National Pollutant Discharge Elimination System Factsheet

SECTION 1 FACILITY SUMMARY

APPLICANT	The Thames Shipyard and Repair Company, Inc.
PERMIT NO.	CT0030333
APPLICATION NO.	202309095
DATE APPLICATION RECEIVED	December 1, 2023
LOCATION ADDRESS	50 Farnsworth Street, New London, CT 06320
FACILITY CONTACT	Adam Wronowski Office Phone: (860) 442-5349 Email: Adam@longislandferry.com
MAILING ADDRESS	2 Ferry Street, New London, CT 06320
DMR CONTACT	Adam Wronowski Office Phone: (860) 442-5349 Email: Adam@longislandferry.com
SECRETARY OF STATE BUSINESS ID	0045576
PERMIT TERM	5 Years
PERMIT CATEGORY	National Pollutant Discharge Elimination System ("NPDES") Minor ("MI")
SIC & NAICS CODE(S)	3731 & 811310 (Ship Building and Repairing)
APPLICABLE EFFLUENT GUIDELINES	None
PERMIT TYPE	Reissuance
OWNERSHIP	Private
RECEIVING WATER	Thames River
WATERBODY SEGMENT ID'S	CT-E1_015-SB
WATERBODY CLASSIFICATION	SB
DISCHARGE LOCATIONS (LAT, LONG)	DSN 101-1: 41° 22′ 44", -72° 05′ 51" DSN 102-1: 41° 22′ 44", -72° 05′ 51"
COMPLIANCE SCHEDULE	None
DEEP STAFF ENGINEER	Oluwatoyin Fakilede (860) 418-5986 Oluwatoyin.fakilede@ct.gov

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1.1 PERMIT FEES

Application Fee:

Filing Fee	Invoice No.: DEP412053	Amount: $1,300	Date Paid: 12/1/2023
Processing Fee	Invoice No.: DEP412403	Amount: $ 13,650	Date Paid: 2/1/2024

Annual Fee (per Regulations of Connecticut State Agencies ("RCSA") Sec. 22a-430-7 and General Statutes of Connecticut ("CGS") Sec. 22a-6f):

DISCHARGE CODE	WASTEWATER CATEGORY	FLOW CATEGORY (Gallons per day (gpd))	DSNs	ANNUAL FEE
101057R[1]	Shipbuilding wastewater	> 50,000	101-1, 102-1	$ 5,644.75
TOTAL AMOUNT				$ 5,644.75

[1] Reduction – A 33% reduction was applied because the annual fee amount for shipbuilding is excessive in relation to the cost of the permitted activity in accordance with RCSA Section 22a-430-7(g) (Schedule B). Thames Shipyard only discharges for about one hour, less than eight times in a month. Because the discharge is short term, the annual fee amount for shipbuilding is excessive in relation to the activity.

1.2 APPLICATION SUBMITTAL INFORMATION

On December 1, 2023, the Department of Energy and Environmental Protection ("DEEP") received an application (Application No. 202309095) from The Thames Shipyard and Repair Company, Inc. ("the Permittee", "the Applicant", "the facility") located in New London, CT 06320, for the renewal of its NPDES permit (Permit No. CT0030333), expiring on May 31, 2024 ("the previous permit").

Consistent with the requirements of Section 22a-6g of the Connecticut General Statutes ("CGS"), the Permittee published a Notice of Permit Application in The Day newspaper on November 16, 2023. On January 31, 2024, the application was determined to be timely and administratively sufficient.

The Permittee seeks authorization for the following in Application No. 202309095:

DSN	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
101-1	5,000,000	Large dry dock ballast wastewater	No Treatment	Thames River
102-1	2,000,000	Small dry dock Ballast wastewater	No Treatment	Thames River

1.3 OTHER PERMITS

The Permittee has permit coverage for other wastewater and stormwater discharges under the following permitting mechanisms:

- Stormwater from the site is permitted under the "General Permit for the Discharge of Stormwater Associated with Industrial Activity" (GSI001418); and
- Miscellaneous wastewaters from the site, such as pressure wash waters are discharged to the New London Water Pollution Control and covered under the "General Permit for the Discharge of Wastewater from Significant Industrial Users" (CTSIU0055).

1.4 FACILITY DESCRIPTION

The Thames Shipyard and Repair Company, Inc. is a commercial shipyard that repairs, constructs and refurbishes various marine vessels, including passenger and car ferries, commercial work boats, fishing vessels, and other watercrafts. The facility occupies about 6.4 acres, one mile north of the Gold Star Memorial Bridge, on the west bank of the Thames River in the City of New London. The Permittee has maintained a NPDES permit for their wastewater discharges since 1993.

1.5 DESCRIPTION OF INDUSTRIAL PROCESS

The primary activities performed by the Applicant include ship hull and topside structural repair, surface preparation (manual scraping, pressure washing, and abrasive blasting), and painting. In addition, the facility provides mechanical services for shipboard machinery, including engine repair and replacement. To conduct some of these activities, it is necessary to remove the vessel from the water. This is accomplished with a "floating dry dock," which is a vessel that can be raised and lowered in the water by controlled flooding of the dry dock ballast tanks. River water is used as "ballast" to adjust the depth of the dry dock in the water. This is achieved by letting river water into or pumping river water out of the ballast tanks of the dry dock.

The permitted discharges are from the steel ballast tanks on the site's small and large dry docks. The discharged water is not used for cooling, nor does it come in contact with the repair activities in the dry dock.

The ballast tanks in the dry docks are filled with river water to sink the docks, to allow boats to be brought onto the docks. This is referred to as a "haul" event. The dry docks are then raised by pumping out the ballast tanks, to allow work to be performed on the boats. Following completion of the work, the ballast tanks are filled with water to sink the docks, to allow the boats to be removed from the dry dock. This is referred to as a "launch" event. During each haul or launch event, the ballast tanks are filled. During January through October 2024, there were a combined 18 haul and launch events for the large dry dock and a combined 32 haul and launch events for the small dry dock.

1.5.1 DSN 101-1

Large Dry Dock Ballast Water: The large dry dock is 310 feet (ft.) long and 131 ft. wide, with 20 ballast tanks, each with its own ballast water pump rated at 2,650 gallons per minute. To lift a vessel for repair or maintenance, the dry dock ballast tanks are flooded with Thames River water to lower the dry dock. After the vessel is positioned over the submerged dry dock, the river water is pumped from the ballast tanks to raise the dry dock and lift the vessel. The discharge occurs for about one hour about four times in a month.

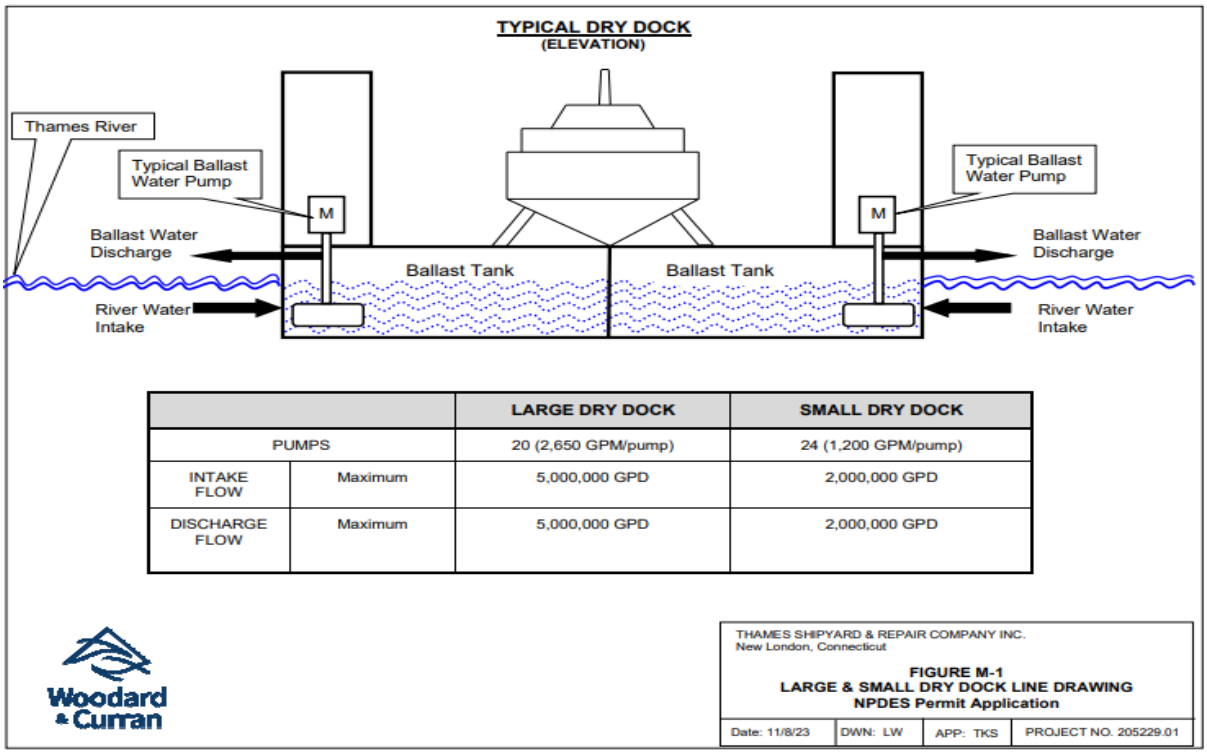
1.5.2 DSN 102-1

Small Dry Dock Ballast Water: The small dry dock operates like the large dry dock, but the discharge occurs for about one hour approximately two to three times in a month. The small dry dock is currently comprised of 15 ballast tanks.

During the term of the renewed permit, the Permittee plans to expand the size of the small dry dock from 175 ft. by 80 ft. comprised of 15 ballast tanks to 250 ft. by 80 ft., comprised of 24 ballast tanks. Each tank will have its own ballast water pump rated at 1,200 gallons per minute.

Although an expansion of the small dry dock is proposed, the Permittee is not requesting an increase in permitted discharge flow.

Fig. 1.1. Simple Permitted Discharge Diagram



1.6 FACILITY CHANGES

There have been no permit modifications or facility and treatment system modifications (3(i)) performed in accordance with Section 22a-430-3(i) of the RCSA since the last permit renewal.

The Permittee proposes to expand the small dry dock from 175 ft. by 80 ft. to 250 ft. by 80 ft. As a result, the number of discharge pumps will increase from 15 to 24, but the change is not expected to result in an increase beyond the permitted maximum flow.

1.7 TREATMENT SYSTEM DESCRIPTION

The Thames Shipyard and Repair Company, Inc. does not treat its wastewater.

1.8 COMPLIANCE HISTORY

There were no effluent violations in the last five years.

1.9 GENERAL ISSUES RELATED TO THE APPLICATION

1.9.1 FEDERALLY RECOGNIZED INDIAN LAND

As provided in the permit application, the site is not located on federally recognized Indian land.

1.9.2 COASTAL AREA/COASTAL BOUNDARY

The activity is located within a coastal boundary as defined in CGS 22a-94(b) but the Permittee is not proposing to modify the physical footprint of the subject activity.

1.9.3 ENDANGERED SPECIES

Based on a letter dated January 19, 2024, from DEEP's Bureau of Natural Resources, it was determined that populations of the following federal or state endangered, threatened or special concern species (RCSA Sec. 26-306) have been documented within the project area or near the proposed wastewater and other surface water discharges:
Shortnose sturgeon (*Acipenser brevirostrum*),
Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*)
Blue herring (*Alosa aestivalis*)

DEEP's Bureau of Natural Resources recommended a consultation with DEEP's Fisheries Program. The Fisheries Program reviewed the design of the facility's intake structures and concluded that the low frequency and short-term nature of the intake and discharge activity (see Sections 1.5.1 and 1.5.2) will limit the potential impact on aquatic organisms.

1.9.4 AQUIFER PROTECTION AREAS

As provided in the permit application, the site is not located within a protected area identified on a Level A or B map.

1.9.5 CONSERVATION OR PRESERVATION RESTRICTION

As provided in the permit application, the property is not subject to a conservation or preservation restriction.

1.9.6 PUBLIC WATER SUPPLY WATERSHED

As provided in the permit application, the site is not located within a public water supply watershed.

SECTION 2 RECEIVING WATER BODY

2.1 RECEIVING WATER BODY INFORMATION

The receiving waterbody, the Thames River, is identified as river segment CT-E1_015-SB. The segment of the Thames River is classified as SB and its designated uses include; 1) habitat for fish and other aquatic life and wildlife, 2) recreation, 3) industrial water supply, 4) navigation, and 5) commercial shellfish harvesting, where authorized.
FINAL-2022-IWQR-Appendix-A-3-Connecticut-305b-Assessment-Results-for-Estuaries.pdf

Figure 2.1. Image of discharge location with waterbody segment ID

The Thames River is on the State's 305(b) list of impaired waters. It is impaired for its designated uses of habitat for marine fish, other aquatic life, and wildlife due to low dissolved oxygen levels and estuarine bioassessments; shellfish harvesting due to fecal coliform; and recreation due to enterococcus. The permitted wastewater is not expected to contribute to the levels of fecal coliform and enterococci in the receiving water. Therefore, monitoring requirements for these bacteria are not included in the permit (FINAL-2022-IWQR-Appendix-B-1-List-of-Impaired-Waters-for-Connecticut-EPA-Category-5.pdf).

Figure 2.2. Image of Applicable Section of 2022 Connecticut Integrated Water Quality Report

Connecticut 2022 305b Assessment Results Estuaries Appendix A-3

Waterbody Segment ID	Waterbody Name	Location	Square Miles	Aquatic Life	Recreation	Shellfish	Shellfish Class
CT-E1_015-SB	LIS EB Inner - Thames River (middle), Ledyard	See Map for Boundaries. Eastern portion of LIS, Inner Estuary, Thames River from I95 crossing, US to just below outlet of Poquetanuck Cove (near Walden Island), and adjacent to Route 12 at Cardinal Lane intersection, Ledyard.	3.316	Not Supporting	Not Supporting	Not Supporting	Commercial Shellfish Harvesting Where Authorized

Figure 2.3. Image of Applicable List of impaired waters for Connecticut

2022 Appendix B-1. List of Impaired Waters for Connecticut (EPA Category 5)

Waterbody Segment ID	Waterbody Name	Cause	Impaired Designated Use
CT-E1_015-SB	LIS EB Inner - Thames River (middle), Ledyard	DISSOLVED OXYGEN	Habitat for Marine Fish, Other Aquatic Life and Wildlife
CT-E1_015-SB	LIS EB Inner - Thames River (middle), Ledyard	FECAL COLIFORM	Commercial Shellfish Harvesting Where Authorized
CT-E1_015-SB	LIS EB Inner - Thames River (middle), Ledyard	ENTEROCOCCUS	Recreation
CT-E1_015-SB	LIS EB Inner - Thames River (middle), Ledyard	ESTUARINE BIOASSESSMENTS	Habitat for Marine Fish, Other Aquatic Life and Wildlife

2.2 APPLICABLE TOTAL MAXIMUM DAILY LOAD (TMDL)

"A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound" (December 2000) applies to the Thames River, Segment ID CT-E1_015-SB. However, the Permittee's discharge has not been assigned a waste load allocation for nitrogen as part of this TMDL (https://longislandsoundstudy.net/wp-content/uploads/2010/03/Tmdl.pdf). Nitrogen monitoring requirements are incorporated in the permit.

SECTION 3 PERMIT CONDITIONS AND EFFLUENT LIMITATIONS

3.1 TECHNOLOGY BASED EFFLUENT GUIDELINES

Technology-based treatment requirements represent the minimum level of control that must be imposed under CWA § 301(b) and 402 to meet best practicable control technology currently available ("BPT") for conventional pollutants and some metals, best conventional control technology ("BCT") for conventional pollutants, and best available technology economically achievable ("BAT") for toxic and non-conventional pollutants. *See* 40 CFR § 125 Subpart A and RCSA Section 22a-430-4(l)(4)(A).

Subpart A of 40 CFR § 125 establishes criteria and standards for the imposition of technology-based treatment requirements in permits under § 301(b) of the CWA, including the application of EPA promulgated Effluent Limitation Guidelines ("ELGs") and case-by-case determinations of effluent limitations under CWA § 402(a)(1). EPA promulgates New Source Performance Standards ("NSPS") under CWA § 306 and 40 CFR § 401.12. *See also* 40 CFR § 122.2 (definition of "new source") and 122.29.

The following Effluent Guidelines and Standards were reviewed to determine their applicability to the facility's discharges:

40 CFR § 1700 - Uniform National Discharge Standards for Vessels of the Armed Forces was reviewed. The Permittee is not the owner or operator of armed vessels; therefore, this regulation is not applicable. In addition, the regulation is not applicable to vessels while under construction or in a dry dock. Therefore, 40 CFR § 1700 is not applicable to the facility's discharges.

40 CFR § 438 – Metal Products and Machinery Point Source Category: This regulation is not applicable to wastewater discharges in or on dry docks and similar structures, such as graving docks, building ways, etc. The permit renewal is for the discharge of ballast water. Therefore, 40 CFR § 438 is not applicable to the facility's discharges.

In the absence of published technology-based effluent guidelines, the permit writer is authorized under CWA § 402(a)(1)(B) and RCSA Section 22a-430-4(m) to establish effluent limitations on a case-by-case basis using best professional judgment (BPJ).

3.2 POLLUTANTS OF CONCERN

The following pollutants are included for monitoring at DSN 101-1 for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Copper, Total		✓	
Iron, Total		✓	
Nitrogen, Total		✓	
Nitrates (as N)			✓
Nitrites (as N)			✓
Total Kjeldahl Nitrogen		✓	
Total Suspended Solids		✓	
Zinc, Total		✓	
Acute toxicity monitoring requirement is included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring is also included in the permit consistent with Section 22a-426-9(a)(1).			

The following pollutants are included for monitoring at DSN 102-1 for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION		
	POLLUTANT WITH A WASTE LOAD ALLOCATION FROM A TMDL	POLLUTANT IDENTIFIED AS PRESENT IN THE EFFLUENT THROUGH SAMPLING	POLLUTANT OTHERWISE EXPECTED TO BE PRESENT IN THE EFFLUENT
Copper, Total		✓	
Iron, Total		✓	
Nitrogen, Total		✓	
Nitrates (as N)			✓
Nitrites (as N)			✓
Total Kjeldahl Nitrogen		✓	
Total Suspended Solids		✓	
Zinc, Total		✓	
Acute toxicity monitoring requirement is included in the permit consistent with Section 22a-430-3(j)(3) of the RCSA. pH monitoring is also included in the permit consistent with Section 22a-426-9(a)(1).			

3.3 BASIS FOR LIMITS

Technology and water-quality based requirements are considered when developing permit limits. Technology-based effluent limits ("TBELs") represent the minimum level of control imposed under the Clean Water Act ("CWA"). Industry-specific technology-based limits are set forth in 40 CFR Sections 405 – 471 (EPA's Effluent Limitation Guidelines) and in RCSA Section 22a-430-4(s)(2). Water quality-based limits are designed to protect water quality and are determined using the procedures set forth in EPA's *Technical Support Document for Water Quality-Based Toxics Control*, 1991 ("TSD"). When both technology and water quality-based limits apply to a particular pollutant, the more stringent limit would apply. In addition, water quality-based limits are required when any pollutant or pollutant parameter (conventional, non-conventional, toxic, and whole effluent toxicity) is or may be discharged at a level that causes, has reasonable potential to cause, or contributes to an excursion above any water quality criteria. Numeric water quality criteria are found in RCSA Section 22a-429-9 of the *Connecticut Water Quality Standards* ("WQS").

3.4 ZONE OF INFLUENCE

The previously allocated Zone of Influence ("ZOI") of 20,241,666 gallons per hour was carried forward. On rare occasions, approximately once per year, discharges could occur from the large and small docks in the same day. Therefore, the ZOI was prorated between the large and small docks discharges for acute criteria consideration.

Permitted flow for DSN 101-1 = 5,000,000 gallons per day ("gpd") (it can take about 2 hours to discharge 5,000,000 gallons in one day).
Permitted flow for DSN 102-1 = 2,000,000 gpd (discharges last for a maximum of 1 hour).
For analysis based on acute criteria, total flow = 7,000,000 gpd, where DSN 101-1 = 5,000,000 gpd and DSN 102-1 = 2,000,000 gpd. In a rare situation that both DSN 101-1 and DSN 102-1 are discharging at the same time, the maximum discharge within one hour will be 4,500,000 gpd because DSN 101-1 discharge occurs within two hours and DSN 102-1 occurs in one hour.

Dilution factor ("DF") (Acute criteria) = $\frac{\text{AML+ZOI}}{\text{AML}} = \frac{4{,}500{,}000+20{,}241666}{4{,}500{,}000} \approx 5.498148$

Instream Waste Concentration ("IWC") = $\frac{1}{\text{DF}}$ X $100\% = \frac{1}{5.498148}$ X $100\% \approx 18.2\%$

ZOI for DSN 101-1 = AML (DF – 1) = 2,500,000 gph (5.498148 – 1) = 11,245,370 gph
ZOI for DSN 102-1 = AML (DF – 1) = 2,000,000 gph (5.498148 – 1) = 8,996,296 gph

For analysis based on chronic criteria, DSN 101-1 = 5,000,000 gpd and DSN 102-1 = 2,000,000 gpd. However, the total flow of 5,000,000 gpd is used for the chronic criteria since the discharges rarely would occur on the same day.

DSN 101-1 discharge of 5,000,000 gpd within 24 hours = 208,333 gph and DSN 102-1 discharge of 2,000,000 gpd within 24 hours = 83,333 gph.

DF for DSN 101-1 (Chronic criteria) = $\frac{\text{AML+ZOI}}{\text{AML}} = \frac{208{,}333+20{,}241{,}666}{208{,}333} = 98.16$

$$\text{IWC for DSN } 101-1 = \frac{1}{\text{DF}} \text{ X } 100\% = \frac{1}{98.16} \text{ X } 100\% = 1.02\% \approx 1.0\%$$

$$\text{DF for DSN 102-1 (Chronic criteria)} = \frac{\text{AML+ZOI}}{\text{AML}} = 98.16 = \frac{83{,}333+\text{ZOI}}{83{,}333}$$

ZOI for DSN 102-1 = 8,096,634 gph

3.5 RESONABLE POTENTIAL ANALYSIS

Pursuant to CWA Section 301(b)(1)(C) and 40 CFR Section 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under Section 303 of the CWA. See also 33 United States Code ("USC") Section 1311(b)(1)(C). In addition, limitations "must control any pollutant or pollutant parameter (conventional, non-conventional, or toxic) which the permitting authority determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any water quality standard, including State narrative criteria for water quality." 40 CFR Section 122.44(d)(1)(i). To determine if the discharge causes, or has the reasonable potential to cause, or contribute to an excursion above any WQS, EPA considers: 1) existing controls on point and non-point sources of pollution; 2) the variability of the pollutant or pollutant parameter in the effluent; 3) the sensitivity of the species to toxicity testing (when evaluating whole effluent toxicity); and 4) where appropriate, the dilution of the effluent by the receiving water. See 40 CFR Section 122.44(d)(1)(ii).

If the permitting authority determines that the discharge of a pollutant will cause, has the reasonable potential to cause, or contribute to an excursion above WQSs, the permit must contain Water Quality Based Effluent Limits ("WQBELs") or require additional monitoring if there is insufficient data to develop a WQBEL, for that pollutant. See 40 CFR Section 122.44(d)(1)(i). The reasonable potential analysis below indicates that water quality-based limits are needed for copper.

Table 3.5.1: Reasonable Potential Evaluation
(This analysis compares the projected maximum concentration (PMC) in the receiving stream with the applicable water quality criteria (WQC). When the PMC is lower than the WQC, there is no potential for the discharge to exceed the WQC. When the PMC is higher than the WQC, there is a potential for the discharge to exceed the WQC and permit limits are therefore needed.)

Pollutants	PMC in effluent = Max. measured concentration X multiplier in Attachment 1	PMC in the waterbody $C_d = \frac{(QC)_u + (QC)_e}{Q_d}$	Connecticut Water Quality Criteria (WQC) (Saltwater)			Is there potential to exceed WQC?
			Aquatic Life (Acute) (µg/l)	Aquatic Life (Chronic)(µg/l)	Human Health (µg/l)	
DSN 101-1: Q = Flow, C = Concentration, $(QC)_u$ = Upstream data, $(QC)_d$ = Downstream data, $(QC)_e$ = Effluent data and $Q_d = Q_u + Q_e$. $Q_{e,acute}$ = 2,500,000 gph, $Q_{u,\ acute}$ = 11,245,370 gph, $Q_{d,acute}$ = 13,745,370 gph, $Q_{e,chronic}$ = 208,333 gph, $Q_{u,chronic}$ = 20,241,666 gph and $Q_{d,chronic}$ = 20,449,999 gph (See Section 3.4 for flow information).						
Copper	67 X 2.7 = 180.9	32.9/1.8	4.8	3.1	--	Yes
Zinc	53 X 1.8 = 95.4	17.35/0.972	90	81	26,000	No
DSN 101-2: Q = Flow, C = Concentration, $(QC)_u$ = Upstream data, $(QC)_d$ = Downstream data, $(QC)_e$ = Effluent data and $Q_d = Q_u + Q_e$. $Q_{e,acute}$ = 2,000,000 gph, $Q_{u,\ acute}$ = 8,996,296 gph, $Q_{d,acute}$ = 10,996,296 gph, $Q_{e,chronic}$ = 83,333 gph, $Q_{u,chronic}$ = 8,096,634 gph and $Q_{d,chronic}$ = 8,179,967 gph (See Section 3.4 for flow information).						
Copper	157 X 4.1 = 643.7	117.08/6.56	4.8	3.1	--	Yes
Zinc	87 X 2.7 = 234.9	42.72/2.39	90	81	26,000	No

Consistent with Section of the 22a-430-4(l)(4)(A)(xvii)(2) of the RCSA, the Permittee requested an adjustment of effluent limitations other than those established pursuant to Section of the 22a-430-4(4)(A)(x) of the RCSA to reflect credit for substances in the Permittee's intake water. This is contingent upon the discharger demonstrating that the control system it proposes or uses to meet applicable limitations would, if properly operated and maintained, meet the limitations in the absence of such substances in the intake waters.

A comparability analysis to evaluate whether the use of the water at the facility caused or contributed to any unacceptable increase in copper concentrations in the effluent as compared to those present in the influent was performed. There was a finding that there is no "net" increase of copper concentrations in the effluent. This demonstrates that the discharge is consistent with the WQS and is unlikely to cause or contribute to any potential increases in copper concentrations within Thames River (see Attachment 2). Therefore, no limit was included for copper in this permit.

3.6 WATER QUALITY BASED EFFLUENT LIMITATIONS (WQBELs)

The CWA and federal regulations require that effluent limitations based on water quality considerations be established for point source discharges when such limitations are necessary to meet state or federal water quality standards that are applicable to the designated receiving water. This is necessary when less stringent TBELs would interfere with the attainment or maintenance of water quality criteria in the receiving water. See CWA Section 301(b)(1)(C) and 40 CFR Section 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i).

WQBELs are not required at this time given the results of the no net increase analysis (see Section 3.5).

3.7 WHOLE EFFLUENT TOXICITY

The Permittee shall comply with effluent standards or prohibitions established by CWA Section 307(a) and RCSA Section 22a-430-4(l) and may not discharge toxic pollutants in concentrations or combinations that are harmful to humans, animals, or aquatic life.

If toxicity is suspected in the effluent, DEEP may require the Permittee to perform acute or chronic whole effluent toxicity testing.

The Permittee's previous permit required semiannual acute toxicity testing using *Mysidopsis bahia* and *Menidia beryllina*. The previous permit also had acute toxicity limits of LC_{50} = 100% toxicity limit. During the last permit cycle, the Permittee had no exceedance of its acute toxicity limit.

Reasonable Potential Analysis

Acute toxicity shall be assumed to occur at any discharge concentration which exceeds the LC50 (lethal concentration to 50% of the test organisms during a specific period) determined in an acute toxicity test multiplied by an application factor of 0.33. The projected maximum toxicity ("PMT") is determined by multiplying the maximum toxicity with the multiplier from Appendix C (based on 10 samples) and the dilution factor. A default coefficient of variation of 0.6 is assumed.

$$Acute\ toxic\ unit\ (TU_a) = \frac{100}{LC_{50}}$$

$$TU_a = \frac{100}{100} = 1TU_a$$

$$PMT = 1TU_a\ (highest\ observed\ toxicity\ data)\ X\ 3.0\ (multiplier\ in\ Appendix\ A)\ X$$

$$0.01\ (dilution\ factor) = 0.03TU_a$$

$0.03TU_a$ is lower than EPA's Technical Support Document for Water Quality-based Toxics Control recommended whole effluent toxicity criteria for protection against acute effects: $0.3TU_a$. Therefore, there is no reasonable potential of causing toxicity and a limit is not needed. However, based on anti-backsliding regulations, the previous limit of LC50 = 100% is being maintained.

3.8 COMPARISON OF LIMITS

After preparing and evaluating applicable TBELs and WQBELs, the most stringent limits are applied in the permit. Pollutants of concern that only require monitoring without limits are not included in the below table.

Parameters	Table 3.8.1: Comparison of Limits Based on Different Criteria	
	Water Quality Limits Based on EPA/505/2-90-001	Previous Permit Limits
Acute toxicity	---	LC_{50} = 100%
pH, minimum	6.8 S.U.	6.0 S.U.
pH, minimum	8.5 S.U.	9.0 S.U.
Note: The highlighted numbers represent the most stringent effluent limits.		

3.9 SAMPLING FREQUENCY, TYPE, AND REPORTING

The sampling frequencies in the previous permit are carried forward based on best professional judgement. The permit contains quarterly sampling frequency because of the low frequencies of discharge. Consistent with Section 22a-430-3(j)(4) of the RCSA, semi-annual acute toxicity monitoring requirements are incorporated into the permit because the Permittee has demonstrated that the toxicity of the discharge is relatively constant and the potential for the discharge to cause acute or chronic toxicity in the receiving waters is minimal (see Section 3.7).

Composite sample comprising of 6 grab samples as defined in the permit are incorporated into the permit, consistent with RCSA Section 22a-430-3(j)(3). There is minimal variability in the pH, so grab sample for pH was carried forward.

3.10 EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

POLLUTANTS	LIMIT	BASIS FOR LIMIT	MONITORING/ REPORTING FREQUENCY
DSN 101-1:			
LC_{50} Static 48 Hr Acute Toxicity, *Mysidopsis bahia*	LC_{50} = 100%	Anti-backsliding regulations.	Semiannually
LC_{50} Static 48 Hr Acute Toxicity, *Menidia beryllina*	LC_{50} = 100%	Anti-backsliding regulations.	Semiannually
Copper, total	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly
Flow, Maximum during 24 hr. period	5,000,000 gpd	Permitted discharge flow per application.	Quarterly
Iron, total	Monitoring only requirement.	No RP to cause exceedance of WQC.	Quarterly
Nitrates (as N)	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly
Nitrites (as N)	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly
Total Kjeldahl Nitrogen	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly
Nitrogen, Total	Monitoring only requirement.	Statewide TMDL	Quarterly
pH	6.8 – 8.5	WQC	Quarterly
Solids, total suspended	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly
Zinc, total	Monitoring only requirement.	No RP to cause exceedance of WQC.	Quarterly
DSN 102-1:			
LC_{50} Static 48 Hr Acute Toxicity, *Mysidopsis bahia*	LC_{50} = 100%	Anti-backsliding regulations.	Semiannually
LC_{50} Static 48 Hr Acute Toxicity, *Menidia beryllina*	LC_{50} = 100%	Anti-backsliding regulations.	Semiannually
Copper, total	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly
Flow, Maximum during 24 hr. period	2,000,000 gpd	Permitted discharge flow per application.	Quarterly
Iron, total	Monitoring only requirement.	No RP to cause exceedance of WQC.	Quarterly
Nitrates (as N)	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly
Nitrites (as N)	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly
Total Kjeldahl Nitrogen	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly

POLLUTANTS	LIMIT	BASIS FOR LIMIT	MONITORING/ REPORTING FREQUENCY
Nitrogen, Total	Monitoring only requirement.	Statewide TMDL	Quarterly
pH	6.8 – 8.5	WQC	Quarterly
Solids, total suspended	Monitoring only requirement.	Case-by-case determination using BPJ.	Quarterly
Zinc, total	Monitoring only requirement.	No RP to cause exceedance of WQC.	Quarterly
MDL: Maximum Daily Limit BPJ: Best Professional Judgment TMDL: Total maximum daily load		MIL: Maximum Instantaneous Limit RP: Reasonable potential WQC: Water quality criteria	

3.11 COMPLIANCE SCHEDULE

The permit has no compliance schedule.

3.12 ANTIDEGRADATION

Implementation of the Antidegradation Policy follows a tiered approach pursuant to the federal regulations (40 CFR Section 131.12) and consistent with the Connecticut Antidegradation Policy included in the Connecticut Water Quality Standards (Section 22a-426-8(b-f) of the Regulations of Connecticut State Agencies). Tier 1 Antidegradation review applies to all existing permitted discharge activities to all waters of the state. Tiers 1 and 2 Antidegradation reviews apply to new or increased discharges to high quality waters and wetlands, while Tiers 1 and 3 Antidegradation reviews apply to new or increased discharges to outstanding national resource waters.

This discharge is an existing discharge, and the Permittee does not propose an increase in volume or concentration of constituents. Therefore, only the Tier 1 Antidegradation Evaluation and Implementation Review was conducted to ensure that existing and designated uses of surface waters and the water quality necessary for their protection are maintained and preserved, consistent with Connecticut Water Quality Standards, RCSA Sec.22a-426-8(a)(1). This review involved:

- An evaluation of narrative and numeric water quality standards, criteria and associated policies;
- The discharge activity both independently and in the context of other dischargers in the affected waterbodies; and
- Consideration of any impairment listed pursuant to Section 303d of the federal Clean Water Act or any TMDL established for the waterbody.

Compliance with all the terms and conditions in the new permit would ensure that existing and designated uses of surface waters and the water quality necessary for their protection are maintained and preserved.

3.13 ANTI-BACKSLIDING

This permit has effluent limitations, standards or conditions that are at least as stringent as the final effluent limitations, standards, or conditions in the previous permit as required in 40 CFR Section 122.44(l) and RCSA Section 22a-430-4(l)(4)(A)(xxiii).

3.14 COOLING WATER INTAKE STRUCTURE SECTION 316(B)

Section 316(b) of the Federal Water Pollution Control Act, U.S.C. Section 1326(b) states that "any standard established pursuant to Section 301 or 306 of this Act and applicable to a point source shall require that the location, design, construction, and capacity of cooling water intake structures (CWIS) reflect the best technology available (BTA) for minimizing adverse environmental impact".

The federal regulations establish requirements under Section 316(b) of the CWA for existing power generating facilities and existing manufacturing and industrial facilities with a cooling water intake structure having a design intake flow greater than 2 million gallons per day of water from waters of the United States and use at least 25 percent of the water they withdraw exclusively for cooling purposes. Section 125.92 defines "Cooling water intake structure" as "the total physical structure and any associated constructed waterways used to withdraw cooling water from waters of the United States. The cooling water intake structure extends from the point at which water is first withdrawn from waters of the United States up to and including the intake pumps."

Section 125.90(b), states "Cooling water intake structures not subject to requirements under Section 125.94 through 125.99 or subparts I or N of this part must meet requirements under Section 316(b) of the CWA established by the Director on a case-by-case, best professional judgment (BPJ) basis."

The Permittee does not use the water from the Thames River for cooling, therefore, Section 316(b) of the CWA is not applicable.

3.15 VARIANCES AND WAIVERS

The facility did not request a variance or a waiver.

3.16 E-REPORTING

The Permittee is required to electronically submit documents in accordance with 40 CFR Section 127.

SECTION 4 SUMMARY OF NEW PERMIT CONDITIONS AND LIMITS FROM THE PREVIOUS PERMIT

The following changes were made from the previous permit:

- MIL for pH was changed from 6.0 – 9.0 S.U. to 6.8 – 8.5 S.U., consistent with the WQC for a class "SB" waterbody;
- Monitoring requirements for total nitrogen were included because there is a statewide TMDL applicable to the waterbody;

- Monitoring requirements for sulfates were removed because the Permittee doesn't use any chemical containing sulfates.
- Visible foam monitoring requirement was removed for Tables A and B because it is repetitive of general effluent limitations in Section 4(B) of the permit.
- For DSN 101-1, the sample monitoring location was changed from "six pumps (three from each side of the dry dock)" to "six ballast tanks (one grab sample from each ballast tank, three from each side of the dry dock) through the manhole covers of the tanks"; and
- For DSN 102-1, the sample monitoring location was changed from "six pumps (three from each side of the dry dock)" to "samples taps from six ballast tank water pumps (one grab sample from the discharge piping of each ballast tank pump, three from each side of the dry dock) during a discharge event".
- The following provision was added to the pH monitoring requirements to account for circumstances when the intake water is not compliance with WQS, prior to entering the ballast tank: "The discharge pH shall be in the range of 6.8 – 8.5 S.U. unless the ambient receiving water is outside of this range and is not altered by the facility's permitted discharge or activities under this permit. If the Permittee's discharge pH is lower than 6.8 S.U., the Permittee may demonstrate compliance by showing that the discharge pH is either higher than, or no more than 0.5 S.U. lower than the intake pH. If the Permittee's discharge is higher than 8.5 S.U., the Permittee may demonstrate compliance by showing that the discharge pH is either lower than, or no more than 0.5 S.U. higher than, the intake pH.

  For this demonstration, the intake water sampled must be the same water that is discharged. If the discharge satisfies this condition, the Permittee shall report no data indicator ("NODI") code – "3", meaning special report attached, and submit the intake and discharge pH data used in the analysis as an attachment to the DMR. If the discharge does not satisfy this provision, then the Permittee is in violation of the effluent limit and shall report and respond to the noncompliance consistent with Section 9 of the permit. The Permittee shall keep a record of the dates of all intake and discharge events on site."

SECTION 5 PUBLIC PARTICIPATION PROCEDURES

5.1 INFORMATION REQUESTS

The application has been assigned the following numbers by the Department of Energy and Environmental Protection. Please use these numbers when corresponding with this office regarding this application.

APPLICATION NO. 202309095 PERMIT ID NO. CT0030333

Interested persons may obtain copies of the application from Adam Wronowski, The Thames Shipyard and Repair Company, 2 Ferry Street, New London CT 06320, Adam@longislandferry.com, Phone No.: (860) 442-5349.

The application is available for inspection by contacting Oluwatoyin Fakilede at oluwatoyin.fakilede@ct.gov, at the Department of Energy and Environmental Protection, Bureau of Materials Management and Compliance Assurance, 79 Elm Street, Hartford, CT 061065127 from 8:30-4:30, Monday through Friday.

Any interested person may request in writing that his or her name be put on a mailing list to receive notice of intent to issue any permit to discharge to the surface waters of the state. Such request may be for the entire state or any geographic area of the state and shall clearly state in writing the name and mailing address of the interested person and the area for which notices are requested.

5.2 PUBLIC COMMENT

Prior to making a final decision to approve or deny any application, the Commissioner shall consider written comments on the application from interested persons that are received within 30 days of this public notice. Written comments should be directed to Oluwatoyin Fakilede, Environmental Engineer 3, Bureau of Materials Management and Compliance Assurance, Department of Energy and Environmental Protection, 79 Elm Street, Hartford, CT 06106-5127 or DEEP.IndustrialNPDESPublicComments@ct.gov and should indicate the Permit ID No. CT0030333 in the subject line. The Commissioner may hold a public hearing prior to approving or denying an application if in the Commissioner's discretion the public interest will be best served thereby, and shall hold a hearing upon receipt of a petition signed by at least twenty five (25) persons. Notice of any public hearing shall be published at least thirty (30) days prior to the hearing.

5.3 PETITION FOR HEARING

Petitions for a hearing shall be submitted within thirty (30) days from the date of publication of this public notice and should include the application number noted above and also identify a contact person to receive notifications. Petitions may also identify a person who is authorized to engage in discussions regarding the application and, if resolution is reached, withdraw the petition. The Office of Adjudications will accept electronically-filed petitions for hearing in addition to those submitted by mail or hand-delivered. Petitions with required signatures may be sent to deep.adjudications@ct.gov; those mailed or delivered should go to the DEEP Office of Adjudications, 79 Elm Street, Hartford, CT 06106. If the signed original petition is only in an electronic format, the petition must be submitted with a statement signed by the petitioner that the petition exists only in that form. Original petitions that were filed electronically must also be mailed or delivered to the Office of Adjudications within 30 days of electronic submittal. Additional information can be found at www.ct.gov/deep/adjudications.

The Connecticut Department of Energy and Environmental Protection is an Affirmative Action/Equal Opportunity Employer that is committed to complying with the requirements of the Americans with Disabilities Act (ADA). If you are seeking a communication aid or service, have limited proficiency in English, wish to file an ADA or Title VI discrimination complaint, or require some other accommodation, including equipment to facilitate virtual participation, please contact the DEEP Office of Diversity and Equity at 860-418-5910 or by email at deep.accommodations@ct.gov. Any person needing an accommodation for hearing impairment may call the State of Connecticut relay number - 711. In order to facilitate efforts to provide accommodation, please request all accommodations as soon as possible following notice of any agency hearing, meeting, program, or event.

ATTACHMENT 1

Reasonable Potential Statistical Multiplier (Table 3-1 of TSD EPA/505/2-90-001)

Table 3-1. Reasonable Potential Multiplying Factors: 99% Confidence Level and 99% Probability Basis

Number of	Coefficient of Variation																			
Samples	0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	1.9	2.0
1	1.6	2.5	3.9	6.0	9.0	13.2	18.9	26.5	36.2	48.3	63.3	81.4	102.8	128.0	157.1	190.3	227.8	269.9	316.7	368.3
2	1.4	2.0	2.9	4.0	5.5	7.4	9.8	12.7	16.1	20.2	24.9	30.3	36.3	43.0	50.4	58.4	67.2	76.6	86.7	97.5
3	1.4	1.9	2.5	3.3	4.4	5.6	7.2	8.9	11.0	13.4	16.0	19.0	22.2	25.7	29.4	33.5	37.7	42.3	47.0	52.0
4	1.3	1.7	2.3	2.9	3.8	4.7	5.9	7.2	8.7	10.3	12.2	14.2	16.3	18.6	21.0	23.6	26.3	29.1	32.1	35.1
5	1.3	1.7	2.1	2.7	3.4	4.2	5.1	6.2	7.3	8.6	10.0	11.5	13.1	14.8	16.6	18.4	20.4	22.4	24.5	26.6
6	1.3	1.6	2.0	2.5	3.1	3.8	4.6	5.5	6.4	7.5	8.6	9.8	11.1	12.4	13.8	15.3	16.8	18.3	19.9	21.5
7	1.3	1.6	2.0	2.4	2.9	3.6	4.2	5.0	5.8	6.7	7.7	8.7	9.7	10.8	12.0	13.1	14.4	15.6	16.9	18.2
8	1.2	1.5	1.9	2.3	2.8	3.3	3.9	4.6	5.3	6.1	6.9	7.8	8.7	9.6	10.6	11.6	12.6	13.6	14.7	15.8
9	1.2	1.5	1.8	2.2	2.7	3.2	3.7	4.3	5.0	5.7	6.4	7.1	7.9	8.7	9.6	10.4	11.3	12.2	13.1	14.0
10	1.2	1.5	1.8	2.2	2.6	3.0	3.5	4.1	4.7	5.3	5.9	6.6	7.3	8.0	8.8	9.5	10.3	11.0	11.8	12.6
11	1.2	1.5	1.8	2.1	2.5	2.9	3.4	3.9	4.4	5.0	5.6	6.2	6.8	7.4	8.1	8.8	9.4	10.1	10.8	11.5
12	1.2	1.4	1.7	2.0	2.4	2.8	3.2	3.7	4.2	4.7	5.2	5.8	6.4	7.0	7.5	8.1	8.8	9.4	10.0	10.6
13	1.2	1.4	1.7	2.0	2.3	2.7	3.1	3.6	4.0	4.5	5.0	5.5	6.0	6.5	7.1	7.6	8.2	8.7	9.3	9.9
14	1.2	1.4	1.7	2.0	2.3	2.6	3.0	3.4	3.9	4.3	4.8	5.2	5.7	6.2	6.7	7.2	7.7	8.2	8.7	9.2
15	1.2	1.4	1.6	1.9	2.2	2.6	2.9	3.3	3.7	4.1	4.6	5.0	5.4	5.9	6.4	6.8	7.3	7.7	8.2	8.7
16	1.2	1.4	1.6	1.9	2.2	2.5	2.9	3.2	3.6	4.0	4.4	4.8	5.2	5.6	6.1	6.5	6.9	7.3	7.8	8.2
17	1.2	1.4	1.6	1.9	2.1	2.5	2.8	3.1	3.5	3.8	4.2	4.6	5.0	5.4	5.8	6.2	6.6	7.0	7.4	7.8
18	1.2	1.4	1.6	1.8	2.1	2.4	2.7	3.0	3.4	3.7	4.1	4.4	4.8	5.2	5.6	5.9	6.3	6.7	7.0	7.4
19	1.2	1.4	1.6	1.8	2.1	2.4	2.7	3.0	3.3	3.6	4.0	4.3	4.6	5.0	5.3	5.7	6.0	6.4	6.7	7.1
20	1.2	1.3	1.6	1.8	2.0	2.3	2.6	2.9	3.2	3.5	3.8	4.2	4.5	4.8	5.2	5.5	5.8	6.1	6.5	6.8

ATTACHMENT 2

Comparability of Intake and Discharge Waters

Table A: Discharge Monitoring Report Data (Sept. 2019 – Aug. 2024)				
DMR data for DSN 101			**DMR data for DSN 102**	
Date	Cu µg/l (Intake)	Cu µg/l (Discharge)	Cu µg/l (Intake)	Cu µg/l (Discharge)
Sept.2019	31	0	44	22
Dec. 2019	25	0	63	17
Mar. 2020	34	0	26	15
Jun. 2020	43	16	35	20
Sept.2020	230	67	144	71
Dec. 2020	48	30	---	---
Mar. 2021	38	24	34	25
Jun. 2021	52	17	91	0
Sept.2021	77	27	70	32
Dec. 2021	115	32	34	13
Mar. 2022	45	37	55	25
Jun. 2022	59	13	89	28
Sept.2022	49	19	29	27
Dec. 2022	63	23	27	17
Mar. 2023	62	26	16	14
Jun. 2023	51	25	80	25
Sept.2023	13	8	31	25
Dec. 2023	44	25	126	157
Mar. 2024	25	16	79	28
Mean	58.105	21.316	59.611	31.166