension of proceedings until the further order of the Court, reprinted in Documents submitted by the State of Delaware to U.S. Supreme Court in *New Jersey v. Delaware III* on Oct. 27, 2005, Lodging, tab 7, [p. 10].

# EXHIBIT A

CAROL E. HOFFECKER

ADDRESS                      804 Cinnamon Drive  
                                    Bon Ayre  
                                    Hockessin, DE 19707                      (302) 239-6724

CURRENT POSITION

*Richards Professor and Alison Professor, University of Delaware, Emerita, 2003*  
*Richards Professor of History, University of Delaware, 1982*  
*Alison Professor, University of Delaware, 1998*

PREVIOUS POSITIONS

*Instructor, Sweet Briar College (1963-66)*  
*Visiting Assistant Professor, Northeastern University (1967-68)*  
*Junior Resident Scholar, Eleutherian Mills Historical Library (1968-69)*  
*Coordinator, Hagley Graduate Program (1970-73)*  
*Assistant Professor, University of Delaware (1973-75)*  
*Associate Professor, University of Delaware (1975-82)*  
*Chairperson, Department of History, University of Delaware (1983-88)*  
*Associate Provost for Graduate Studies, University of Delaware (1988-95)*

EDUCATION

*B.A. (with Honors)              University of Delaware, 1960*  
*M.A.                                Radcliffe College, 1962*  
*Ph.D.                                Harvard University, 1967*

PUBLICATIONS

*Books*

*Readings in Delaware History (editor), University of Delaware Press, 1973.*  
*Wilmington, Delaware: Portrait of an Industrial City, 1830-1910, University of Virginia Press, 1974.*  
*Brandywine Village: the Story of a Milling Community, Old Brandywine Village, Inc., 1974.*  
*Delaware: A Bicentennial History, W. W. Norton, 1977.*

*Wilmington: A Pictorial History*, Donning Company Publishers, 1982.  
*Corporate Capital: Wilmington in the Twentieth Century*, Temple University Press, 1983.  
*Books, Bricks, Bibliophiles: The University of Delaware Library*, (with John A. Munroe), University of Delaware Press, 1984.  
*Delaware, Small Wonder, State of Delaware and Harry N. Abrams, Inc.* 1984.  
*Delaware, the First State*, Mid-Atlantic Press, 1988.  
*Federal Justice in the First State: A History of the United States District Court for Delaware*, 1992.  
*Beneath Thy Guiding Hand: A History of Women at the University of Delaware*, the University of Delaware, 1994.  
*New Sweden In America*, ed, University of Delaware Press, 1995.  
*Unidel, A Foundation For University Enrichment*, University of Delaware, 1996.  
*Honest John Williams, U.S. Senator from Delaware*, University of Delaware Press, 2000.  
*Familiar Relations: the du Ponts and the University of Delaware*, University of Delaware, 2000.  
*Democracy in Delaware, The Story of the First State's General Assembly*, Cedar Tree Books, 2004.  
*The Delaware Adventure (with Barbara E. Benson)*, Gibbs Smith Publishers, 2006.

#### Articles

"Nineteenth Century Wilmington: Satellite or Independent City?" *Delaware History*, April, 1972.  
 "Church Gothic: A Case Study of Revival Architecture in Wilmington, Delaware," *Winterthur Portfolio*, 1972  
 "The Politics of Exclusion: Blacks in Late Nineteenth Century Wilmington, Delaware," *Delaware History*, April, 1974.  
 "The Diaries of Edmund Canby, A Quaker Miller," *Delaware History*, October, 1974, and spring-summer, 1975.  
 "Four Generations of Jewish Life in Wilmington," in *Delaware and the Jews*, Jewish Historical Society of Delaware, 1979.  
 "The Land of the Middle Brow Amateur" in *Artists in Wilmington, 1890-1940*, Delaware Art Museum, 1980.  
 "Water and Sewage Works in Wilmington, Delaware, 1810-1910," *Public Works Historical Society*, 1981.  
 "Delaware's Woman Suffrage Campaign," *Delaware History*, spring-summer, 1983.  
 "The Emergence of a Genre: The Urban Pictorial History," *Public Historian*, 1983.  
 "George Read: Father of the Delaware State," with Richard R. Cooch, *Delaware Lawyer*, Fall 1987.  
 "Benjamin Ferris and the Perils of Liberal Religion," *Quaker History*, Spring 1988.  
 "Delaware," *Encyclopedia Britannica*, 1998.  
 "John James Williams (1904-1988)," *Scribner Encyclopedia of American Lives*, 1998.  
 "Introduction," *University of Delaware, A Celebration*, 1998.  
 "Emily P. Bissell," *American National Biography*, 1999.  
 "The Changing Look of Delaware," *Picturing Delaware*, University of Delaware Library, 2001.  
 "William V. Roth," *Scribner Encyclopedia of American Lives*, 2005.

## GRANTS RECEIVED

*Harry S. Truman Library Research Grant, 1963*  
*Eleutherian Mills-Hagley Foundation, Junior Resident Scholar, 1968-69*  
*National Endowment for the Humanities Research Grant, 1977-80*  
*T. Wistar Brown Fellowship, Haverford College, 1986*

## PRIZES AND AWARDS

*Richards Professor of History, 1982*  
*Joseph P. delTufo Award, Delaware Humanities Forum, 1989*  
*Goldey-Beacom College, Honorary Doctorate, 1993*  
*Hall of Fame of Delaware Women, 1993*  
*E. Arthur Trabant Institutional Award for Women's Equity, 1997-98*  
*Francis Alison Professor, 1998*  
*University of Delaware Medal of Distinction, 1998*  
*CASE Professor of the Year for Delaware, 1999*  
*University of Delaware Alumni Wall of Fame, 2001*

## SERVICE

*Board of Managers, Wilmington Institute Free Library, 1974-79*  
*Historical Records Advisory Board, State of Delaware, 1976-87*  
*Historical Society of Delaware, Board of Trustees, 1979-88*  
*State Records Advisory Task Force, 1984-96*  
*National Endowment for the Humanities, review panelist and project reviewer, various years*  
*Rockwood Museum Planning Task Force, New Castle County, 1999-2000*  
*Rockwood Museum Advisory Committee, 2000-05*  
*Delaware Geographic Names Committee, 2001-*  
*Editor, Delaware History, periodical of the Historical Society of Delaware, 1995-*  
*In addition, I give talks and speeches on Delaware-related subjects to a wide variety of organizations throughout the state, usually about twenty per year.*

## UNIVERSITY SERVICE (selected examples)

*University Women's Studies Executive Committee, with brief interruptions from 1972-2000*  
*Vice-president, University Faculty Senate, 1980-81*  
*President, University Faculty Senate, 1981-83*  
*Coordinator, University Roundtable on Secondary Education, 1984-85*

*University President's Advisory Council, 1981-83*  
*Winterthur Graduate Program Executive Committee, 1983-85*  
*Hagley Museum and Library Advisory Committee, 1983-88*  
*Council on Program Evaluation, 1985-1992*  
*Middle States Re-accreditation Committee, 1989-1992, 1999-2000*  
*Chair, University's Project Vision Implementation Committee, 1990*  
*Chair, University Ad Hoc Committee on General Education, 1997-2000*  
*University of Delaware Press Board, 1997-2001*  
*President Phi Beta Kappa Honorary, UD Chapter, 1999-2000*  
*Chair, Commission on the Status of Women, 1999-2000*  
*Chair, Faculty Senate Committee on Student and Faculty Honors, 1999-2000*

# EXHIBIT B

## BARBARA E. BENSON

804 Cinnamon Drive  
Bon Ayre  
Hockessin, Delaware 19707  
302-239-6724  
[bcde1@verizon.net](mailto:bcde1@verizon.net)

### Historical Consultant (September 2003--)

Provides a range of strategic planning, management, writing, and design assistance to individuals, businesses, and nonprofit organizations.

#### Recent Projects:

- Co-author, *The Delaware Adventure* (Gibbs Smith, 2006), a social-studies textbook
- Curator, 300<sup>th</sup> Anniversary Exhibition on Delaware General Assembly, Delaware Public Archives (2003)
- Space planning and exhibition creation, Rehoboth Beach Historical Society (2003--)
- Strategic planning and Director's Search Committee, Hagley Museum and Library (2003--)

### Historical Society of Delaware

- *Executive Director*, (1990—2003)
- *Managing Editor of Delaware History*, Historical Society of Delaware (1977—2003)
- *Director of Library and Publications* (1980-1990)

Responsibilities: chief staff and administrative officer for a private, nonprofit state historical organization (founded in 1864) with three principal museum sites, a major manuscript and reference library, and four additional historical properties used for a variety of purposes; educational programs serving over 50,000 adults and children a year; and publications program.

### University of Delaware

- *Adjunct Associate Professor* (1989--2003)
- *Adjunct Assistant Professor* (1981-1989),

Responsibilities: Teaching H200, History and Government of Delaware, H206 Survey of United States History, 1865-Present, H268 History Seminar for Undergraduate Majors, H411 History Seminar; H603 Public History, H667 Seminar in Historical Editing, H803 Writing Seminar in the History of the Delaware Valley.

### Hagley Museum and Library

- *Assistant to the Director of the Library* (1973-19s75)
- *Editor of Publications* (1975-1980)



**EDUCATION:**

Ph.D., *American History*, Indiana University, 1977

Areas of specialization: economic history; regional history. Dissertation: "The Development of Michigan's Lumber Industry, 1837-1870"

M.A., *American History*, Indiana University, 1969

B.A., *History*, Beloit College, 1965

**COMMUNITY SERVICE:**

**New Castle County Historic Review Board, Chairperson, 2003--**

**New Castle County Personnel Committee board member, 2000 -2003**

**New Castle County Rockwood Advisory Committee, Chairperson, 2000--2005**

**African American Museum of Delaware, Board Member, 1999--2003**

**New Castle County Taskforce Committee on Rockwood Museum, 1999**

**Wilmington Rotary Club, Board of Directors, 1997-1999**

**YWCA, Centennial Committee, 1994**

**Delaware Humanities Forum (the state-based agency of the National Endowment for the Humanities), council member, 1987-90; 1990-94; chairperson, 1992-94; vice-chairperson, 1990-1992; chairperson, grants review committee, 1988-1992; outside evaluator, 1980-1987**

**Delaware State Tourism Advisory Board, gubernatorial appointment, 1988-1991; 2002--**

**Association of Delaware Historical Societies, secretary-treasurer, 1985-1995**

**Delaware Heritage Commission, member of publications committee, 1984-1988; scholarship judge, 1986-94, ex-officio member of board, 1993--**

**Sister Cities of Wilmington, member of board of directors, 1986-96; official delegate to Kalmar, Sweden, 1985**

**Lectures and Workshops for state and local groups (1991--), including schools, church groups, patriotic organizations, genealogical societies, school districts, public libraries, museums, and historical societies in all three counties.**

**PROFESSIONAL/SCHOLARLY ACTIVITIES:**

**Delaware State Records Commission, gubernatorial appointment, 1988--2000**

**Delaware State Historical Records Advisory Board** (state-based program of the National Historical Publications and Records Commission), member, 1986-89, 1990-93, vice-chair, 1994-2000

**American Association of State and Local History**, state representative for awards committee, 1985-91; state membership chair, 1996-2003

**Hagley Museum and Library, McShain Editorial Board**, 1993-94

**Museum Council of Philadelphia**, board member, 1991-92

**Delaware Historic Preservation Review Board**, member, 1990-93, 1993-97

**Institute of Museum Services**, grants reviewer, 1986, 1987, 1988, 1991, 1992, 1993, 1994, 1996, 1997, 1999, 2001

**Mid-Atlantic Regional Archives Conference**, member of governing board, 1982-1984, 1984-1986; chairperson of nominating committee, 1985-1986; conference speaker and commentator, 1985 ("Getting Published"), 1986 ("Collecting African-American Sources"), 1988 ("Conservation for Small Organizations"), 1989 ("Designing and Constructing Archival Storage Facilities")

**Salisbury State University**, workshop leader, 1989

**Taft Seminar at University of Delaware**, 1989, 1990, 1991 presented papers on government in Delaware

**New Sweden Conference, University of Delaware**, 1988, chair and commentator for session on archival sources in Scandinavia and America

**New Jersey Historical Commission Annual Symposium**, 1988, chair and commentator for session on Swedish and Finnish Migration

**Delaware Valley Eighteenth-Century Society**, 1987, presented paper on Delaware in the 1780s

**University of Delaware, History of Technology Speakers Series**, 1987, presented a paper on the underwater archaeology of the Kronan

**Delaware State House Symposium**, chairperson of sessions, 1977, 1984, 1986

**Central Michigan University, Clarke Memorial Lecturer, Clarke Historical Library**, 1983

**Consultant on Collections, Exhibitions, and Publications**  
Chesapeake Bay Girl Scouts Council; Mrs. Lamot du P. Copeland; Hershey Archives; History Store, Inc.; Greater Harrington Historical Society; Laurel Historical Society; Lewes Historical Society; Milford Museum; Rockwood Museum

**American Library Association, Rare Books and Manuscripts Preconference, 1985 panelist,**  
library exhibits and the public

**Consultant to Video Projects**

*Whispers of Angels*, Teleduction, 2001

*Slavery in Delaware*, WHYX-TV, 1997

*Celebrate 75*, Celebrate 75 Video Production, 1995

*Wilmington in the Age of Confidence*, WHYX-TV, 1990-92

*1968 – The Siege of Wilmington*, WHYX-TV, 1989

*New Sweden: An American Portrait*, Dick Young Productions for Swedish Tobacco Company, 1988

**PUBLICATIONS:**

*The Delaware Adventure* (Gibbs Smith Publishers, 2006)

“New Castle County Courthouses,” in *Delaware Lawyer* (2003)

“Delaware in World War II,” in *Delaware History* (vol. 23, 1995-96)

Co-editor, *New Sweden in America* (University of Delaware Press, 1996)

*Wilmington and Beyond* with Michael Biggs (Jared Press, 1990)

*Logs to Lumber: The Development of the White Pine Lumber Industry in Michigan* (Clark Library Press of Central Michigan University, 1989)

Editor, *Arriving in Delaware: The Italian-American Experience* by Priscilla Thompson (History Store and Italo-Americans United, 1989)

Editor, “Colonial and Revolutionary Delaware,” in *Dictionary of Colonial and Revolutionary America* (Sachem Press, 1989)

“Joshua Clayton” and “Henry Latimer,” *Delaware Medical Journal* (April, 1989)

Contributor, *A Historical Dictionary of American Industrial Language*, ed. William H. Mulligan, Jr. (Greenwood Press, 1988)

Introduction and text for Michael Biggs, *Delaware...A Photographic Journey* (Jared Press, 1986)

“Delaware’s First ‘Doctor’: Tyman Stidham and the Tools He Used,” *Delaware Medical Journal* (Oct. 1986)

Contributor, *The Craft of Public History*, ed. Robert Pomeroy and David Trask (Greenwood Press, 1983)

“Profile of Delaware,” “Thomas F. Bayard,” and “Bayard Family” in *World Book Encyclopedia*, 1985-86, 1990

Editor, *The Engineer as an Agent of Technological Transfer in the Nineteenth Century*  
(Eleutherian Mills Historical Library, 1975)

Book reviews and conference report in *Indiana Magazine of History*, *Business History Review*,  
and *Technology and Culture*

**AWARDS AND HONORS:**

Who's Who in America, 1991-2003

New Castle County Historic Review Board, Achievement Award, 2003

City of Wilmington, Certificate of Recognition, 2003

Delaware State Society of the National Society of the Daughters of the American Colonists,  
Certificate of Recognition, 1989

Council for the Advancement of Citizenship and the Center for Civic Education Bicentennial  
Leadership Award, 1988

Delaware Teacher Center Award, 1988

Royal Recognition Medallion, King Karl XVI Gustav of Sweden, 1988

Official Visitor from Wilmington to Kalmar, Sweden, Sister Cities Program, 1985



No. 134, Original

In the Supreme Court of the United States

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State of New Jersey

v.

State of Delaware

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Expert Report of Professor Joseph L. Sax

1. My name is Joseph L. Sax. My address is: Boalt Hall, School of Law, University of California, Berkeley, California, 94720. I am the James H. House & Hiram H. Hurd Professor (emeritus) at the University of California, Berkeley. I have been a member of the Berkeley faculty since 1987. From 1966 to 1986, I was on the faculty of the University of Michigan, where I was the Philip Hart Distinguished University Professor. Prior to that time, I practiced law in Washington, D.C. and was on the faculty of the University of Colorado. From 1994 to 1996, I served as Deputy Assistant Secretary of the Interior and as Counselor to the Secretary of the Interior. I am a graduate of Harvard College and the University of Chicago Law School, and hold an honorary Doctor of Laws degree from the Illinois Institute of Technology. I am a fellow of the American Academy of Arts and Sciences.

2. I have no interest in, or connection with, any of the parties to this case other than having been retained by the State of Delaware to review the claim made by the State of New Jersey, to provide my opinion as an expert on the background and historical understanding of riparian law, and to prepare this Expert Report.

Qualifications

3. For more than 40 years as a scholar and teacher, one of my principal interests has been research and teaching in the field of water law. It has been a central issue considered in classes and seminars I have taught. I am the author of a number of books and articles on the subject, including *Water Law: Cases and Commentary* (Pruett Press, 1965); *Water Law, Planning and Policy* (Bobbs-Merrill, 1968); *Federal Reclamation Law, in II Waters and Water Rights*, Chapter 8 (Allen Smith Co., ed. R. E. Clark, 1967); and four editions of *Legal Control of Water Resources*, the most recent being the 4th edition (with Barton H. Thompson, John Leshy & Robert H. Abrams) (St. Paul, Thomson/West, 2006). I have consulted for the Council of Great

Lakes Governors and the International Joint Commission (Great Lakes). During my tenure at the United States Department of the Interior, one of my principal responsibilities was dealing with interstate water issues on the Colorado River. After leaving the Department of the Interior, I served as a consultant for the U.S. Bureau of Reclamation, and I am currently a consultant for the Southern Nevada Water Authority. I served as an expert for the State of Mississippi in a case involving riparian rights and submerged lands owned by the State. I recently prepared a report on the law of groundwater for the California State Water Resources Control Board.

Information Required Pursuant to Rule 26(a)(2)(B)

4. My *curriculum vitae* is attached hereto as Exhibit A, and a list of all my publications within the past 10 years is attached hereto as Exhibit B.
5. All the data and information considered by me in forming the opinions herein, other than knowledge gained over many years of study in the field, are cited in this report.
6. I am being compensated for my work in preparing this report and for my testimony, if called, at the rate of \$500 per hour, plus out-of-pocket and travel expenses. My compensation is not contingent on or related in any way to the outcome of this case.
7. I testified as an expert witness for the State of Mississippi in *Bayview Land, Ltd. v. Mississippi*, Cause No. C2402-98-389, in the Chancery Court of Harrison County, Mississippi, in 2002. I have recently prepared an expert report for the United States and expect to be called to testify in the pending case of *Glamis Gold, Ltd. and United States of America (In the Arbitration Under Chapter Eleven of the NAFTA and the UNCITRAL Arbitration Rules)*.

Scope of Assignment

8. I have been retained by the State of Delaware to provide an historical analysis of riparian rights and laws as they existed at the time the 1905 Compact was executed by Delaware and New Jersey, as well as an opinion as to the interpretation to be given to the language in Article VII of the 1905 Compact at issue in this case, insofar as I can do so based on my knowledge of the history and understanding of the law of riparian rights in the 19th and early 20th centuries. For the purpose of preparing this opinion, I have read the initial pleadings and appendices filed in this case, the riparian grants, leases, and conveyances issued by New Jersey between 1854 and 1920 (which are discussed in the Affidavit of Richard Castagna and attached to New Jersey's initial filing), New Jersey's responses to Delaware's requests for admissions, certain documents pertaining to New Jersey's 1980 Coastal Management Plan, a permit issued by New Jersey in 1991 to the Keystone project, and a permit issued by New Jersey in 1996 to the Fort Mott project.
9. I have been asked to address the historical context for the drafting of Article VII, and the meaning and scope of the Article VII language "to exercise riparian jurisdiction of every kind and nature, and to make grants, leases, and conveyances of riparian lands and rights under the laws of the respective States." My report therefore describes the history and understanding of riparian

rights and laws in the United States, including New Jersey and Delaware, up to the execution of the 1905 Compact.

#### Summary of Opinion

10. Riparian jurisdiction embraces jurisdiction only over the incidents of riparian land-ownership, such as authorization to build a wharf to access navigable waters far enough to permit the loading and unloading of ships, and the right to own accretions. Authority to make grants, leases, and conveyances of riparian lands and rights is the concomitant power to make available state-owned lands beneath navigable waters needed to implement incidents of riparian landownership, such as construction of a wharf. Such authority is jurisdiction over the definition and scope of property rights, that is, the rights and privileges that attach to riparian lands. It does not include police power jurisdiction to determine the legality of activities on, or in connection with the use of, riparian property such as a wharf. Nor does it include jurisdiction to determine the scope or content of public rights in navigable waters, which may be invoked to limit the exercise of riparian rights.

#### Opinion

11. Article VII of the 1905 Compact reads: "Each state may, on its own side of the river, continue to exercise riparian jurisdiction of every kind and nature, and to make grants, leases, and conveyances of riparian lands and rights under the laws of the respective states." The phrase "riparian jurisdiction" was not then, and is not now, a legal term of art. It is, to the best of my knowledge, found neither in the treatise or article literature, nor in judicial opinions or statutes. That particular verbal formulation seems to have been devised for use in Article VII of the 1905 Compact as a limitation on the term "jurisdiction."<sup>1</sup>

12. Riparian law is a distinctive sub-category of the law of property. It deals with the incidents specific to ownership of riparian land.<sup>2</sup> A riparian tract of land is one that abuts the water's edge on a river or lake, or the shore of the sea.<sup>3</sup> The term derives from the Latin word "ripa", which means bank, as in the bank of a river. Land that is on the bank of a river is riparian land. As a

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<sup>1</sup> Elsewhere in the 1905 Compact one finds the more familiar terms "jurisdiction" (in the introductory paragraphs and in Article VIII) or "exclusive jurisdiction" (in Article IV).

<sup>2</sup> In this Report, I shall speak of riparian rights as they existed prior to the time of the 1905 Compact, though the general shape of riparian rights has not changed significantly in the past century.

<sup>3</sup> See John M. Gould, *A Treatise on the Law of Waters, Including Riparian Rights and Public and Private Rights in Waters Tidal and Inland* § 148, at 297 (3d ed. 1900) ("Gould"). Legally, there is no distinction between land on the bank of a river and land on the bank of a lake or the sea, though technically the latter categories are termed littoral land, lit(t)us being the Latin word for sea shore or coast.



legal matter, the test of whether land is riparian is whether its boundary is at the water's edge, touching the water, whether or not there is anything like a bank. Such lands – and only such lands – are riparian. Riparian law, or what is usually called the law of riparian rights,<sup>4</sup> describes a set of special benefits in regard to the adjacent water body to which riparian landowners are entitled.

13. Riparian landownership conventionally includes the right to divert a reasonable amount of water for use on the riparian tract, the right to use the entire surface of the water (regardless of bottomland ownership) for recreational swimming or boating, and the right to stop up a river to install a dam in order to produce hydro-power.<sup>5</sup> There are other incidents of riparian ownership, such as a right to cut ice in the winter, though that use is of little importance today, as compared with the 1800s. Other important elements of riparian law are the rules of accretion, avulsion, erosion, and reliction, which determine how and whether the shore boundary moves as land is deposited or eroded at the edge of the tract, or as the sea level rises or falls. Another incident of riparian landownership is wharfing out, which is a right of access to a navigable depth of water.<sup>6</sup>

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<sup>4</sup> While it is conventional to use the term riparian rights, or entitlements, some riparian incidents are property rights, and some – such as wharfing out onto state-owned bottomlands – are usually privileges that depend on prior governmental permission. See, e.g., 1 Henry Philip Farnham, *The Law of Waters and Water Rights* § 113, at 528 (1904) (“Farnham’s Law of Waters”). For convenience, in this Report, I will use “riparian rights” as a general term to describe use incidents of riparian landownership.

<sup>5</sup> See generally 1 Farnham’s Law of Waters at 278-347; Gould at 296-447. A modern description of the incidents of riparian ownership, which for most purposes are quite similar to what they were a century ago, can be found in 1 Joseph W. Dellapenna, *Waters and Water Rights* §§ 6.01 *et seq.* (1991).

<sup>6</sup> See Gould § 149, at 300; 1 Samuel C. Wiel, *Water Rights in the Western States* § 904, at 942 (3d ed. 1911) (“Wiel”). See, e.g., *New Jersey v. Delaware*, 291 U.S. 361, 375 (1934) (“By the law of waters of many of our states, a law which in that respect has departed from the common law of England, riparian proprietors have very commonly enjoyed the privilege of gaining access to a stream by building wharves and piers, and this though the title to the foreshore or the bed may have been vested in the state.”); *Shively v. Bowlby*, 152 U.S. 1, 40 (1894) (“a riparian proprietor, whose land is bounded by a navigable stream, has the right of access to the navigable part of the stream in front of his land, and to construct a wharf or pier projecting into the stream, for his own use, or the use of others, subject to such general rules and regulations as the legislature may prescribe for the protection of the public”) (internal quotation marks omitted); *Mayor of Newark v. Sayre*, 60 N.J. Eq. 361, 372-73, 45 A. 985, 990 (Ct. Errors & Appeals 1900) (“Unquestionably the owner of a wharf on the river bank has, like every other subject of the realm, the right of navigating the river, as one of the public. This, however, is not a right coming to him qua owner or occupier of any lands on the bank, nor is it a right which per[s]e he enjoys in a manner different from any other member of the public. But, when this right of navigation is connected with an exclusive access to and from a particular wharf, it assumes a

Essentially, wharfing out allows the riparian landowner to build a structure in the adjacent bottomlands sufficiently far out into the water to allow a ship to navigate to it, so it could load and unload, and its cargo could be transported on the wharf to the shore. As an access right, it provides the riparian landowner the physical capacity to make use of its water adjacency to benefit from water-borne commerce or recreation.<sup>7</sup>

14. As these examples demonstrate, riparian rights deal with facilitation of the ability by a riparian landowner to make general use of the water to which the riparian land is adjacent, rather than with the ultimate specific uses made of the water. Riparian law is property law.<sup>8</sup> It speaks to the rights of riparian landowners to make use of tidelands beneath navigable waters. And it speaks to the rights of riparian landowners among themselves, but not to the application of the general police power to riparian property. Thus, for example, riparian law determines how much water a riparian landowner may divert for use on his riparian tract, vis-à-vis other riparian landowners, but it does not speak to regulation of the kind of crops that may be grown, or whether

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very different character. It ceases to be a right held in common with the rest of the public, for other members of the public have no access to or from the river at the particular place; and it becomes a form of enjoyment of the land, and of the river in connection with the land[.]” (Depue, J., concurring) (internal quotation marks omitted).

<sup>7</sup> However, as a New Jersey court held long ago, while “[i]t is true[] that a grant of a right to build and maintain a wharf bears with it, by implication, the right to use it,” that does not mean that any use that is advantageous to, or desirable for, the owner of the wharf is permissible. *Keyport & Middletown Point Steamboat Co. v. Farmers Transp. Co.*, 18 N.J. Eq. 511, 1866 WL 89, at \*5 (Ct. Errors & Appeals 1866). “Extraordinary, unusual modes of use, no matter how convenient they may be, are not annexed as incidents in law to” the property right of wharfing out. *Id.*

<sup>8</sup> See *Yates v. Milwaukee*, 77 U.S. (10 Wall.) 497, 504 (1871) (“This riparian right is property, and is valuable, and, though it must be enjoyed in due subjection to the rights of the public, it cannot be arbitrarily or capriciously destroyed or impaired.”); *Bell v. Gough*, 23 N.J.L. 624, 1852 WL 3448, at \*38 (Ct. Errors & Appeals 1852) (“I am further of opinion that, by the true principles of the English common law, adopted in this state by the constitution of 1776, and adapted to the condition and requirements of our government, the owner of a freehold estate on the margin of tide water navigation has rights appurtenant to his freehold in the adjoining shore . . . as appurtenant to his riparian ownership, the right to exclude the influx of the tide by the erection of embankments, docks, or wharves, provided he does not impair or interfere with the common right of navigation or fishery or any other common right”) (Nevius, J.); see also *id.* at \*23 (Elmer, J.), \*33 (Potts, J.); 1 Farnham’s *Law of Waters* § 65, at 294 (“It appears to me impossible to say that a mode of enjoyment of land on the bank of a navigable river which is thus valuable, and as to which the landowner can thus protect himself against disturbance, is otherwise than a right, or claim to which the owner of land on the bank of the river is by law entitled within the meaning of the act requiring compensation for the destruction of such rights.”).

a certain type of industrial facility, for which cooling water may be diverted from the river, is permissible in regard to air pollution. Those are matters left to the general police power. One finds no discussion or consideration of such issues in treatises and case law describing riparian rights and riparian law. By analogy, the law of real property permits ownership and occupancy of real property, but those general rights may be limited under the police power to regulate, restrict, or even prohibit specific activities on that property.

15. Similarly, certain public rights such as the federal navigation servitude, or state public trust law, impose limits on what riparian landowners may do, but they do not arise out of riparian landownership, and they exist independently of riparian law.<sup>9</sup> For example, the federal navigation servitude arises out of the federal commerce power,<sup>10</sup> not out of property law, and imposes independent restrictions on riparian rights.<sup>11</sup> Similarly, there are public rights in the preservation of fisheries that arise out of an independent body of environmental law – international, national, or state – that may restrict the riparian rights to dam a stream for hydro-power, but the exercise of that power would not logically be deemed an exercise of “riparian” jurisdiction.<sup>12</sup>

16. Because the jurisdiction of only one state is at issue in ordinary cases affecting riparian rights, courts have not needed to distinguish between the realm of riparian jurisdiction and jurisdiction exercised pursuant to the police power. For example, if a riparian landowner loses the use of some of the industrial cooling water it was diverting under its riparian rights because the factory using it had to cut back production under applicable state air pollution laws, no question arises as to the scope of riparian jurisdiction, as all jurisdiction is ordinarily embodied within a single sovereign state or is dealt with under the Supremacy Clause of the Constitution<sup>13</sup> if there is conflict between state and federal laws.

17. However, under the terms of the 1905 Compact at issue here, identification of the extent and limits of the riparian realm, “riparian jurisdiction,” in the specific context of wharfing out, becomes relevant. To ascertain why the “riparian jurisdiction” and grants language of Article VII

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<sup>9</sup> See, e.g., *Obrecht v. National Gypsum Co.*, 361 Mich. 399, 105 N.W.2d 143 (1960) (public trust, nuisance).

<sup>10</sup> See *Gilman v. City of Philadelphia*, 70 U.S. (3 Wall.) 713, 724-25 (1866).

<sup>11</sup> “[I]t was recognized from the beginning that all riparian interests were subject to a dominant public interest in navigation.” *United States v. Willow River Power Co.*, 324 U.S. 499, 507 (1945).

<sup>12</sup> Riparian landowners held their riparian rights and privileges subject to the public right to have migratory fish pass up rivers to their headwaters. See Gould § 188, at 358; Joseph K. Angell, *Treatise on the Right of Property in Tide Waters and in the Soil and Shores Thereof* 89 (1826, reprint ed. 1983) (“Angell on Tide Waters”); Wiel § 905, at 945.

<sup>13</sup> U.S. Const. art. VI, § 2.

of the 1905 Compact might have been chosen, it is useful to note the historic situation of the law affecting wharfing out.<sup>14</sup>

18. In the late 19th and early 20th centuries, wharfing out into navigable waters – an incident of the ownership of riparian land<sup>15</sup> – was understood to have two elements that demanded state involvement: protection of the public right of navigation (usually implemented by setting a bulkhead line to mark the furthest permissible water-ward extent of wharfs and other structures) and permission to use submerged land below the high-water mark of navigable waters, which land was owned by the state.<sup>16</sup> The latter use was often implemented by a grant or lease of such land, as was the case in New Jersey. Under an 1871 New Jersey statute, riparian owners on tidal waters who wanted to build a wharf could obtain a lease, grant, or conveyance to state-owned lands in front of their riparian tracts by application to a board of riparian commissioners.<sup>17</sup> Some states, such as Delaware, however, seemed to recognize in this period that existing wharves would be protected so long they did not impede public rights such as that of navigation.<sup>18</sup> As to the first element, protection of the right of navigation, if the wharf interfered with the public right of navigation, it was considered a public nuisance. As to the second element, permission to use

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<sup>14</sup> Nothing in this Report involves the meaning of the Article VII phrase “own side of the river.” Instead, the analysis in this Report is based on my expertise in the history of riparian rights and laws and thus the interpretation of the “riparian” language in Article VII.

<sup>15</sup> “[O]wnership of the bed of the river . . . cannot be the foundation of a riparian rights properly so called, because the word ‘riparian’ is relative to the bank, and not to the bed of the stream, and the connection, when it exists, of property on the banks with property in the bed of the stream depends not upon nature, but on grant or presumption of law.” Gould § 148, at 297.

<sup>16</sup> See *Shively*, 152 U.S. at 49-50; *Pollard’s Lessee v. Hagan*, 44 U.S. (3 How.) 212 (1845). “The right of property in the soil covered by tide waters, in all navigable rivers and arms of the sea within the limits of the state of New Jersey is vested in the state.” *Gough v. Bell*, 22 N.J.L. 441, 1850 WL 4394, at \*10 (Sup. Ct. 1850), *aff’d*, 23 N.J.L. 624, 1852 WL 3448 (Ct. Errors & Appeals 1852); see *Mayor of Newark*, 60 N.J. Eq. at 363, 45 A. at 986.

<sup>17</sup> 1871 N.J. Laws ch. 256, p. 44, § 1. The present version of the law is found in New Jersey Statutes Annotated § 12:3-10. Prior to the regulation of wharfing out by statute, “the owners of land bounding on navigable waters had an absolute right to wharf out and otherwise reclaim the land down to and even below low water, provided they did not thereby impede the paramount right of navigation.” *Bell v. Gough*, 1852 WL 3448, at \*23, \*29 (Elmer, J.). But the “absolute right” was apparently only recognized down to the line of low water. See *id.* at \*38 (Nevius, J.). The Wharf Act of 1851 required state approval to fill below the low-water line. See 1851 N.J. Laws, p. 335.

<sup>18</sup> “[I]n the case of a mere purpresture the court will not enjoin or abate it, unless it shall appear as a fact . . . to the injury of the public.” *Harlan & Hollingsworth Co. v. Paschall*, 5 Del. Ch. 435, 1882 WL 2713, at \*11 (1882).

submerged lands, if permission to use state submerged land on which to build a wharf was not granted or otherwise assured, the wharf was subject to removal as a trespass on sovereign property, historically known as a purpresture.<sup>19</sup>

19. Riparian landowners who desired to wharf out routinely sought prior authority for their wharf from the state as to both these matters.<sup>20</sup> In the ordinary case, there was no ambiguity about which state had jurisdiction over this riparian activity: the state in which the riparian land was located also owned the submerged bottomlands.<sup>21</sup> The failure to resolve New Jersey's challenge

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<sup>19</sup> "If a littoral proprietor, without grant or license from the Crown, extends a wharf or building into the water in front of his land it is purpresture, though the public rights of navigation and fishery may not be impaired. If such a structure causes injury to the public right, it is a common nuisance and abatable as such[.]" Gould § 21, at 45 (footnotes omitted); *see also* Farnham's Law of Waters § 113, at 527. For a discussion of the traditional law relating to wharfing out, *see* Angell on Tide Waters at 125-33.

<sup>20</sup> The law in New Jersey from the legislation of 1851 to modern times, as set out in note 17, *supra*, is discussed in detail in *Bailey v. Driscoll*, 19 N.J. 363, 117 A.2d 265 (1955). State permission to extend facilities into the state's territory was authorized by grant or lease of land within the external boundaries of the riparian tract after 1871. In addition, the laws established bulkhead and pier lines to set an outer boundary beyond which improvement could not be made, in order to protect public rights of use in the waters, essentially the public right of navigation. In that way, both state proprietorship and the public's rights of use were recognized. At the same time, the authority of the federal government to control the navigation of navigable waters to the extent necessary for the regulation of interstate and foreign commerce was acknowledged. This history was similar to that in other states. *See* 1 Farnham's Law of Waters §§ 113b, 115, at 533, 554.

<sup>21</sup> *See* note 16, *supra*. Some states have granted specific tracts of land between high and low tide to the riparian owners (*e.g.*, *People v. California Fish Co.*, 166 Cal. 576, 138 P. 79 (1913)) or, like Delaware, recognized generally that "title to riparian property extends from the upland to the low water mark," *City of Wilmington v. Parcel of Land Known as Tax Parcel No. 26.067.00.004*, 607 A.2d 1163, 1168 (Del. Sup. Ct. 1992); *Harlan & Hollingsworth*, 1882 WL 2713, at \*10. What is unusual here is that New Jersey owns the land between the high- and low-water marks (except to the extent it has granted that land away), and Delaware owns the land below the low-water mark. *See New Jersey v. Delaware*, 291 U.S. 361 (1934). These are the lands usually referred to as being in the public trust, or *jus publicum*. American public trust law is usually traced back to the 1821 New Jersey case of *Arnold v. Mundy*, 6 N.J.L. 1, 1821 WL 1269 (Sup. Ct. 1821), a case involving conflicting claims to ownership of oyster beds, in which the court upheld the state's ownership of land beneath tidal waters, in this much-quoted passage: "[T]he navigable rivers, where the tide ebbs and flows, the ports, the bays, the coasts of the sea, including both the water and the land under the water, for the purposes of passing and repassing, navigation, fishing, fowling, sustenance, and all the other uses of the water and its products . . . are common to all the people, and that each has a right to use them according to his pleasure,

to the boundary prior to the time of the 1905 Compact (or in the Compact itself) would have created an unusual set of potential problems for New Jersey with regard to its issuance of “grants, leases, and conveyances” to riparian landowners within the Twelve-Mile Circle, because New Jersey’s claim to have jurisdiction on, over, and under the Delaware River within that area had been denied by Delaware.

20. New Jersey may have been uncertain as to which state’s law governed the right to wharf out because the law was that “[i]n a case of wharfing out . . . [t]he rights of a riparian owner upon a navigable stream in this country are governed by the law of the state in which the stream is located.”<sup>22</sup> Thus, New Jersey could have feared that its prior grants, leases, and conveyances applied to land that might turn out to be in Delaware, and that structures upon those lands would become subject to scrutiny under the riparian standards that Delaware applied in its state.<sup>23</sup> Whether those standards might turn out to be more rigorous than those New Jersey had applied could not be known with certainty. Because, as Justice Cardozo later noted, “New Jersey in particular has been liberal in according” to riparians “the privilege of gaining access to a stream by building wharves and piers,”<sup>24</sup> New Jersey might have wished to protect the owners of existing wharves and structures.

21. At the time the 1905 Compact was being drafted, there were, according to New Jersey’s Castagna Affidavit, only a handful of structures extending from New Jersey into Delaware. Insofar as the unresolved boundary question between the two states raised in a novel form the historic concern about purprestures and the states were concerned about which state’s law of wharfing out applied to those landowners, it may explain the distinctive language chosen by the drafters of Article VII of the 1905 Compact. The law of wharfing out concerns a question of jurisdiction over a riparian right; thus, it would explain the use of the phrase “riparian jurisdiction.” Moreover, because exercise of this riparian right under New Jersey law required a grant or lease of state-owned land, it would explain the phrase in Article VII “to make grants, leases, and conveyances of riparian lands and rights.” Such language would also have been appropriate to other riparian property rights questions, such as which state’s law governed accretions, or which state had jurisdiction to authorize diversions of water for use on riparian

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subject only to the laws which regulate that use; that the property indeed vests in the sovereign, but it vests in him for the sake of order and protection, and not for his own use, but for the use of the citizen[.]” *Id.* at \*9. For a brief historical discussion, see Moses M. Frankel, *Law of Seashore, Waters and Water Courses, Maine and Massachusetts* 125 (1969).

<sup>22</sup> 1 *Wiel* § 898, at 934 (quoting *Weems Steamboat Co. of Baltimore v. People’s Steamboat Co.*, 214 U.S. 345, 355 (1909)).

<sup>23</sup> See, e.g., *Harlan & Hollingsworth*, *supra*.

<sup>24</sup> *New Jersey v. Delaware*, 291 U.S. at 375.

lands. Those concerns would be addressed by the phrasing “riparian jurisdiction of every kind and nature.”

22. Such an arrangement would have been consistent with descriptions in the then-existing treatises (cited throughout this opinion), and the laws of New Jersey and Delaware, as to what was comprised within the category of riparian rights: e.g., the right of access to navigable depths via a wharf, the right to own accretions, or the right to divert from the river for use on riparian land.

23. Riparian law descriptions and definitions do not, however, describe the conduct that may be engaged in on riparian property. Such conduct is governed under the jurisdiction of the general police power. For example, one has a riparian right to use river water to irrigate a riparian tract, but there is no riparian right to grow marijuana or any other crop on the tract. One may have a riparian right to wharf out to navigable water so that a ship can tie up to the dock, but that does not create a riparian right to have, or not to have, gambling on the ship or dock, or to determine the safety rules for the ships that dock, whether or not they must be double-hulled, or have air-pollution controls on their emissions, for example. Similarly, nothing in the law governing the right to construct a wharf insulates activities to be engaged in on the wharf, such as those involved in the loading or unloading of particular cargoes, if they should constitute a nuisance or otherwise violate general laws for the protection of public health or safety. These are matters of general police power law governed by the sovereign that has general police power authority.

24. I have examined New Jersey’s responses to Delaware’s Requests for Admissions, as well as the riparian grants, leases, and conveyances issued by New Jersey between 1854 and 1920 discussed in the Castagna Affidavit. The distinction between that which is authorized under these exercises of riparian jurisdiction, and that which is within the scope of the general police power jurisdiction, is manifest in these documents. The various grants describing the land being transferred state that piers or other structures are to be built, and where they describe the intended uses do so in general terms, such as “he may deem proper and necessary for the improvement of his property or for the benefit of commerce”;<sup>25</sup> or “for the accommodation of vessels navigating the same, and from time to time to rebuild and repair the same as may be necessary for the improvement of his property and the benefit of commerce”;<sup>26</sup> or “to exclude the tide-water from so much of the land above described as lie under tide-water, by filling in or otherwise improving the same, and to appropriate the lands under water above described to exclusive private uses.”<sup>27</sup> These actions exercising riparian jurisdiction do not include examination or regulation of the particular activities intended to be engaged in.

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<sup>25</sup> Cited in Affidavit of Richard Castagna (reproduced as Appendix 5 to NJ Brief at 33a, ¶ (5)).

<sup>26</sup> *Id.* at 32a-33a, ¶ (4).

<sup>27</sup> *Id.* at 39a, ¶ (17).

25. The responses to Delaware's Requests for Admissions indicate a similar distinction. For example, New Jersey responded that "the grants do not expressly specify the precise business that can be carried on at any point in time"<sup>28</sup> or "the precise cargo that can be loaded or unloaded at any specific point in time."<sup>29</sup> It also stated that the authorization or restriction of any particular activity to be conducted on a wharf, pier, or like structure "would be under other State, federal or local laws, and not by the establishment of pierhead and bulkhead lines."<sup>30</sup> A person wishing to conduct a particular business activity on a wharf, in addition to receiving a riparian grant, would still have to comply with all other "applicable New Jersey laws[] and local laws."<sup>31</sup> To the best of my knowledge, the separation of authorities described in New Jersey's Responses to Requests for Admissions reflects the usual and traditional separation of the exercise of riparian rights from the exercise of state police power.

26. This distinction between riparian property law and general regulatory law has been drawn in many cases over the past century, though it has not arisen in the specific instance of two different states, one holding riparian jurisdiction and another holding general police power jurisdiction.<sup>32</sup> *Cummings v. City of Chicago*,<sup>33</sup> a case in the United States Supreme Court decided in the same period the 1905 Compact in issue here was being drafted, illustrates the separateness of the riparian realm of jurisdiction and that of the general police power, though it formally involved jurisdiction over riparian rights in the federal government and a claim of federal preemption. In that case, the United States regulated riparian landowners' wharfing out. The landowner there had complied with all the requirements of the federal permitting scheme that dealt with the building of a dock in the river, only to find that its project was blocked because it did not have an additional required permit from the City of Chicago. The riparian landowner claimed that, having complied with the wharfing out law, the further regulatory demand of the city under the police power was a violation of its property right, and the federal permitting system for wharfing out should be viewed as preemptive. Otherwise, the riparian owner suggested, it would have met all the requirements of the jurisdiction that governed riparian developments in the river and have

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<sup>28</sup> New Jersey's Responses to Delaware's First Requests for Admissions, No. 5 (filed Sept. 8, 2006).

<sup>29</sup> *Id.*, No. 9.

<sup>30</sup> *Id.*, No. 3.

<sup>31</sup> *Id.*, No. 22.

<sup>32</sup> Other than the instant case, the case of *Virginia v. Maryland*, 540 U.S. 56 (2003), and another New Jersey case involving an interstate compact with New York, see *People v. Central R.R. Co. of New Jersey*, 42 N.Y. 283, 1870 WL 7713 (1870), the division of jurisdiction between states over rivers appears to be unprecedented.

<sup>33</sup> 188 U.S. 410 (1903).



fully implemented its riparian rights, only to be frustrated by the separate police power standards of the local government. The Court held that, merely because a company that wanted to build a dock had complied with all the detailed federal riparian regulation of wharfing out that had been imposed on the Calumet River in that case, that did not mean that “no jurisdiction or authority whatever remains with the local authorities.”<sup>34</sup> The Court noted that, whatever the legitimate concerns of the federal government over the construction of wharves, the state also has its own internal police power to protect the interests of its citizens. Despite the extensive scope of the federal regulation there, and the claims that Congress had taken “possession” of the river, the Court indulged no such presumption, warning that the “river, it must be remembered, is entirely within the limits of Illinois, and the authority of the state over it is plenary.”<sup>35</sup> Emphasizing the importance to a state of retaining regulatory jurisdiction over activities within its territory, the Court said that any congressional determination to abolish such state authority “would have been manifested by clear and explicit language.”<sup>36</sup> One would expect the same standard to apply where a state is claimed to have divested itself of general police power jurisdiction over its territory.

27. The independence of the riparian and the police power realms is sharply drawn in the opinion of Justice Holmes in *Hudson County Water Co. v. McCarter*,<sup>37</sup> a case arising from New Jersey. The water company, a riparian landowner, sought to deliver to New York some water it was diverting from the Passaic River, in violation of a New Jersey law prohibiting such exports.<sup>38</sup> Justice Holmes characterized the case as one in which the water company was asserting that the anti-export law violated its riparian property rights.<sup>39</sup> The opinion is famous for its statement that

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<sup>34</sup> *Id.* at 426. A similar point was made in a New Jersey case, where a municipality challenged a riparian landowner who was making a legitimate riparian use of the shore and who refused to obtain a city permit under the police power. The court said that “[t]he authority lodged in the [state] to make grants or leases of the state’s riparian lands is not . . . inconsistent with the existence of the police power in the municipality in respect thereof.” *Ross v. Mayor & Council of Edgewater*, 115 N.J.L. 477, 487, 180 A. 866, 872 (Sup. Ct. 1935).

<sup>35</sup> *Cummings*, 188 U.S. at 426-27.

<sup>36</sup> *Id.* at 430.

<sup>37</sup> 209 U.S. 349 (1908). The named plaintiff in that case, Robert McCarter, was both New Jersey’s Attorney General and one of the New Jersey commissioners who negotiated the 1905 Compact.

<sup>38</sup> Notably, water has had a special place under the so-called dormant Commerce Clause. See *Sporhase v. Nebraska ex rel. Douglas*, 458 U.S. 941 (1982). See also *Idaho ex rel. Evans v. Oregon*, 462 U.S. 1017, 1025 (1983).

<sup>39</sup> It had been strongly argued that what the company wanted to do was not within its riparian rights at all, see *McCarter v. Hudson County Water Co.*, 70 N.J. Eq. 695, 708, 65 A.

"[a]ll rights tend to declare themselves absolute to their logical extreme."<sup>40</sup> The decision centrally rests on a recognition of the separateness of the realms of the law of property and of the police power. Whatever the company's riparian rights may have been, the decision holds, they must nonetheless pass the independent test of the police power invoked to protect "the interests of the public."<sup>41</sup> "[T]he private property of riparian proprietors cannot be supposed to have deeper roots. . . . The private right to appropriate is subject . . . to the initial limitation that it may not substantially diminish one of the great foundations of public welfare and health."<sup>42</sup> Accordingly, the domain of property rights, whatever its scope, must nonetheless be tested against the distinct demands of the police power. As Justice Holmes thus made clear, the police power embodies a jurisdiction separate and apart from the head of jurisdiction that defines property rights.<sup>43</sup>

28. In the same respect, riparian landowners who had established mills in full compliance with the riparian law<sup>44</sup> could be compelled at some later time, in response to regulatory laws designed to protect or restore fisheries, to install fish ladders to allow the passage of migratory species, because riparian landowners held their riparian rights subject to the restrictions imposed to protect public rights under police power jurisdiction.<sup>45</sup> Over the years, public interests of various

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489, 494 (Ct. Errors & Appeals 1906), *aff'd*, 209 U.S. 349 (1908), but Justice Holmes ignored those claims and used the decision to emphasize the separateness of authority over property and the authority of the police power.

<sup>40</sup> 209 U.S. at 355.

<sup>41</sup> *Id.*

<sup>42</sup> *Id.* at 356.

<sup>43</sup> "And these rights of the 'riparian owner' are not *common* rights, for they do not belong to his neighbor, who lies behind him on the main land, nor are they mere rights of adjacency to land belonging to the State, for mere adjacency to a mud flat belonging to the State lying inland would give no right in or over it; they are therefore *private* rights of the 'riparian owner' in the lands of the State lying in front of him beyond the 'shore,' which rights are his by the local common law of the State by reason of his adjacency." Opinion Concerning Riparian Rights at 8, Hon. George M. Robeson, Attorney General of New Jersey (1867).

<sup>44</sup> A dam erected for reasonable mill purposes is an incident of riparian landownership. See John Norton Pomeroy, *A Treatise on the Law of Riparian Rights* § 11, at 13 (1887); *McCarter*, 70 N.J. Eq. at 708, 65 A. at 494. But mill rights were sometimes viewed quite restrictively in light of the traditional riparian right to benefit from the continued natural flow of the stream. See, e.g., *Delaney v. Boston*, 2 Del. (Harr.) 489, 1839 WL 165, at \*4 (Super. Ct. 1839).

<sup>45</sup> See Gould § 187, at 358; Angell on Watercourses § 89, at 89; 1 Wiel § 905, at 945.

kinds have been imposed to restrict or prevent uses otherwise authorized pursuant to riparian landowners' proprietary rights.<sup>46</sup>

29. A modern state case, citing both *Hudson County* and *Cummings*, powerfully reinforces the distinction drawn in those decisions. In *Obrecht v. National Gypsum Co.*,<sup>47</sup> a riparian proprietor built a wharf in accord with its riparian rights and with the authority of the riparian permitting jurisdiction (also in that case the U.S. Corps of Engineers). But the use made of the wharf – loading and transporting gypsum rock – was challenged as a nuisance. The riparian landowner defended on the ground that it was operating pursuant to its duly permitted wharfing out riparian property right, and that the use it was making of the wharf could not be separately challenged under the state's nuisance or public trust laws. The court rejected that defense, noting the separate categories of riparian rights and public rights. Though the exercise of its riparian rights had received approval from the Corps of Engineers, which had jurisdiction to authorize “the construction of a massive and permanent loading dock . . . and the dredging of more than a mile deep channel,”<sup>48</sup> the riparian proprietor had to comply as well with state requirements for the protection of the public health and welfare. The *Obrecht* court also cited the Supreme Court's 19th-century decisions in *Yates v. Milwaukee*<sup>49</sup> and *Illinois Central Railroad v. Illinois*,<sup>50</sup> in which the Court observed that a riparian proprietor may access navigable waters and make a wharf or pier for that purpose, but nevertheless must also comply with general laws protecting public rights. *Obrecht* thus reiterates the firmly rooted principle that the entity with authority over riparian permitting deals with the limited issues of the property rights of the riparian owner and the physical extent of that right to the line of navigability, but not with the general scope of the police power.

30. The distinction between riparian rights and public rights drawn in *Obrecht*, as well as the importance to a state of issues affecting the public health and welfare, buttresses the likelihood that, insofar as the 1905 Compact may be construed as a transfer of any permanent authority by Delaware to New Jersey over waters within its boundaries, that authority would have been limited to administration of the property aspects of riparian landownership on the New Jersey shore, and

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<sup>46</sup> See, e.g., *Colberg, Inc. v. State ex rel. Dep't of Public Works*, 67 Cal. 2d 408, 432 P.2d 3 (1967) (access to navigable waters cut off by highway bridge over navigable water); *Freed v. Miami Beach Pier Corp.*, 93 Fla. 888, 899, 112 So. 841, 845 (1927) (if they become a nuisance, wharves can be removed or abated); *State v. Central Vermont Ry., Inc.*, 153 Vt. 337, 351-52, 571 A.2d 1128, 1135-36 (1989) (wharves no longer meet public trust standard).

<sup>47</sup> 361 Mich. 399, 105 N.W.2d 143 (1960).

<sup>48</sup> 361 Mich. at 405, 105 N.W.2d at 145.

<sup>49</sup> 77 U.S. (10 Wall.) 497 (1871).

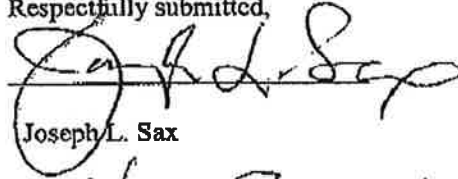
<sup>50</sup> 146 U.S. 387 (1892).

not to the far more extensive and significant administration of public rights and the general police power over the Delaware River and its environs as affected by activities related to use of wharves constructed, or to be constructed, from the New Jersey shore into the river.

Conclusion

31. For the above reasons, and assuming it was determined that New Jersey's "riparian jurisdiction" extended water-ward of the mean low-water mark on the easterly shore of the Delaware River within the Twelve-Mile Circle, it is my opinion that, in agreeing to the exercise of "riparian jurisdiction of every kind and nature, and to make grants, leases, and conveyances of riparian lands and rights" on the part of New Jersey, those who drafted and approved the 1905 Compact did not intend to withdraw from Delaware regulatory or police power authority over uses or activities of those who might in the future use, or propose to use, wharves built out from the New Jersey shoreline beyond the territorial limits of New Jersey.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Joseph L. Sax", written over a horizontal line.

Joseph L. Sax

Date: Nov. 7, 2006

**EXHIBIT A**

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**A.B. Harvard University 1957**

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Professional Experience:

Attorney, private practice, Washington, D.C. (1959-62)

Professor of Law, University of Colorado (1962-66)

Philip A. Hart Distinguished University Professor, University of Michigan (1966-86)

Counselor to the Secretary of the Interior, Deputy Assistant Secretary of the Interior (1994-1996)

Visiting Professor of Law:

University of Paris I (Panthéon-Sorbonne)

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Order of the Coif Distinguished Visitor (Texas Tech., West Virginia, Nebraska)

University of Utah

University of Colorado

Centennial Distinguished Visitor, IIT-Chicago Kent College of Law

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Honors and Awards (selected):

•Fellow, American Academy of Arts and Sciences

•Doctor of Laws (hon.), Illinois Institute of Technology

Chicago-Kent College of Law

•Professional Achievement Citation, University of Chicago Alumni Ass'n

•Elizabeth Haub Award, Free University Brussels, Gold Medalist

•Fellow, Center for Advanced Study in the Behavioral Sciences, Stanford

•Distinguished Water Attorney Award (Water Education Foundation, 2004)

- Cook Lecturer in American Institutions, University of Michigan
- Environmental Law Institute Award
- Wm. O. Douglas Legal Achievement Award, The Sierra Club
- Biennial Book Award, University of Michigan Press
- Conservationist of the Year, Audubon Society (Detroit)
- Resource Defense Award, National Wildlife Federation
- Distinguished Faculty Achievement Award, University of Michigan
- Environmental Quality Award, U.S. E.P.A.
- American Motors Conservation Award

Consultancies (selected)

In recent years, I have consulted/prepared reports/been an expert witness for: (1) United States Bureau of Reclamation; (2) Coachella Valley (California) Water District; (3) Los Angeles Department of Water and Power; (4) State of Mississippi; (5) County of Riverside, California; (6) City of Santa Cruz, California; (7) Council of Great Lakes Governors; (8) International Joint Commission (Great Lakes); (9) California State Water Resources Control Board; (10) City of Glendale, California; (11) Southern Nevada Water Authority; (12) County of Yolo, California; (13) State of Delaware (original jurisdiction suit in the U.S. Supreme Court); (14) United States (Department of State).



## EXHIBIT B

### Publications 1996-2006

#### Books

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C. J. Seitz

No. 134, Original

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In The  
**Supreme Court of the United States**

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STATE OF NEW JERSEY,

*Plaintiff,*

v.

STATE OF DELAWARE,

*Defendant.*

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**NEW JERSEY'S RESPONSES TO  
DELAWARE'S FIRST REQUESTS FOR ADMISSIONS**

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Acting Attorney General

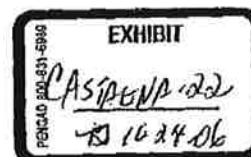
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**REQUESTS FOR ADMISSIONS**

1. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that none of those grants expressly authorized the loading or unloading of any specific type of cargo on a wharf, pier, or like structure.

**New Jersey objects to this Request because it calls for a legal conclusion and the 41 riparian grants speak for themselves. Without waiver of this objection, New Jersey denies this Request in part, insofar as use of a wharf, pier or like structure inherently includes the ability to load or unload cargo from a vessel, and the ability for a vessel that is loading or unloading cargo to reach the main navigational channel. New Jersey admits this Request in part, insofar as the grants do not specify the precise type of cargo that could be loaded or unloaded from a wharf, pier or like structure at any specific point in time.**

2. Admit that New Jersey has never issued a riparian grant, whether inside or outside the twelve-mile circle, that expressly authorized the loading or unloading of any specific type of cargo on a wharf, pier, or like structure.

**New Jersey objects to this Request because it calls for a legal conclusion and the State tidelands grants issued by New Jersey speak for themselves. In addition, the Request is overbroad because it applies to all riparian grants issued by New Jersey, including thousands of grants outside of the twelve-mile circle. Without waiver of this objection, New Jersey denies this Request, insofar as the use of a wharf, pier or like structure inherently includes the ability**

**to load or unload cargo from a vessel, and the ability of a vessel that is loading or unloading cargo to reach the main navigational channel.**

3. Admit that the establishment of pierhead and bulkhead lines by New Jersey agencies, boards, or commissions (*see, e.g., Castagna Aff. ¶ 8(7) & (14)*) did not thereby authorize any particular activity to be conducted on a wharf, pier, or like structure.

New Jersey objects to this Request because it calls for a legal conclusion. Without waiver of this objection, New Jersey denies this Request in part, insofar as the use of a wharf, pier, or like structure inherently includes the ability to load or unload cargo from vessels, and the ability of a vessel that has loaded or unloaded cargo to reach the main navigational channel. Further, the purpose of such lines is to facilitate navigation. The authorization of any particular activity or the restriction thereof would be under other State, federal or local laws, and not by the establishment of pierhead and bulkhead lines. New Jersey admits this Request in part, insofar as pierhead and bulkhead lines are not established to allow or disallow particular activities on a wharf, pier or like structure.

4. Admit that the proposed Crown Landing pier would be the longest wharf, pier, or similar structure emanating from New Jersey within the twelve-mile circle.

New Jersey objects to this Request because "similar structure" is not defined and therefore the Request is vague. In addition, the Request calls for speculation concerning pending or proposed projects, which the Special Master has ruled are not a subject of relevant inquiry. Without waiver of this objection, New Jersey denies the request, because pierhead



and bulkhead lines already established by New Jersey in the Twelve-Mile Circle would allow longer piers, wharves or other structures in certain locations than the proposed Crown Landing pier. In addition, an outfall extension currently under consideration and proposed by DuPont at its facility within the Twelve Mile Circle may be approved to be longer than the proposed Crown Landing pier.

5. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that none of those grants expressly authorized the carrying on of any particular business.

New Jersey objects to this Request because it calls for a legal conclusion and the 41 riparian grants speak for themselves. Without waiver of this objection, New Jersey partially denies the Request, insofar as use of the granted area inherently includes the ability to load or unload cargo from vessels, and the ability of a vessel that has loaded or unloaded cargo to reach the main navigational channel. New Jersey partially admits the Request, insofar as the grants do not expressly specify the precise business that can be carried on at any point in time.

6. Admit that New Jersey has never issued a riparian grant, whether inside or outside the twelve-mile circle, that expressly authorized the carrying on of any particular business.

New Jersey objects to this Request because it calls for a legal conclusion and the riparian grants speak for themselves. In addition, the Request is overbroad, because it applies to the thousands of grants issued outside of the twelve-mile circle. Without waiver of this objection, New Jersey denies the Request, insofar as use of the granted area inherently

**includes the ability to load or unload cargo from vessels, and the ability of a vessel that has loaded or unloaded cargo to reach the main navigational channel.**

7. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that none of those grants expressly authorized the offloading of natural gas, whether in liquefied or non-liquefied form.

**New Jersey objects to this Request because it calls for a legal conclusion and the grants speak for themselves. Without waiver of this objection, New Jersey denies the request in part, insofar as use of the granted area inherently includes the ability of vessels to load or unload cargo and the ability of a vessel that has loaded or unloaded cargo to reach the main navigational channel. New Jersey admits the Request in part, insofar as the grants do not specify that natural gas can be offloaded.**

8. Admit that New Jersey has never issued a riparian grant, whether inside or outside the twelve-mile circle, that expressly authorized the offloading of natural gas, whether in liquefied or non-liquefied form.

**New Jersey objects to this Request because it calls for a legal conclusion and the grants speak for themselves. In addition, the Request is overbroad because it applies to thousands of grants issued outside of the twelve-mile circle. Without waiver of this objection, New Jersey denies the request insofar as use of the granted area inherently includes the ability of vessels**

**to load or unload cargo and the ability of a vessel that has loaded or unloaded cargo to reach the main navigational channel.**

9. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that none of those grants expressly authorized the offloading of flammable cargo.

**New Jersey objects to this Request because it calls for a legal conclusion and the grants speak for themselves. Without waiver of this objection, New Jersey partially denies the request insofar as use of the granted area inherently includes the ability of vessels to load or unload cargo and the ability of a vessel that has loaded or unloaded cargo to reach the main navigational channel. New Jersey partially admits the Request, insofar as the grants do not specify the precise cargo that can be loaded or unloaded at any specific point in time.**

10. Admit that New Jersey has never issued a riparian grant, whether inside or outside the twelve-mile circle, that expressly authorized the offloading of flammable cargo.

**New Jersey objects to this Request because it calls for a legal conclusion and the grants speak for themselves. In addition, the Request is overbroad because it applies to thousands of grants issued outside of the twelve-mile circle. Without waiver of this objection, New Jersey denies the request insofar as use of the granted area inherently includes the ability of vessels to load or unload cargo and the ability of a vessel that has loaded or unloaded cargo to reach the main navigational channel.**

11. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that none of those grants excused compliance by the grantee (or any other person) with any other New Jersey laws.

**Admitted.**

12. Admit that New Jersey has never issued a riparian grant, whether inside or outside the twelve-mile circle, that excused compliance by the grantee (or any other person) with any other New Jersey laws.

**Admitted.**

13. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that none of those grants excused compliance by the grantee (or any other person) with New Jersey's Coastal Zone Act.

**Denied in part, insofar as New Jersey does not have a "Coastal Zone Act."**

**Admitted in part, insofar as New Jersey has a Waterfront Development Law, Coastal Area Facility Review Act, Coastal Wetlands Act, and other laws that may be applicable to the construction of improvements on or development of New Jersey's shoreline within the Twelve Mile Circle.**

14. Admit that New Jersey has never issued a riparian grant, whether inside or outside the twelve-mile circle, that excused compliance by the grantee (or any other person) with New Jersey's Coastal Zone Act.

**Admitted in part, insofar as grants do not excuse compliance by the grantee (or any other person) with New Jersey's coastal zone management rules, which are set forth at N.J.A.C. 7:7E and 7:7 and used to implement various New Jersey laws, as specified therein. Denied in part, insofar as New Jersey does not have a "Coastal Zone Act."**

15. Admit that New Jersey's Coastal Zone Act applies to a person regardless of whether the person has a riparian grant.

**New Jersey objects to this Request because it calls for a legal conclusion. Without waiver of this objection, New Jersey admits the Request in part, insofar as persons who engage in regulated activities must comply with New Jersey's coastal zone management rules, which are set forth at N.J.A.C. 7:7E and 7:7 and used to implement various New Jersey laws, as specified therein. The Request is partially denied, insofar as New Jersey does not have a "Coastal Zone Act."**

16. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that none of those grants excused compliance by the grantee (or any other person) with New Jersey's Water Pollution Control Act, N.J. Stat. Ann. §§ 58:10A-1 *et seq.* ("Water Pollution Control Act").

**Admitted.**

17. Admit that New Jersey has never issued a riparian grant, whether inside or outside the twelve-mile circle, that excused compliance by the grantee (or any other person) with New Jersey's Water Pollution Control Act.

**Admitted.**

18. Admit that New Jersey's Water Pollution Control Act applies to a person regardless of whether the person has a riparian grant.

**New Jersey objects to this Request because it calls for a legal conclusion. Without waiver of this objection, New Jersey admits the Request, insofar as persons who engage in activities subject to New Jersey's Water Pollution Control Act must comply with the Act.**

19. With respect to each of the 41 riparian grants from New Jersey described in paragraph S(1)-(44) of the Castagna Affidavit, admit that none of those grants excused compliance by the grantee (or any other person) with New Jersey's Coastal Area Facility Review Act, N.J.S.A. §§ 13:19-1 *et seq.* ("CAFRA").

**Admitted, to the extent that CAFRA is applicable within the Twelve Mile Circle.**

20. Admit that New Jersey has never issued a riparian grant, whether inside or outside the twelve-mile circle, that excused compliance by the grantee (or any other person) with CAFRA.

**Admitted.**

21. Admit that CAFRA applies to a person regardless of whether the person has a riparian grant.

**New Jersey objects to this Request because it calls for a legal conclusion. Without waiver of this objection, New Jersey admits the Request insofar as persons who engage in activities subject to CAFRA must comply with CAFRA.**

22. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that a person wishing to conduct a particular business activity on a wharf, in addition to having received the riparian grant, would still have to comply with all other applicable New Jersey or local laws, including but not limited to licensing and permitting requirements.

**New Jersey objects to this Request because it calls for a legal conclusion and for speculation. In addition, the Request appears to refer to future activities, which the Special Master has determined are not relevant to a determination of the issues regarding the 1905 Compact. Without waiver of this objection, New Jersey admits this Request as to applicable New Jersey laws, and local laws, to the extent that local laws are not preempted or superseded by state or federal laws.**

23. Admit that a person wishing to conduct a particular business activity on a wharf, in addition to having received a riparian grant from New Jersey, whether inside or outside the twelve-mile circle, would still have to comply with all other applicable New Jersey or local laws, including but not limited to licensing and permitting requirements.

**New Jersey objects to this Request because it calls for a legal conclusion and for speculation. In addition, the Request appears to refer to future activities, which the Special Master has determined are not relevant to a determination of the issues regarding the 1905 Compact. Without waiver of this objection, New Jersey admits this Request as to applicable New Jersey laws, and to local laws, to the extent that those local laws are not preempted or superseded by state or federal laws.**

24. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that a person wishing to conduct a particular business activity on a wharf, in addition to having received the riparian grant, would still have to comply with all other applicable New Jersey or local health and safety laws.

**New Jersey objects to this Request because it calls for a legal conclusion and for speculation. In addition, the Request appears to refer to future activities, which the Special Master has determined are not relevant to a determination of the issues regarding the 1905 Compact. Further, New Jersey objects because this Request is duplicative of Request 23. Without waiver of these objections, New Jersey admits this Request as to applicable New Jersey laws, and to local laws, to the extent that local laws are not preempted or superseded by state or federal laws.**

25. Admit that a person wishing to conduct a particular business activity on a wharf, in addition to having received a riparian grant from New Jersey, whether inside or outside the



twelve-mile circle, would still have to comply with all other applicable New Jersey or local health and safety laws.

**New Jersey objects to this Request because it calls for a legal conclusion and for speculation. In addition, the Request appears to refer to future activities, which the Special Master has determined are not relevant to a determination of the issues regarding the 1905 Compact. Further, New Jersey objects to this Request as it is duplicative of Request 23. Without waiver of these objections, New Jersey admits this Request as to applicable New Jersey laws, and local laws, to the extent that local laws are not preempted or superseded by state or federal laws.**

26. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that a person wishing to conduct a particular business activity on a wharf, in addition to having received the riparian grant, would still have to comply with all other applicable New Jersey or local wage and hour laws.

**New Jersey objects to this Request because it calls for a legal conclusion and for speculation. In addition, the Request appears to refer to future activities, which the Special Master has determined are not relevant to a determination of the issues regarding the 1905 Compact. Further, New Jersey objects to this Request as it is duplicative of Request 23. Without waiver of these objections, New Jersey admits this Request as to applicable New Jersey laws, and to local laws, to the extent that local laws are not preempted or superseded by state or federal laws.**

27. Admit that a person wishing to conduct a particular business activity on a wharf, in addition to having received a riparian grant from New Jersey, whether inside or outside the twelve-mile circle, would still have to comply with all other applicable New Jersey or local wage and hour laws.

**New Jersey objects to this Request because it calls for a legal conclusion and for speculation. In addition, the Request appears to refer to future activities, which the Special Master has determined are not relevant to a determination of the issues regarding the 1905 Compact. Further, New Jersey objects to this Request as it is duplicative of Request 23. Without waiver of these objections, New Jersey admits this Request as to applicable New Jersey laws, and local laws, to the extent that local laws are not preempted or superseded by state or federal laws.**

28. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that a person wishing to conduct a particular business activity on a wharf, in addition to having received the riparian grant, would still have to comply with all other applicable New Jersey or local laws prohibiting, restricting, or regulating the means of transport of cargo, such as gas, oil, food, cigarettes, alcohol, pesticides, or drugs.

**New Jersey objects to this Request because it calls for a legal conclusion and for speculation. In addition, the Request appears to refer to future activities, which the Special Master has determined are not relevant to a determination of the issues regarding the 1905 Compact. Further, New Jersey objects to this Request as it is duplicative of Request 23. Without waiver of these objections, New Jersey admits this Request as to applicable New**

**Jersey laws, and to local laws, to the extent that local laws are not preempted or superseded by state or federal laws.**

29. Admit that a person wishing to conduct a particular business activity on a wharf, in addition to having received a riparian grant from New Jersey, whether inside or outside the twelve-mile circle, would still have to comply with all other applicable New Jersey laws prohibiting, restricting, or regulating the means of transport of cargo, such as gas, oil, food, cigarettes, alcohol, pesticides, or drugs.

**New Jersey objects to this Request because it calls for a legal conclusion and for speculation. In addition, the Request appears to refer to future activities, which the Special Master has determined are not relevant to a determination of the issues regarding the 1905 Compact. Further, New Jersey objects to this Request as it is duplicative of Request 23. Without waiver of these objections, New Jersey admits this Request as to applicable New Jersey laws, and to local laws, to the extent that local laws are not preempted or superseded by state or federal laws.**

30. With respect to each of the 41 riparian grants from New Jersey described in paragraph 8(1)-(44) of the Castagna Affidavit, admit that none of those grants excused compliance by the grantee (or any other person) with any "other required federal, New Jersey, or local" permitting requirements or laws (Castagna Aff. ¶7).

**Admitted, as to federal and State permitting requirements and laws, and to such local laws, to the extent that such local laws are not preempted or superseded by state or federal laws.**

31. Admit that New Jersey has never issued a riparian grant, whether inside or outside the twelve-mile circle, that excused compliance by the grantee (or any other person) with any "other required federal, New Jersey, or local" permitting requirements or laws (Castagna Aff. ¶7).

**Admitted, as to federal and State permitting requirements and laws, and to such local laws, to the extent that such local laws are not preempted or superseded by state or federal laws.**

32. Admit that, before 1978, New Jersey did not condition any of its riparian grants, including those described in the Castagna Affidavit within the twelve-mile circle, "on the applicant's obtaining a New Jersey regulatory permit, together with all other required federal, New Jersey and local regulatory permits" (Castagna Aff. ¶7).

**Denied. Recipients of New Jersey riparian grants always have been subject to all applicable federal and state approvals, as well as to all applicable, non-preempted local laws. In addition, before 1914, riparian grants issued by New Jersey functioned as State of New Jersey permits for riparian structures within the granted area. In 1914, the Waterfront Development Law, which requires a state permit for waterfront development, was adopted and became applicable to development within any granted area. N.J.S.A. 12:5-3. In 1970 the**

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**Coastal Wetlands Act (N.J. Stat., Ann. 13:9A), which requires a permit for regulated activities in coastal wetlands, was adopted.**

33. Admit that, in the map appended to the Castagna Affidavit (*see* N.J. App. 54a), which provides a distance scale at the bottom of the map, the riparian grants depicted are not actually drawn to the scale provided on the map. (For example, number 43 on the map appears to suggest, based upon the map scale, that the grant extends at least one-fifth of a mile (1,056 feet) beyond the mean low-water mark, while paragraph 8(43) of the Castagna Affidavit states that the grant extends only "35 feet beyond the mean low water line.").

**Admitted; the scale never was intended to apply to the depicted grants.**

34. Admit that, with respect to the riparian grants described in the following subparagraphs of paragraph 8 of the Castagna Affidavit, no wharf, pier, or like structure has ever existed on the submerged land at issue since the time of the grant:

**New Jersey admits the request in part, insofar as structures did or did not appear on aerial photography taken of certain of the granted areas in the years stated in a. through x. below. New Jersey denies the request in part, insofar as it has no further information at this time regarding the existence of structures at times other than the dates of the aerial photography. In addition, New Jersey notes that some upland owners may put seasonal docks in their granted areas, and may have removed them at the time of the aerial photography.**

**a. (3) 1870 Walker**

**b. (8) 1883 Kent - No structures show on aerial photography from 1930, 1951, 1962, 1979, 2000, 2002.**

- c. (9) 1891 Brown - No structures show on aerial photography from 1940, 1951, 1962, 1977, 1979, 2002.
- d. (10) 1891 DuPont - A pier is shown on this site in 1940, 1977, and 1979 aerial photography.
- e. (13) 1916 Barber lease - No structures show on aerial photography from 1946, 1962, 1977.
- f. (16) 1916 DuPont
- g. (17) 1917 DuPont - Pilings and a dock are shown on this site in aerial photography from 1940, 1951, 1977, 1979.
- h. (18) 1918 DuPont
- I. (24) 1925 Acton - No structures show on aerial photography from 1940, 1951, 1962, 1977, 1979.
- j. (25) 1925 Lower Penns Neck - No structures show on aerial photography from 1940, 1951, 1962, 1977, 1979.
- k. (26) 1925 Acton - No structures show on aerial photography from 1940, 1951, 1962, 1977, 1979.
- l. (28) 1929 Locuson - No structures shown on aerial photography from 1930, 1940, 1951, 1962, 1971, 1977, 1979, and 2002.
- m. (29) 1929 Locuson - No structures shown on aerial photography from 1930, 1940, 1951, 1962, 1971, 1977, 1979, and 2002.
- n. (30) 1929 Locuson - No structures shown on aerial photography from 1930, 1940, 1951, 1962, 1971, 1977, 1979, and 2002.
- o. (31) 1929 Locuson - No structures shown on aerial photography from 1930, 1940, 1951, 1962, 1971, 1977, 1979, and 2002.
- p. (32) 1929 Locuson - No structures shown on aerial photography from 1930, 1940, 1951, 1962, 1971, 1977, 1979, and 2002.
- q. (33) 1929 DuPont - No structures shown on aerial photography from 1930, 1940, 1951, 1962, 1971, 1977, 1979, and 2002.
- r. (34) 1929 De. River Power Co. license - No structures appear in 1940 aerial photography. Three concrete ice breakers appear in 1951, 1977, 1979 aerial photography.
- s. (36) 1935 Strickler - No structures show on 1940, 1946, 1962, 1977 aerial photography.
- t. (37) 1943 DuPont - A dock is visible on 1962, 1971, 1977, 1979, and 2002 aerial photography.
- u. (39) 1960 DuPont - No structures show on 1940, 1951 aerial photography. A pier is shown on 1977 and 1979 aerial photography.
- v. (40) 1967 DuPont - No structures shown in 1940, 1951 aerial photography. A large wharf is seen next to the pier referenced in (39), in 1977 and 1979 aerial photography.
- w. (42) 1999 Bergmann - No structures show in 1940, 1951, 1962, 1977, 1979 aerial photography. A structure is shown in 2000 and 2002 aerial photography.
- x. (43) 2000 Tp. of Pennsville - No structures show in 1930, 1951, 1977, 2002 aerial photography.

35. Admit that, with respect to the 41 riparian grants described in paragraph 8(1)-(44) of the Castagna Affidavit, there are only six wharves, piers, or like structures standing today that cross the boundary line into Delaware, specifically:

a. Fort Mott State Park (*see* Castagna Aff. ¶8(44))

b. Keystone Urban Renewal Limited Partnership (*see* Castagna Aff. ¶8(41))

c. Conectiv Energy (grant to the former Franklin Real Estate Company for the Deep Water Power Plant (*see* Castagna Aff. ¶8(27)))

d. Delaware & New Jersey Ferry Company (Originally granted to William D. Acton and the Fogg and Hires Company under two separate grants) (*see* Castagna Aff. ¶8(20, 22))

e. E.I. DuPont de Nemours & Co. (*see* Castagna Aff. ¶8(15))

f. PennsGrove Pier (Fenwick Commons, LLC, was awarded a grant in 2004 to refurbish this currently dilapidated pier) (*see* Castagna Aff. ¶8(2, 12))

**Denied, based on the facts stated in response to Request 34, above.**

36. Admit that, of the six wharves or like structures standing today described in the previous request, Delaware has issued permits for four of them, specifically:

- a. Fort Mott State Park (*see* Castagna Aff. ¶8(44))
- b. Keystone Urban Renewal Limited Partnership (*see* Castagna Aff. ¶8(41))
- c. E.I. DuPont de Nemours & Co. (*see* Castagna Aff. ¶8(15))
- d. Fenwick Commons (formerly PennsGrove Pier) (*see* Castagna Aff. ¶8(2, 12))

**New Jersey objects to this Request to the extent that it implies there are only six wharves or like structures extending from the New Jersey shoreline into the Delaware River beyond the low water line, within the Twelve Mile Circle, and because "like structures" is not defined and the Request is vague. Without waiver of this objection, the Request is partially denied, insofar as the DuPont and Fenwick Commons Delaware leases were received from Delaware under protest, and based on the facts stated in response to Request 34, above, and is otherwise partially admitted.**

37. Admit that the wharf situated on the land subject to the grant by New Jersey to the Delaware & New Jersey Ferry Company (originally granted to William D. Acton and the Fogg and Hires Company under two separate grants (*see* Castagna Aff. ¶8(20, 22)) is dilapidated and unused.

**New Jersey objects to this Request as vague and because the term "dilapidated" is not defined. Thus the Request calls for a subjective judgment, not confirmation or denial of an issue of fact. Without waiver of this objection, New Jersey partially admits this request insofar as the pier at the end of the granted area currently appears to be dilapidated. New Jersey denies the Request in part because it does not have knowledge or information about whether the wharf is unused.**



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38. Admit that the wharf situated on the land subject to the grant by New Jersey to Conectiv Energy (originally granted to the former Franklin Real Estate Company for the Deep Water Power Plant (*see* Castagna Aff ¶8(27)) extends less than 100 feet into Delaware beyond the low-water mark on the New Jersey shore.<sup>1</sup>

**New Jersey admits this Request to the extent that the wharf or dock appears to extend roughly 100 feet waterward of the bulkhead.**

39. Admit that, since the 1935 decree in *New Jersey v. Delaware II*, New Jersey has issued only nine riparian grants within the twelve-mile circle (*see* Castagna Aff. ¶8(36)-(44)).

**New Jersey objects to this Request because it includes the term “only” and thus calls for a subjective judgment rather than a confirmation or denial of fact. Without waiver of this objection, the Request is denied to the extent that it implies that New Jersey’s rights are limited by the number of grants issued; the State has always had the right to approve grants for structures anywhere along the entire Twelve Mile Circle shoreline, and has consistently asserted that right. Without waiver of these objections, the Request is otherwise admitted.**

40. Admit that, since Delaware enacted its first subaqueous lands statute in 1961, New Jersey has issued only five riparian grants within the twelve-mile circle (*see* Castagna Aff. ¶8(40)-(44)).

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<sup>1</sup>See, e.g., <http://maps.google.com/maps?f=q&hl=en&q=pennsville,+nj&ie=UTF8&ll=39.68382,-75.509478&spn=0.005689,0.013475&t=h&om=1>

**New Jersey objects to this Request because it includes the term “only” and thus calls for a subjective judgment rather than a confirmation or denial of fact. Without waiver of this objection, the Request is denied to the extent that it implies that New Jersey’s rights are limited by the number of grants issued; the State has always had the right to approve grants for structures anywhere along the entire Twelve Mile Circle shoreline, and has consistently asserted that right. Without waiver of these objections, the Request is otherwise admitted.**

41. Admit that, since Delaware enacted its Coastal Zone Management Act in 1971, New Jersey has issued only four riparian grants within the twelve-mile circle (*see* Castagna Aff. ¶8(41)-(44)).

**New Jersey objects to this Request because it includes the term “only” and thus calls for a subjective judgment rather than a confirmation or denial of fact. Without waiver of this objection, the Request is denied to the extent that it implies that New Jersey’s rights are limited by the number of grants issued; the State has always had the right to approve grants for structures anywhere along the entire Twelve Mile Circle shoreline, and has consistently asserted that right. Without waiver of these objections, the Request is otherwise admitted.**

42. Admit that, since Delaware enacted its Coastal Zone Management Act in 1971, the four riparian grants issued by New Jersey were for projects that did not violate Delaware's Coastal Zone Management Act.

**New Jersey objects to this Request because it calls for legal conclusions and responding to the Request would require New Jersey to engage in legal analyses of Delaware law and in a substantive review of the submitted applications for riparian grants, rather than to confirm**

or deny an issue of fact. Further, New Jersey is unable to admit or deny the Request, based on insufficient knowledge.

43. With respect to the "riparian rights of property owners in New Jersey in 1905, or shortly thereafter, rights which continue to be in effect to the present day" (Castagna Aff. ¶5), admit that such "riparian rights of property owners" did not include a riparian right to operate a casino on a wharf, pier, or like structure.

New Jersey objects to this Request because it calls for a legal conclusion rather than a confirmation or denial of an issue of fact. In addition, the Request calls for speculation and is not relevant to the issues surrounding the Compact of 1905 as set forth by the Special Master, since it is related to potential future projects, which have been determined to be irrelevant to interpreting the Compact. Further, riparian rights do not by themselves exclude any business. Rather, restrictions may exist by virtue of other federal, State and local laws. Casino-related facilities exist on piers in Atlantic City, New Jersey since gambling was approved in Atlantic City, and similarly exist elsewhere on and tied up to piers in other States. Without waiver of these objections, the Request is partially admitted insofar as the Castagna affidavit does not specifically identify the right to operate a casino on a wharf, pier or a like structure, but is otherwise denied in part, insofar as riparian rights do not exclude a right to operate any business.

44. With respect to the "riparian rights of property owners in New Jersey in 1905, or shortly thereafter, rights which continue to be in effect to the present day" (Castagna Aff. ¶5), admit that

such "riparian rights of property owners" did not include a riparian right to operate or manage a condominium on a wharf, pier, or like structure.

New Jersey objects to this Request because it calls for a legal conclusion rather than a confirmation or denial of an issue of fact. In addition, the Request calls for speculation and is not relevant to the issues surrounding the Compact of 1905 as set forth by the Special Master, since it is related to potential future projects, which have been determined to be irrelevant to interpreting the Compact. Further, riparian rights do not by themselves exclude rights to operate or manage a condominium, on a wharf pier or other structure. Rather, restrictions may exist pursuant to other federal, State or local laws. Condominiums do exist in New Jersey on piers where permitted, and similarly exist in other States. Without waiver of these objections, the request is partially admitted insofar as the Castagna affidavit does not specifically identify the right to operate or manage a condominium on a wharf, pier or like structure, but is otherwise denied in part, insofar as riparian rights do not exclude a right to operate any business.

45. With respect to the "riparian rights of property owners in New Jersey in 1905, or shortly thereafter, rights which continue to be in effect to the present day" (Castagna Aff. ¶5), admit that such "riparian rights of property owners" did not include a riparian right to operate a mining operation on a wharf, pier, or like structure.

New Jersey objects to this Request because it calls for a legal conclusion rather than for confirmation or denial of an issue of fact. In addition, the Request calls for speculation and is not relevant to the issues surrounding the Compact of 1905 as set forth by the Special

Master, since it is related to potential future projects, which have been determined to be irrelevant to interpreting the Compact. Further, riparian rights do not by themselves exclude a right to operate any business. Rather, restrictions may exist by virtue of federal, State or local laws. Without waiver of these objections, the Request is admitted in part, insofar as the Castagna affidavit does not specifically identify the right to operate a mining operation on a wharf, pier, or like structure, but is otherwise partially denied insofar as riparian rights do not exclude a right to operate any business.

46. With respect to the "riparian rights of property owners in New Jersey in 1905, or shortly thereafter, rights which continue to be in effect to the present day" (Castagna Aff. ¶5), admit that such "riparian rights of property owners" did not include a riparian right to operate a heliport or airport on a wharf, pier, or like structure.

New Jersey objects to this Request because it calls for a legal conclusion rather than for confirmation or denial of an issue of fact. In addition, the Request calls for speculation and is not relevant to the issues surrounding the Compact of 1905 as set forth by the Special Master, since it is related to potential future projects, which have been determined to be irrelevant to interpreting the Compact. Further, riparian rights do not by themselves exclude a right to operate any business. Rather, restrictions may exist by virtue of federal, State or local laws. Without waiver of these objections, the Request is partially admitted insofar as the Castagna affidavit does not specifically identify the right to operate a heliport or airport on a wharf, pier, or like structure, but is otherwise denied in part insofar as riparian rights do not exclude a right to operate any business.

47. With respect to the "riparian rights of property owners in New Jersey in 1905, or shortly thereafter, rights which continue to be in effect to the present day" (Castagna Aff. ¶5), admit that such "riparian rights of property owners" did not include a riparian right to operate a restaurant on a wharf, pier, or like structure.

**New Jersey objects to this Request because it calls for a legal conclusion rather than for confirmation or denial of an issue of fact. In addition, the Request calls for speculation and is not relevant to the issues surrounding the Compact of 1905 as set forth by the Special Master, since it is related to potential future projects, which have been determined to be irrelevant to interpreting the Compact. Further, riparian rights do not by themselves exclude a right to operate any business. Those restrictions exist by virtue of federal, State or local laws. Without waiver of these objections, the Request is partially admitted to the extent that the Castagna affidavit does not specifically include the right to operate a restaurant on a pier, wharf, or like structure, and partially denied insofar as riparian rights do not exclude a right to operate any business.**

48. With respect to the "riparian rights of property owners in New Jersey in 1905, or shortly thereafter, rights which continue to be in effect to the present day" (Castagna Aff. ¶5), admit that such "riparian rights of property owners" did not include a riparian right to operate a bar or night club on a wharf, pier, or like structure.

**New Jersey objects to this Request because it calls for a legal conclusion rather than for confirmation or denial of an issue of fact. In addition, the Request calls for speculation and is not relevant to the issues surrounding the Compact of 1905 as set forth by the Special**

---

**Master, since it is related to potential future projects, which have been determined to be irrelevant to interpreting the Compact. Further, riparian rights do not by themselves exclude a right to operate any business. Those restrictions exist by virtue of federal, State or local laws. Without waiver of these objections, the Request is partially admitted to the extent that the Castagna affidavit does not specifically include the right to operate a bar or night club on a wharf, pier, or like structure, and denied in part insofar as riparian rights do not exclude a right to operate any business.**

49. Admit that, under New Jersey's interpretation of the 1905 Compact, Delaware received no specific benefit in exchange for giving New Jersey riparian jurisdiction over Delaware's submerged lands on the eastern half of the Delaware River.

**New Jersey objects to this Request, because it states that New Jersey was given riparian jurisdiction over "Delaware's submerged lands." As of 1905, the boundary was not established, and thus neither State had an established right of jurisdiction or an established ownership of the submerged lands in question. Without waiver of this objection, New Jersey denies the Request. The Compact of 1905 benefitted both states by ending years of litigation and resolving certain jurisdictional and other issues.**

50. Admit that the drafters of the 1905 Compact were familiar with the Compact of 1834 between New Jersey and New York.

**New Jersey denies this Request. There is no evidence in the record provided by either New Jersey or Delaware to support a claim that the drafters of the Compact of 1905 knew of**

**the content of the Compact of 1834 or utilized or relied upon it in any manner in drafting the 1905 Compact.**

51. Admit that New Jersey has not issued all of the necessary permits for the Crown Landing facility either to begin construction or to operate.

**Admitted, but not relevant to this litigation.**

52. Admit that, before New Jersey filed this litigation in July 2006, New Jersey's Office of Dredging and Sediment Technology advised BP on February 4, 2005, that "activities taking place from the mean low water line ... offshore are located in the State of Delaware and therefore are subject to Delaware Coastal Zone Management Regulations." Letter from David Q. Risilia, ODST, to David Blaha, Environmental Resources Management (Feb. 4, 2005)(Del. App. 85).

**Admitted in part, insofar as the letter of February 4, 2005 contains the statement quoted. Denied in part, insofar as the quoted statement was corrected in a May 24, 2005 letter, which letter also was sent from the Office of Dredging and Sediment Technology to BP, before New Jersey filed this litigation.**

53. Admit that no permit for discharge into the Delaware River within the twelve-mile circle may be issued under EPA regulations by New Jersey when the imposition of permit conditions for the discharge cannot ensure compliance with the applicable water quality requirements of all affected states.



**New Jersey objects to this Request because it calls for a legal conclusion and for speculation, and is irrelevant. The Request does not relate to any of the issues identified by the Special Master and is not relevant to determining the parties' rights under the Compact of 1905 or to interpreting that Compact. Rather, the Request relates to a hypothetical project that may be proposed within the Twelve-Mile Circle in the future. Without waiving this objection, New Jersey denies this statement, to the extent that it deviates from the provisions set forth in the applicable regulations, 40 C.F.R. 122.4(c) and 40 C.F.R. 123.44(c)2 and in the applicable federal law, Section 402(b)(5) of the Clean Water Act (33 U.S.C. 1342(b)(5)).**

54. Admit that, within the twelve-mile circle, New Jersey has no riparian jurisdiction over ships or boats in Delaware territory in the Delaware River.

**New Jersey objects to and cannot admit or deny this Request because Delaware has not defined the term "riparian jurisdiction" as used in this request and the Request calls for a legal conclusion, not confirmation or denial of a fact. Without waiver of this objection, New Jersey asserts that it has authority to enforce federal law relating to vessels traveling on any portion the Delaware River, including the Twelve Mile Circle; to enforce New Jersey criminal law on any portion the Delaware River, including the Twelve Mile Circle; and to take such action as necessary to prevent imminent loss of life or bodily harm on any portion the Delaware River, including within the Twelve Mile Circle; and has jurisdiction over boats fastened to a dock or pier extending from the New Jersey shoreline into the Delaware River.**

55. Admit that, within the twelve-mile circle, New Jersey has no riparian jurisdiction over ships or boats in Delaware territory in the Delaware River that are not fastened to a wharf emanating from New Jersey.

**New Jersey objects to and cannot admit or deny this Request for Admission, because Delaware has not defined the term "riparian jurisdiction" as used in this request and because it calls for a legal conclusion. Without waiver of this objection, New Jersey asserts that it has authority to enforce federal law relating to ships or boats traveling on any portion the Delaware River, including the Twelve Mile Circle; that it has authority to enforce New Jersey criminal law on any ship or boat in any portion the Delaware River, including the Twelve Mile Circle; and that it may take action with respect to any ship or boat or occupant therein on any portion the Delaware River, including the Twelve Mile Circle, as necessary to prevent imminent loss of life or bodily injury.**

56. Admit that New Jersey may not under EPA regulations issue a permit for discharge into the Delaware River within the twelve-mile circle unless Delaware water quality requirements are satisfied or Delaware agrees to waive those requirements.

**New Jersey objects to this Request because it calls for a legal conclusion and for speculation, and is irrelevant. The Request is not related to any of the issues identified by the Special Master, and is not relevant to determining the parties' rights under the Compact of 1905 or the meaning of the Compact; rather, the Request relates to a hypothetical project that may be presented within the Twelve-Mile Circle in the future. Without waiver of this objection, New Jersey denies this Request for Admission to the extent that it deviates from the**

provisions of the applicable federal regulations, 40 C.F.R. 122.4(c) and 40 C.F.R. 123.44(c)(2), and from the provisions of the applicable federal statute, Section 402(b)(5) of the Clean Water Act.

57. Admit that Delaware is a participating and voting member of the Delaware River Basin Commission ("DRBC").

**Admitted.**

58. Admit that New Jersey is a participating and voting member of the DRBC.

**Admitted.**

59. Admit that all discharges into the Delaware River within the twelve-mile circle must receive authorization (also known as a "docket") from the DRBC.

**Admitted in part, insofar as this Request for Admission refers to new discharges; denied in part, insofar as the Request refers to applications to renew discharges or to discharges from sources or entities that are not subject to DRBC jurisdiction.**

60. Admit that all water withdrawals by New Jersey from the Delaware River within the twelve-mile circle must receive authorization (also known as a "docket") from the DRBC.

**Partially denied, insofar as DRBC's jurisdiction with respect to water withdrawals from the Delaware River by New Jersey is limited to withdrawals of 100,000 gallons or more per day. New Jersey partially admits the Request insofar as withdrawals of 100,000 gallons**

or more a day must receive DRBC authorization, in addition to authorization from New Jersey.

61. Admit that Delaware has regulated every pier and/or wharf specifically identified in the Affidavit of Kevin Broderick, dated June 16, 2005 (N.J. App. 66a-72a).

Admitted in part, as to the Keystone Cogeneration pier and the Fort Mott pier. Denied in part, as to the DuPont pier existing in 1982, because the documents in the possession of New Jersey, including those produced by Delaware and by DuPont de Nemours to Delaware and New Jersey, do not evidence any regulation by Delaware of the DuPont pier that existed in 1982.

62. Admit that New Jersey's Coastal Zone Management Program and Final Environmental Impact Statement, page 20, dated August 1980, requires that any New Jersey project extending beyond mean low water in the Delaware River within the twelve-mile circle must obtain coastal zone approvals from both New Jersey and Delaware.

New Jersey objects to this Request because it calls for a legal conclusion. Without waiving this objection, New Jersey partially admits this Request for Admission, insofar as the New Jersey Coastal Zone Management Program and Final Environmental Impact Statement, dated August 1980, states that the Delaware-New Jersey boundary in most of Salem County, New Jersey is the mean low water line, and states that "The New Jersey and Delaware Coastal Zone Management agencies have discussed this issue and have concluded that any New Jersey project extending beyond mean low water must obtain coastal permits from both states." New Jersey partially denies this Request For Admission insofar as the Request states that the

referenced document "requires" approvals from both Delaware and New Jersey for any New Jersey project extending beyond mean low water into Delaware. This alleged "requirement" is not contained within any enforceable New Jersey statute, regulation, rule, or Executive Order, and the federal Coastal Zone Management Act does not modify or supersede any interstate compact. 16 U.S.C. §1456(e)(1).

63. Admit that New Jersey has not amended its Coastal Zone Management Program and Final Environmental Impact Statement, page 20, dated August 1980, to remove the requirement that any New Jersey project extending beyond mean low water in the Delaware River within the twelve-mile circle must obtain coastal zone approvals from both New Jersey and Delaware.

New Jersey objects to this Request for Admission because it calls for a legal conclusion and because it incorrectly states that the referenced document contains a "requirement" for approvals from both states for any New Jersey project extending beyond mean low water in the Delaware River within the Twelve-Mile Circle. Without waiving this objection, New Jersey partially admits the Request, to the extent that the referenced document has not been amended to remove or revise the statement quoted in New Jersey's response to Request for Admission 62, above, and partially denies the Request, because the quoted statement does not contain or impose a "requirement" for approvals from both states, for the reasons stated in response to Request for Admission 62, above.

64. Admit that Delaware provides emergency fire response services on the eastern half of the Delaware River within the twelve-mile circle.

**New Jersey objects to this Request for Admission because the term “emergency” is not defined, nor is the Request specific to any particular period of time. Thus, the Request calls for speculation. Notwithstanding this objection, New Jersey partially admits the Request to the extent that Delaware is authorized to provide fire response service to vessels traveling on water within the Twelve Mile Circle beyond the low water line, and to assist the US Coast Guard in emergency response pursuant to operations plans approved by the US Coast Guard, but denies the Request in part, to the extent that it calls for the conclusion that Delaware provides, or is authorized to provide, fire response services for any dock or pier on or extending from the New Jersey shoreline of the Delaware River, or to any boat docked thereto. In addition, the Request is denied to the extent it implies that New Jersey is not authorized to assist in emergency response or in the event of exigent circumstances.**

65. Admit that Delaware provides emergency medical services on the eastern half of the Delaware River within the twelve-mile circle.

**New Jersey objects to this Request for Admission because the term “emergency” is not defined, nor is the Request specific to any particular period of time. Thus, the Request calls for speculation. Notwithstanding this objection, New Jersey admits the Request in part, and denies the Request in part. New Jersey admits the Request to the extent that both Delaware and New Jersey are authorized to provide emergency medical service to vessels traveling on water within the Twelve Mile Circle beyond the low water line, and to assist the US Coast Guard in emergency response pursuant to operations plans approved by the US Coast Guard, but denies that Delaware provides, or is authorized to provide, emergency medical services for**

**incidents on any dock or pier on or extending from the New Jersey shoreline of the Delaware River, or to any boat docked thereto.**

66. Admit that Delaware provides police services on the eastern half of the Delaware River within the twelve-mile circle.

**New Jersey objects to this Request for Admission because the term “police services” is not defined, nor is the Request specific to any particular point in time. Thus, the Request calls for speculation. Notwithstanding this objection, New Jersey admits the Request in part to the extent that Delaware has authority to enforce federal law relating to ships or boats traveling on any portion the Delaware River, including on water within the Twelve Mile Circle; admits the Request in part to the extent that Delaware may enforce its laws and is authorized to provide police service concerning any incident occurring on water within the eastern half of the Delaware River within the Twelve Mile Circle up to the mean low water line on the New Jersey side of the River; and denies the Request in part, to the extent that New Jersey denies that Delaware provides, or is authorized to provide, “police services” for incidents on any dock or pier on or extending from the New Jersey shoreline of the Delaware River, or to any boat docked thereto.**

67. Admit that Delaware police investigate crimes that occur on the eastern half of the Delaware River within the twelve-mile circle.

**New Jersey admits the Request in part, insofar as Delaware has authority to investigate violations of federal law relating to ships or boats traveling on any portion the Delaware River,**

**including the Twelve Mile Circle, and insofar as Delaware may investigate violations of Delaware law concerning any incident occurring on water within the eastern half of the Delaware River within the Twelve Mile Circle up to the mean low water line on the New Jersey side of the Twelve Mile Circle; and denies the Request in part, to the extent that it calls for the conclusion that Delaware investigates or is authorized to investigate crimes occurring on any dock or pier on or extending from the New Jersey shoreline of the Delaware River, or upon any boat docked thereto.**

68. Admit that New Jersey routes police, fire, and rescue calls to Delaware for events on the eastern half of the Delaware River within the twelve-mile circle.

**New Jersey partially denies the Request, to the extent that it states that New Jersey routes calls for police, fire or medical assistance to Delaware if those calls concern an event on a dock or a pier on or extending from the New Jersey shoreline of the Delaware River, or upon any boat docked thereto. New Jersey admits the Request in part to the extent that when New Jersey receives calls for police, fire or medical assistance for events on a boat or in the water within the eastern half of the Delaware River within the Twelve Mile Circle and beyond the low water line on the New Jersey side of the River, it relays those calls for assistance to Delaware, and that it responds to the event if Delaware advises that New Jersey should handle the matter or in the event of exigent circumstances.**

69. Admit that New Jersey routes 911 calls for police, fire, and rescue for events on the eastern half of the Delaware River within the twelve-mile circle to Delaware's 911 call centers.



**New Jersey admits that 911 calls for police, fire, and rescue made on cellular telephones are directed to the nearest cellular tower, regardless of the state in which the tower is located. New Jersey denies that it routes any 911 call it receives for police, fire or medical assistance to Delaware if the call concerns an event on a dock or a pier on or extending from the New Jersey shoreline of the Delaware River, or upon any boat docked thereto. New Jersey admits that when it receives a cellular telephone 911 call for police, fire or medical assistance for any event on a boat or in the water in the eastern half of the Delaware River within the Twelve Mile Circle it conveys the request for assistance to both New Jersey and Delaware Emergency Response Coordinators for the areas closest to the event, since it is often unclear whether the emergency is within the Twelve Mile Circle or above or below mean low water.**

70. Admit that Delaware law enforcement agencies investigate drownings that occur on the eastern half of the Delaware River within the twelve-mile circle.

**New Jersey admits that Delaware is authorized to investigate boat accidents and drownings in the water beyond the mean low water line on the eastern half of the Delaware River, within the Twelve Mile circle, and to take possession of corpses found there, and to investigate the circumstances leading to death.**

71. Admit that the Claymont Fire Company in Delaware is primarily responsible for fire and/or emergency responses for any event that might occur on or connected with the pier associated with BP's proposed LNG facility.

**New Jersey objects to this Request because it calls for a legal conclusion rather than for confirmation or denial of an issue of fact. In addition, the Request calls for speculation and is not relevant to the issues surrounding the Compact of 1905 as set forth by the Special Master, since it is related to potential future projects, which have been determined to be irrelevant to interpreting the Compact. Without waiver of these objections, the Request is denied.**

**72. Admit that Delaware enforces its boating laws on the eastern half of the Delaware River within the twelve-mile circle.**

**Admitted that Delaware enforces Delaware boating laws in Delaware territory; however, the Request is denied to the extent that it calls for the conclusion that Delaware enforces its boating laws with respect to boats fastened to docks or piers on or extending from the New Jersey shoreline of the Delaware River.**

**73. Admit that the eastern half of the Delaware River within the twelve-mile circle is not included in any New Jersey fire district.**

**New Jersey objects to this Request because the term "fire district" is not defined and therefore the Request is vague. Without waiver of this objection, the Request is denied. New Jersey asserts that it provides fire fighting service to all docks or piers on or extending from the New Jersey shoreline of the Delaware River as well as to any vessel docked thereto.**

74. Admit that the eastern half of the Delaware River within the twelve-mile circle is not included in any New Jersey police district.

New Jersey objects to this Request because "police district" is not defined, and therefore the Request is vague. New Jersey denies the Request insofar as it refers to police response to incidents on a dock, pier or other structure on or extending from the New Jersey shoreline, or to an incident on a boat fastened thereto.

75. Admit that the eastern half of the Delaware River within the twelve-mile circle is not included in any New Jersey emergency response district.

New Jersey objects to and denies this Request because the term "emergency response" and "district" are not defined and may vary depending upon federal law, the nature of the "emergency," and any operations plan in place that apportions responsibility between federal and state first responders. New Jersey asserts that it responds to emergencies occurring on any dock or pier on the eastern half of the Delaware River, including the Twelve Mile Circle, and to any emergency occurring on a boat fastened thereto, unless modified by written federal directive.

76. Admit that New Jersey does not have any police, fire or rescue boats specifically assigned to patrol or respond to events on the eastern half of the Delaware River within the twelve-mile circle.

Denied in part. New Jersey asserts that it has police boats assigned to patrol the Delaware River, including the Twelve Mile Circle, but admits that the boats are not specifically assigned to the area within the Twelve Mile Circle.

77. Admit that, when New Jersey provides emergency and police responders on the eastern half of the Delaware River within the twelve-mile circle, New Jersey responders are acting under the command of Delaware officials.

**New Jersey objects to and cannot admit or deny this Request for Admission because it calls for a legal conclusion that depends entirely upon the circumstances of the specific event.**

78. Admit that Delaware hunting and fishing laws govern all hunting and fishing activities on the eastern half of the Delaware River within the twelve-mile circle.

**Denied in part and admitted in part. The Request is denied in part, insofar as hunting for migratory birds including waterfowl, woodcock, mourning doves, rails and gallinules must comply with the Federal Migratory Bird Treaty and rules of the Migratory Bird Harvest Information Program as specified in 50 C.F.R. Part 20.20. Both New Jersey and Delaware may enforce federal law relating to hunting in the water within the Twelve Mile Circle, including discharge of firearms, take limits, and season limits. The Request is admitted in part, insofar as it refers to fishing activities within Delaware's boundary that are subject to Delaware law rather than to federal law.**

79. Admit that Delaware law enforcement agencies are responsible for the enforcement of all Delaware hunting and fishing laws on the eastern half of the Delaware River within the twelve-mile circle.

**New Jersey admits that Delaware is responsible for enforcing Delaware hunting and fishing law in Delaware territory, subject to the limitations stated in response to Request for Admission 78, above. Hunting for migratory birds including waterfowl, woodcock, mourning doves, rails and gallinules must comply with the Federal Migratory Bird Treaty and rules of the Migratory Bird Harvest Information Program as specified in 50 C.F.R. Part 20.20. Both New Jersey and Delaware may enforce federal law relating to hunting in the water within the Twelve Mile Circle, including discharge of firearms, take limits, and season limits.**

ANNE MILGRAM  
Acting Attorney General of New Jersey

By: *Rachel Horowitz*  
Rachel Horowitz  
Deputy Attorney General

Dated: September 8, 2006

No. 134, Original

**RECEIVED**

SEP 14 2006

C. J. Seitz

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**In The  
Supreme Court of the United States**

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STATE OF NEW JERSEY,

*Plaintiff,*

v.

STATE OF DELAWARE,

*Defendant.*

---

**Before the Special Master  
the Hon. Ralph I. Lancaster, Jr.**

---

**CERTIFICATE OF SERVICE**

The undersigned hereby certifies that on the 8th day of September 2006, counsel for the State of New Jersey caused New Jersey's Responses to Delaware's First Requests for Admissions to be served upon counsel for the State of Delaware in the manner indicated below:


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SUPERIOR COURT  
OF THE  
STATE OF DELAWARE

Claud L. Tease  
Judge

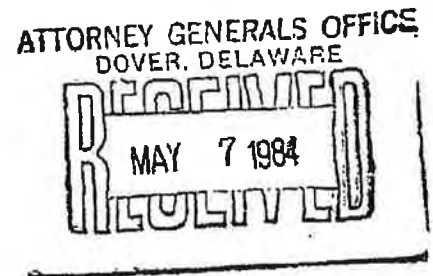
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May 2, 1984

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RE: State v. Mick, Parsons, Crow and Willey  
83-05-0092-93, 0094-95, 0081-0091  
0071-0080, 1080, 2080, 3080, 1091,  
2091, 3091

Gentlemen and Madam:

The parties do not dispute the fact that in 1905 Delaware and New Jersey entered into an interstate compact relating to disputes over territory, jurisdiction, and the taking and catching of fish in the Delaware River and Bay.

The compact authorized the passage of uniform laws by the states but did not require them to be passed.

In 1907, contrary to the position taken by defendants, the states did not enact uniform laws pursuant to the compact and this lack of uniformity is obvious from an examination of the pertinent provisions of the 1907 legislation.

Consequently, the various laws regulating the taking of fish, enacted by the Delaware General Assembly between 1907 and today, are valid and enforceable.



Aside from the obvious substantive differences in the content of the 1907 Delaware and New Jersey statutes, historians, individuals, organizations and legal advisors have consistently agreed over the years that the 1907 laws were not uniform in many important respects.

Since the provisions of Article IV of the compact, authorizing the states to pass uniform laws, were never put into effect, the states have been free to enact their own legislation regulating the fishing in the bay and ocean.

An excellent in-depth review of this question is found in the State's answering brief filed on September 7, 1983, pp. 16-35.

Defendant's argument relating to the 1915 Delaware Code "revisions" is without merit because the changes were simply proposed, and New Jersey had then, and has since had, its own statutes dealing with the taking of fish, different in substance from Delaware's.

Because no uniform laws ever existed in 1907, nor since, the Delaware General Assembly has never been bound by any of the provisions of the compact.

\* \* \* \* \*

Defendants challenge the pertinent statutes on the ground of vagueness and the consequent failure to give notice as to what type of conduct is prohibited. Such challenges must be examined in the light of the facts of the particular case at hand. U.S. v. Maguire, 419 U.S. 544 (1975); Upshur v. State, Del. Supr., 420 A.2d 165 (1980). (There are no First Amendment rights raised by defendants.)

It is abundantly clear from the facts of record in these cases that defendants knew what type of conduct would be considered unlawful under 7 Del. C. §910 and 936.

\* \* \* \* \*

I find no inconsistencies in Chapter 9 of 7 Del. C. sufficient to support a constitutional attack on any of the sections of that chapter. When read and analyzed together they are reasonably clear and consistent.

Michael J. Malkiewicz, Esq.  
F. Michael Parkowski, Esq.  
Bonnie M. Benson, Esq.

May 2, 1984

A comprehensive resources management plan, whether put into effect by statute or regulation enacted pursuant to statute, is necessarily suspect and subject by its very nature to arguments relating to vagueness and inconsistency; but the administrators and the courts must be slow to throw them aside because of the importance of resources management to society, absent a clear showing of inconsistency.

\* \* \* \* \*

The question raised by the parties regarding the duty of the Delaware General Assembly to modernize the fin fishing laws has been recently mooted. The duty of the courts, in most cases, is to interpret the law without regard to whether it comports with good public policy. And if a statute is antiquated or may produce a hardship to a special class of persons or may lead to an unwise result, it is for the legislative branch of government to act, not the judicial branch.

\* \* \* \* \*

Defendants' non-enforcement argument has previously been disposed of by the Delaware Court of Chancery in Delaware Watermen's Assoc. v. DNREC, et al., C.A. 789 (1983), Kent County, Brown, Chancellor.

For the reasons set out herein the defendants' motions to dismiss must be, and they are hereby, denied.

Sincerely yours,



Claud L. Tease

CLT:llf  
cc: Prothonotary  
Case Scheduling Office



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**3. Uninterrupted; unbroken; continual; continued.**  
An unbroken and continuous goodness. *Shak.*  
**Con-tin-u-a-tion** (kón-tín-ú-á-shún), n. [L. *continuatio*: cf. *continuatio*.] 1. The act or state of continuing; the state of being continued; uninterrupted extension or succession; prolongation; propagation. Preventing the continuation of the royal line. *Macaulay.*  
2. That which extends, increases, supplements, or carries on; as, the continuation of a story. My continuation of the version of *Stadius*. *Pope.*  
**Con-tin-u-a-tive** (kón-tín-ú-á-tív), n. [Cf. *F. continuatif*.] 1. (*Logic*) A term or expression denoting continuation. [L.]  
To these may be added *continuative*: as, *Rome* remains to this day; which includes, at least, two propositions, viz., *Rome was*, and *Rome is*.  
2. (*Gram.*) A word that continues the connection of sentences or subjects; a connective; a conjunction. *Continuatives* . . . consolidate sentences into one continuous whole. *Howells.*  
**Con-tin-u-a-tor** (kón-tín-ú-á-tór), n. [Cf. *F. continuateur*.] One who, or that which, continues; esp., one who continues a series or a work; a continuer. *Sh. T. Trovatore.*  
**Con-tin-u-a-tory** (kón-tín-ú-á-tór-é), v. & n. [*Imp.* & *p. p.* *CONTINUATED* (-éd); *p. pr.* & *vb. n.* *CONTINUATING*.] [*F. continuer*, L. *continuare*, *continuum*, to connect, continue, fr. *continuus*. See *CONTINUOUS*, and cf. *CONTINUANCE*.] 1. To remain in a given place or condition; to remain in connection with; to abide; to stay.  
Here to continue, and build up here a growing empire. *Johnson.*  
They continue with me now these days, and have nothing to do. *Matt. xv. 33.*  
2. To be permanent or durable; to endure; to last. But now thy kingdom shall not continue. *1 Sam. xiii. 14.*  
3. To be steadfast or constant in any course; to persevere; to abide; to endure; to persist; to keep up or maintain a particular condition, course, or series of actions; as, the army continued to advance.  
If ye continue in my word, these are ye my disciples indeed. *John viii. 31.*  
**Syn.** — To persevere; persist. See *PERSISTENCE*.  
**Con-tin-u-ous**, v. & i. 1. To unite; to connect. [*Obs.*] The use of the nasal in to continue the infant unto the mother. *Sh. T. Trovatore.*  
2. To protract or extend in duration; to persevere or persist in; to cease not.  
O continue thy loving kindness unto them that know thee. *Ps. lxxviii. 24.*  
You know how to make yourself happy by only continuing such a life as you have been long accustomed to lead. *Pope.*  
3. To carry onward or extend; to prolong or produce; to add to or draw out in length.  
A bridge of wondrous length, From hill continued, reaching th' utmost orb Of this frail world. *Keats.*  
4. To remain; to suffer or cease to remain; as, the trustees were continued; also, to suffer to live.  
And how shall we continue Claudio. *Shak.*  
**Con-tin-u-ous** (-ú), p. p. & a. Having extension of time, space, order of events, exertion of energy, etc.; extended; protracted; uninterrupted; also, resumed after interruption; extending through a succession of issues, sessions, etc.; as, a continued story. "Continued war." *Johnson.* "Continued succession." *Locke.*  
**Continued bass** (*Mus.*), a bass continued through an entire piece of music, while the other parts of the harmony are indicated by figures beneath the bass; the same as through bass or figured bass; basso continuo. [*It.*] — **Continued force** (*Mech.*), a lever which presents no interruption in its course. — **Continued fraction** (*Math.*), a fraction whose numerator is 1, and whose denominator is a whole number plus a fraction whose numerator is 1 and whose denominator is a whole number plus a fraction, and so on. — **Continued proportion** (*Math.*), a proportion composed of two or more equal ratios, in which the consequent of each preceding ratio is the same with the antecedent of the following one; as, 4:8::8:16::16:32.  
**Con-tin-u-ous-ly** (-ú-ú-ó-ó-ly), adv. Continuously.  
**Con-tin-u-ous-ness** (-ú-ú-ó-ó-ness), n. One who continues; one who has the power of perseverance or persistence. "Indulgent continuist" in sin. *Hammond.*  
I would my horse had the speed of your tongue, and so good a continuer. *Shak.*  
**Con-tin-u-ity** (kón-tín-ú-í-tí), n. [*F. continuité*.] [*L. continuus*: cf. *F. continuus*. See *CONTINUOUS*.] The state of being continuous; uninterrupted connection or succession; close union of parts; cohesion; as, the continuity of fibers. *Crew.*  
The sight would be tired, if it were attracted by a continuity of glittering objects. *Dryden.*  
**Law of continuity** (*Math. & Physics*), the principle that nothing passes from one state to another without passing through all the intermediate states. — **Solution of continuity**. [*Mech.*] See *INTERMEDIATE*.  
**Con-tin-u-ous-ness** (kón-tín-ú-ú-ó-ó-ness), n. [*It.*] (*Mus.*) Basso continuo, or continued bass.  
**Con-tin-u-ous-ness** (kón-tín-ú-ú-ó-ó-ness), n. [*L. continuus*, fr. *continere* to hold together. See *CONTINUE*.] 1. Without break, cessation, or interruption; without intervening space or time; uninterrupted; unbroken; continual; unceasing; constant; continued; protracted; extended; as, a continuous line of railroad; a continuous current of electricity.  
We can hear his continuous murmur. *Longfellow.*  
2. (*Bot.*) Not deviating or varying from uniformity; not interrupted; not jointed or articulated.  
Continuous brake (*Railroads*), a brake which is attached to each car of a train, and can be caused to operate in all the cars simultaneously from a point on any car or on the engine. — **Continuous impost**. See *IMPOST*.  
**Syn.** — *CONTINUOUS*, *CONTINUAL*. *Continuous* is the stronger word, and denotes that the continuity or union of parts is absolute and uninterrupted; as, a continuous sheet of ice; a continuous flow of water or of argument.

So Daniel Webster speaks of "a continuous and unbroken strain of the martial airs of England." *Continuum*, in most cases, marks a close and unbroken succession of things, rather than absolute continuity. Thus we speak of continual showers, implying a repetition with occasional interruptions; we speak of a person as liable to continual calls, or as subject to continual applications for aid, etc. See *CONTRARY*.  
**Con-tin-u-ous-ly** (kón-tín-ú-ú-ó-ó-ly), adv. In a continuous manner; without interruption. — **Con-tin-u-ous-ness**, n.  
**Con-tin-u-ous-ly** (kón-tín-ú-ú-ó-ó-ly), n. 1. (*Boysenaking*) The space between the strands on the outside of a rope. *Knight.*  
2. (*Naut.*) The space between the hitches of two cables stowed side by side.  
**Con-tin-u-ous-ly** (kón-tín-ú-ú-ó-ó-ly), n. [*It. contrattato*, fr. *contratto* (-á-tó) (-á-tó), p. pr. of *contrattare*.] [*Naut.*] A species of medal or medallion of bronze, having a deep furrow on the contour or edge; — supposed to have been struck in the days of Constantine and his successors. *S. S. Poole.*  
**Con-tin-u-ous-ly** (kón-tín-ú-ú-ó-ó-ly), n. See *CONTRIBUTION*.  
**Con-tin-u-ous-ly** (kón-tín-ú-ú-ó-ó-ly), v. & i. [*F. contorsion*, p. p. of *contorsion* to twist; *con-* + *torquere* to twist. See *TORTURE*.] To twist; to twist together; to twirl away; to bend; to distort; to wrest.  
The resistant arteries are variously contorted. *How.*  
Kant contorted the term category from the proper meaning of attribution. *Sh. T. Hamlet.*  
**Con-tort-ed**, v. & i. Twisted, or twisted together. "A contorted chain of circles." *Keats.*  
2. (*Bot.*) (a) Twisted back upon itself, as some parts of plants. (b) Arranged so as to overlap each other; as, petals in *epipetalous* or *convolute* salivation.  
**Con-tort-ion** (kón-tór-tí-ó-n), n. [*L. contorsio*; cf. *F. contorsion*. See *CONTRACT*, and cf. *TORTURE*.] A twisting; a writhing; a wrestling; way motion; a twist; as, the contortion of the muscles of the face. *Swift.*  
All the contortions of the sly, without the inspiration, *Burke.*  
**Con-tort-ion-ist**, n. One who makes or practices contortions.  
**Con-tort-ive** (kón-tór-tív), a. Expressing contortion.  
**Con-tort-ive-ness** (kón-tór-tív-é-ness), n. [*L. contorsivus*; *contorsio* contorted + *placere* to fold.] (*Bot.*) Plaited lengthwise and twisted in addition, as the bud of the morning-glory. *Cray.*  
**Con-tour** (kón-tór), n. [*F. contour*, fr. *contourner* to mark the outlines; *con-* + *tourner* to turn. See *TURN*.] 1. The outline of a figure or body, or the line or lines representing such an outline; the line that bounds; periphery.  
Titian's coloring and contours. *A. Drummond.*  
2. (*Mth.*) The outline of a horizontal section of the ground, or of works of fortification.  
**Con-tour-ers** (kón-tór-é-ers), those leathers that form the general covering of a bird. — **Contour of ground** (*Surv.*), the outline of the surface of ground with respect to its undulations, etc. — **Contour line** (*Topographical Surv.*), the line in which a horizontal plane intersects a portion of ground, or the corresponding line in a map or chart.  
**Con-tour-ing** (kón-tór-ing), n. [*F. contourner*, fr. *contourner* to twist.] (*Her.*) Turned in a direction which is not the usual one; — said of an animal turned to the sinister which is usually turned to the dexter, or the like.  
**Con-tour-ing-ed** (kón-tór-ing-ed), a. [*Cf. Contouring*.] (*Nautic.*) Having narrowed edges, as if turned in a latch.  
**Con-tra-** (kón-trá-), A Latin adverb and preposition, signifying against, contrary, in opposition, etc., entering as a prefix into the composition of many English words. Cf. *CONTRARY*, *adv.* & *pref.*  
**Con-tra-ban-d** (kón-trá-bánd), n. [*F. contrabando*; *contra* + *banda* ban, proclamation; cf. *F. contrabando*. See *BAN* an entry.] 1. Illegal or prohibited traffic.  
Persons the most bound in duty to prevent contraband, and the most interested in the seizure. *Brooks.*  
2. Goods or merchandise the importation or exportation of which is forbidden.  
3. A negro slave who, during the Civil War, escaped to, or was brought within, the Union lines. Such slave was considered contraband of war. [*U. S.*]  
**Con-tra-ban-d** (kón-trá-bánd), n. That which, according to international law, cannot be supplied to a hostile belligerent except at the risk of seizure and condemnation by the adversary belligerent. *Wharton.*  
**Con-tra-ban-d**, a. Prohibited or excluded by law or treaty; forbidden; as, contraband goods, or trade.  
The contraband will always keep pace, in some measure, with the fair trade. *Burke.*  
**Con-tra-ban-d**, v. & i. 1. To import illegally, as prohibited goods; to smuggle. [*Obs.*] *Johnson.*  
2. To declare prohibited; to forbid. [*Obs.*]  
The law severely contrabands Our taking business of man's hands. *Burke.*  
**Con-tra-ban-d-ist** (-is't), n. Traffic in contraband goods; smuggling.  
**Con-tra-ban-d-ist** (-is't), n. One who traffics illegally; a smuggler.  
**Con-tra-ban-d-ist** (kón-trá-bánd-ist), a. (*Mus.*) Double bass; — applied to any instrument of the same deep range as the stringed double bass; as, the *contrabasso* ophicleide; the *contrabasso* tuba or bombardon.  
**Con-tra-ban-d-ist** (-is't), n. [*It. contrabasso*.] (*Mus.*) The largest kind of bass viol. See *VIOLONA*.  
**Con-tra-ban-d-ist** (-is't), v. & i. [*Imp.* & *p. p.* *CONTRACTED* (-éd); *p. pr.* & *vb. n.* *CONTRACTING*.] [*L. contractus*, p. p. of *contrahere* to contract; *con-* + *trahere* to draw; cf. *F. contracter*. See *TRACT*, and cf. *CONTRACT*, n.] 1. To draw together or nearer; to reduce to a less compass; to shorten, narrow, or lessen; as, to contract one's sphere of action.  
In all things desecrate both contract and narrow our freedom. *Dr. H. More.*

2. To draw together so as to wrinkle; to knit.  
Then distal contract and purse thy brow. *Shak.*  
3. To bring on; to incur; to acquire; as, to contract a habit; to contract a debt; to contract a disease.  
Each from each contract new strength and light. *Pope.*  
Such behavior we contract by having much converse with persons of high station. *Swift.*  
4. To enter into, with mutual obligations; to make a bargain or covenant for.  
We have contracted an inviolable amity, peace, and league with the aforesaid queen. *Hooker.*  
Many persons . . . had contracted marriage within the degrees of consanguinity . . . prohibited by law. *Stowe.*  
5. To betroth; to affianc.  
The truth is, she and I, long since contracted, Are now so sure, that nothing can dissolve us. *Shak.*  
6. (*Gram.*) To shorten by omitting a letter or letters, or by reducing two or more vowels or syllables to one.  
**Syn.** — To shorten; abridge; epenthesis; narrow; lessen; condense; reduce; condense; narrow; abridge.  
**Con-tract** (kón-trákt), v. & i. 1. To be drawn together so as to be diminished in size or extent; to shrink; to be reduced in compass or in duration; as, iron contracts in cooling; a rope contracts when wet.  
Years contracting to a moment. *Wordsworth.*  
2. To make an agreement; to covenant; to agree; to bargain; as, to contract for carrying the mail.  
**Con-tract** (kón-trákt), a. Contracted; as, a contracted verb. *Goodwin.*  
**Con-tract** (kón-trákt), a. [*L. contractus*, p. p.] Contracted; abridged; betrothed. [*Obs.*] *Shak.*  
**Con-tract** (kón-trákt), n. [*L. contractus*, fr. *contractus*: cf. *F. contract*, formerly also *contracté*.] 1. (*Law*) The agreement of two or more persons, upon a sufficient consideration or cause, to do, or to abstain from doing, some act; an agreement in which a party undertakes to do, or not to do, a particular thing; a formal bargain; a compact; an interchange of legal rights. *Wharton.*  
2. A formal writing which contains the agreement of parties, with the terms and conditions, and which serves as a proof of the obligation.  
3. The act of formally betrothing a man and woman.  
This is the night of the contract. *Longfellow.*  
**Syn.** — *Covenant*; agreement; compact; stipulation; bargain; arrangement; obligation. See *COVENANT*.  
**Con-tract-ed** (kón-trákt-ed), a. 1. Drawn together; shrunk; wrinkled; narrow; shortened; as, a contracted brow; a contracted poem.  
2. Narrow; illiberal; selfish; as, a contracted mind; contracted views.  
3. Betrothed for; betrothed; as, a contracted person. Inquire me out contracted bachelors. *Shak.*  
**Con-tract-ed-ly**, adv. In a contracted manner.  
**Con-tract-ed-ness**, n. The state of being contracted; narrowness; meanness; selfishness.  
**Con-tract-ibil-ity** (kón-trákt-í-bí-lí-tí), n. Capability of being contracted; quality of being contractible; as, the contractibility and dilatibility of air. *Arbutnot.*  
**Con-tract-ible** (kón-trákt-í-bí-lí), a. Capable of contraction. Small air bladders dilatible and contractible. *Arbutnot.*  
**Con-tract-ibil-ity** (kón-trákt-í-bí-lí-tí), n. Contractibility.  
**Con-tract-ile** (kón-trákt-í-lí), a. [*Cf. F. contractile*.] Tending to contract; having the power or property of contracting, or of shrinking into shorter or smaller dimensions; as, the contractile muscle.  
The heart's contractile force. *H. Brock.*  
Each cellium seems to be composed of contractile substance. *Kealy.*  
**Contractile vesicle** (*Zool.*), a pulsating cavity in the interior of a protozoan, supposed to be accessory to function. There may be one, two, or more.  
**Con-tract-ility** (kón-trákt-í-lí-tí), n. 1. The quality or property by which bodies shrink or contract.  
2. (*Physiol.*) The power possessed by the fibers of living muscles of contracting or shortening.  
**Con-tract-ility** (kón-trákt-í-lí-tí), n. 1. The quality of locomotion, such power is called voluntary contractility; when not controlled by the will, as in the muscles of the heart; it is involuntary contractility.  
**Con-tract-ility** (kón-trákt-í-lí-tí), n. [*L. contractio*; cf. *F. contraction*.] 1. The act or process of contracting, shortening, or shrinking; the state of being contracted; as, contraction of the heart, of the pupil of the eye, or of a tendon; the contraction produced by cold.  
2. (*Med.*) The process of shortening an operation.  
3. The act of incurring or becoming subject to, as liabilities, obligations, debts, etc.; the process of becoming subject to; as, the contraction of a disease.  
4. Something contracted or abbreviated, as a word or phrase; — as, *contracts* for *conspicuous*; *crim. con.* for *criminal conversation*, etc.  
5. (*Gram.*) The shortening of a word, or of two words, by the omission of a letter or letters, or by reducing two or more vowels or syllables to one; as, *ne'er* for *never*; *can't* for *cannot*; *don't* for *do not*; *it's* for *it is*. *Shak.*  
6. A marriage contract. [*Obs.*]  
**Con-tract-ive** (kón-trákt-ív), a. Tending to contract; having the property or power of contracting.  
**Con-tract-ive** (kón-trákt-ív), n. [*L.*] One who contracts; one of the parties to a bargain; one who covenants to do anything for another; especially, one who contracts to perform work on a rather large scale, at a certain price or rate, as in building houses or making a railroad.  
**Con-tract-ure** (kón-trákt-ú-er; 185), n. [*L. contractura* a drawing together.] (*Med.*) A state of permanent rigidity or contraction of the muscles, generally of the flexor muscles.  
**Con-tract-ure** (kón-trákt-ú-er), n. [*Fr. contracture*; *contracture*: cf. *F. contracture*. Cf. *CONTRACTURE*, n.]















STATE OF DELAWARE  
EXECUTIVE DEPARTMENT  
PLANNING OFFICE  
DOVER

RUSSELL W. PETERSON  
GOVERNOR

DAVID R. KEIFER  
DIRECTOR

February 23, 1972

Mr. Barry Huntsinger  
El Paso Eastern Company  
2727 Allen Parkway  
Houston, Texas 77019

Dear Mr. Huntsinger:

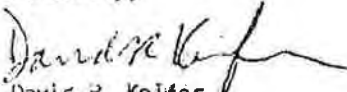
This is to inform you of my status decision regarding the El Paso Eastern Company proposed project for a pier within Delaware's jurisdiction in the Delaware River to serve as a tanker berthing facility in connection with a Liquefied natural gas terminal near Penns Grove, New Jersey.

The status of the pier facility for this El Paso Eastern Company project is that it is an offshore bulk product transfer facility which is prohibited in the Delaware coastal zone by the terms of Section 7003 of the Coastal Zone Act (Chapter 70, Title 7, Delaware Code). No coastal zone permit may be issued for such a use. This opinion is based on the advice of Attorney General Stabler and my examination of the descriptive material provided in your letter of December 21, 1971.

If you wish to file an appeal from this decision it should be filed within fourteen (14) days of your receipt of this notice on the appeal form provided herein. Items A, B, and E on the appeal form should be filled in, as well as the date of the appeal application. At this time there is no appeal fee required. The appeal should be sent to the State Coastal Zone Industrial Control Board at the address shown on the appeal application form.

If you have any questions, please contact me.

Sincerely,

  
David R. Keifer  
Director

DRK/daf

Enclosure

CC: Secretary Austin N. Heller  
Commissioner Richard Sullivan

JAN 23 1972

STATE OF DELAWARE  
DEPARTMENT OF JUSTICE  
Wilmington, Delaware

W. LAIRD STABLER, JR.  
ATTORNEY GENERAL

January 20, 1972

Mr. David R. Keifer, Director  
Planning Office  
Executive Department  
State of Delaware  
Dover, Delaware 19901

Re: Coastal Zone Act - Bulk  
Transfer Facility  
(El Paso Eastern Company)

Dear Dave:

I have reviewed the material submitted to you with regard to the liquid natural gas (LNG) terminal which El Paso Eastern Company proposes to built in New Jersey with docking facilities extending into the Delaware River. I agree with your determination that this facility is an offshore bulk product transfer facility as that term is defined by the Coastal Zone Act. However, there may be some question as to whether or not the terminal is excepted from 7 Del. C. §7002(f) by virtue of the fact that it is "a docking facility or pier for a single industrial or manufacturing facility for which a permit is granted".

It is my opinion that the El Paso Eastern terminal does not fit within the "single industrial or manufacturing facility" exception. The Delaware courts have uniformly held that the meaning of a statute depends on the intent of the legislature and that such intent must be ascertained from an interpretation of the act as a whole. The facts contained in the letter from the El Paso Eastern Company indicate that the LNG terminal in question is merely a way station in the natural gas transportation system which El Paso Eastern is endeavoring to develop. It is quite clear that the legislative intent was to permit docking facilities where such facilities would benefit such industries as would be granted permits to operate in the Coastal Zone. Here the situation is reversed. The terminal will only exist as an adjunct to the docking facility. In other words, the important part of the project to El Paso Eastern is not the "industrial facility" but the docking facility. Further, I assume that the facility proposed by El Paso Eastern is not the type of "single industrial or manufacturing facility" for which your office would grant a permit under 7 Del. C. §7004. The statute specifically mandates that such approval is necessary.

Mr. David R. Keifer  
Page 2  
January 20, 1972

With specific reference to situations similar to the one here in issue, it is my recommendation that your office more clearly define "single industrial or manufacturing facility". The definition should explicate the legislative intent to allow an exception for docking or pier facilities only where the facilities are to be used in conjunction with industries of the type permitted under 7 Del. C. §7003. The definition I envision will permit your office to evaluate applications for construction on the New Jersey shore as if they were applications for construction on the Delaware shore. Such a standard would negate claims that applications which require the approval of more than one governmental agency are acted upon by Delaware in an arbitrary or capricious manner. However, it must be clear that Delaware is not attempting to regulate development beyond the state boundary. Therefore, any reference to potential development in New Jersey should be avoided.

If you should wish to discuss this matter further, please do not hesitate to contact me. Also at this time I would like to stress that this is an informal advisory opinion. Please advise me if a formal opinion becomes necessary.

Sincerely,

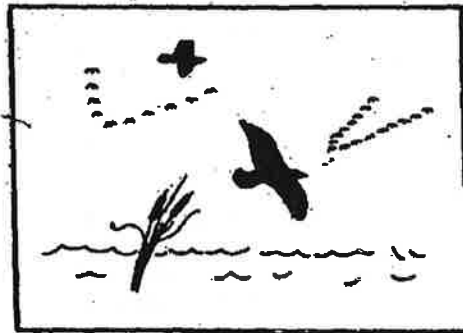
*WLS*

W. Laird Stabler, Jr.  
Attorney General

WLSJr:ls

**COASTAL ZONE ACT ADMINISTRATION**

**JUNE 28, 1971 - JUNE 30, 1977**



**STATE COASTAL ZONE INDUSTRIAL CONTROL BOARD  
AND  
OFFICE OF MANAGEMENT BUDGET AND PLANNING  
FORMERLY DELAWARE STATE  
PLANNING OFFICE**

**NOVEMBER, 1977**

Project Number 5 - El Paso Eastern Company

In a letter to the State Planner, December 21, 1971, the vice-president of the El Paso Eastern Company described a project for a liquified natural gas (LNG) terminal in New Jersey opposite Claymont involving a pier extending into Delaware waters beyond mean low water on the New Jersey side of the Delaware River. The project involved importation of North African liquified natural gas by tanker, storage and regassification at this terminal, and shipment by pipeline to customers in the Northeast. The letter suggested that the State Planner examine the project in the context of the Coastal Zone Act.

Prior to his status decision, the State Planner sought the Attorney General's legal advice on this project. On January 20, 1972, the Attorney General advised that the pier would be a (prohibited) off-shore bulk product transfer facility and that it was not exempt from prohibition by reason of the clause in Section 7002(f) of the Law providing for piers or docking facilities to be used solely by a single industrial or manufacturing user. (See Appendix 3.)

On February 23, 1972, the State Planner informed the vice-president of El Paso Eastern Company that the pier for the LNG terminal would be a prohibited off-shore bulk product transfer facility. On March 3, 1972, the Company vice-president replied that El Paso had abandoned the project a few days prior to the State Planner's decision and requested a withdrawal of the status decision saying that he had merely sought information advice on the status of the project. The State Planner refused to withdraw his status decision on March 17, 1972. No appeal was filed, and since the project had apparently previously been dropped by the Company, no appeal could logically have been expected.

Project Number 6 - Sun Olin Chemical Company

This project consisted of construction of a Stretford Sulfur Recovery Unit at the Sun Olin Chemical Plant in Claymont. This unit would remove hydrogen sulfide from a by-product stream and convert it to elemental sulfur thus removing sulfur dioxide as an emission to the atmosphere. Sun Olin was under orders by the Department of Natural Resources and Environmental Control to remove sulfur dioxide emissions in order to meet State air quality requirements by January 1973.

The status decision request was received on January 26, 1972, and the decision was made on March 9, 1972; the decision was that as expansion or extension of a non-conforming use, this project did not require a coastal zone permit because it had no significant effect on land use area, plant production, or (negative) environmental impact. There was no appeal.





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Feet



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