National Pollutant Discharge Elimination System Permit
Issued To

Project Oceanology
1080 Shennecossett Road
Groton, CT 06340

Location Address:

1080 Shennecossett Road
Groton, CT 06340

Permit ID CT0030562

Receiving Water Body: Long Island Sound

Effective Date: October 1, 2023

Issuance Date: September 13, 2023

Receiving Water Body ID: CT-E1_013

Permit Expires: September 30, 2028

SECTION 1: GENERAL PROVISIONS

(A) This permit is reissued in accordance with Section 22a-430 of Chapter 446k, Connecticut General Statutes ("CGS"), and Regulations of Connecticut State Agencies ("RCSA") adopted thereunder, as amended, and Section 402(b) of the Clean Water Act ("CWA"), as amended, 33 USC 1251, *et. seq.*, and pursuant to an approval dated September 26, 1973, by the Administrator of the United States Environmental Protection Agency for the State of Connecticut to administer a NPDES permit program.

(B) **Project Oceanology** ("Permittee") shall comply with all conditions of this permit including the following sections of the RCSA which have been adopted pursuant to section 22a-430 of the CGS and are hereby incorporated into this permit. Your attention is especially drawn to the notification requirements of subsections (i)(2), (i)(3), (j)(1), (j)(6), (j)(8), (j)(9)(C), (j)(10)(C), (j)(11)(C), (D), (E), and (F), (k)(3) and (4) and (*l*)(2) of Section 22a-430-3.

Section 22a-430-3: *General Conditions*

(a) Definitions
(b) General
(c) Inspection and Entry
(d) Effect of a Permit
(e) Duty to Comply
(f) Proper Operation and Maintenance
(g) Sludge Disposal
(h) Duty to Mitigate
(i) Facility Modifications; Notification
(j) Monitoring, Records and Reporting Requirements
(k) Bypass
(*l*) Conditions Applicable to POTWs
(m) Effluent Limitation Violations (Upsets)
(n) Enforcement
(o) Resource Conservation
(p) Spill Prevention and Control
(q) Instrumentation, Alarms, Flow Recorders
(r) Equalization

Section 22a-430-4: *Procedures and Criteria*

(a) Duty to Apply
(b) Duty to Reapply
(c) Application Requirements
(d) Preliminary Review
(e) Tentative Determination
(f) Draft Permits, Fact Sheets
(g) Public Notice, Notice of Hearing
(h) Public Comments
(i) Final Determination
(j) Public Hearings
(k) Submission of Plans and Specifications, Approval
(*l*) Establishing Effluent Limitations and Conditions
(m) Case by Case Determinations
(n) Permit Issuance or Renewal
(o) Permit Transfer
(p) Permit Revocation, Denial or Modification
(q) Variances
(r) Secondary Treatment Requirements
(s) Treatment Requirements
(t) Discharges to POTWs - Prohibitions

(C) Violations of any of the terms, conditions, or limitations contained in this permit may subject the permittee to enforcement action including, but not limited to, seeking penalties, injunctions and/or forfeitures pursuant to applicable sections of the CGS and RCSA.

(D) Any false statement in any information submitted pursuant to this permit may be punishable as a criminal offense under section 22a-438 or 22a-131a of the CGS or in accordance with section 22a-6, under section 53a-157b of the CGS.

(E) The authorization to discharge under this permit may not be transferred without prior written approval of the Commissioner of Energy and Environmental Protection ("Commissioner"). To request such approval, the permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least thirty days prior to the transferee becoming legally responsible for creating or maintaining any discharge which is the subject of the permit transfer. Failure, by the transferee, to obtain the Commissioner's approval prior to commencing such discharge(s) may subject the transferee to enforcement action for discharging without a permit pursuant to applicable sections of the CGS and RCSA.

(F) No provision of this permit and no action or inaction by the Commissioner shall be construed to constitute an assurance by the Commissioner that the actions taken by the permittee pursuant to this permit will result in compliance or prevent or abate pollution.

(G) Nothing in this permit shall relieve the permittee of other obligations under applicable federal, state and local law.

(H) An annual fee shall be paid for each year this permit is in effect as set forth in section 22a-430-7 of the RCSA.

(I) The permittee shall operate and maintain its collection and treatment system in accordance with its Operation and Maintenance Plan and with any approvals issued in accordance with RCSA section 22a-430-3(i)(3).

SECTION 2: DEFINITIONS

(A) The definitions of the terms used in this permit shall be the same as the definitions contained in section 22a-423 of the CGS and Section 22a-430-3(a) and 22a-430-6 of the RCSA.

(B) In addition to the above, the following definitions shall apply to this permit:

"40 CFR" means Title 40 of the Code of Federal Regulations.

"Average Monthly Limit" means the maximum allowable "Average Monthly Concentration" as defined in section 22a-430-3(a) of the RCSA when expressed as a concentration (e.g., mg/l). Otherwise, it means "Average Monthly Discharge Limitation" as defined in Section 22a-430-3(a) of the RCSA.

Connecticut Water Quality Standards means the regulations adopted under RCSA sections 22a-426-1 through 22a-426-9, as amended.

"Daily Concentration" means the concentration of a substance as measured in a daily composite sample, or the arithmetic average of all grab sample results defining a grab sample average.

"Daily Quantity" means the quantity of waste discharged during an operating day.

"Dilution Factor" means the inverse of the "Instream Waste Concentration".

"DMR" means Discharge Monitoring Report.

"Instantaneous Limit" means the highest allowable concentration of a substance as measured by a grab sample, or the highest allowable measurement of a parameter as obtained through instantaneous monitoring.

"Maximum Daily Limit" means the maximum allowable "Daily Concentration" (defined above) when expressed as a concentration (e.g., mg/l). Otherwise, it means the maximum allowable "Daily Quantity" as defined above, unless it is expressed as a flow quantity. If expressed as a flow quantity, it means "Maximum Daily Flow" as defined in Section 22a-430-3(a) of the RCSA.

"Range During Sampling" ("RDS"), as a sample type, means the maximum and minimum of all values recorded as a result of analyzing each grab sample of: 1) a Composite Sample or, 2) a Grab Sample Average. For those permittees with continuous monitoring and recording pH meters, Range During Sampling means the maximum and minimum readings recorded with the continuous monitoring device during the Composite or Grab Sample Average sample collection.

"Reporting Frequency" means the frequency at which monitoring results must be provided.

"Semi-annual" when used as a sampling frequency in this permit, means that sample reporting is required in the months of March and September.

SECTION 3: COMMISSIONER'S DECISION

(A) The Commissioner has issued a final determination and found that the discharge will not cause pollution of the waters of the state. The Commissioner's decision is based on Application 201607853 for permit issuance received on June 23, 2016 and the administrative record established in the processing of that application.

(B) From the effective date of this permit, for a term not to exceed five years and until this permit expires or is modified or revoked, the Commissioner hereby authorizes the Permittee to discharge in accordance with the terms and conditions of Permit No. CT0030562, issued by the Commissioner to the Permittee on the issuance date, Application No. 201607853 received by the Department of Energy and Environmental Protection ("DEEP") on June 23, 2016, and all modifications and approvals issued by the Commissioner or the Commissioner's authorized agent for the discharge and/or activities authorized by, or associated with, Permit No. CT0030562 following the issuance date of this permit.

(C) The Commissioner reserves the right to make appropriate revisions to the permit in order to establish any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the Federal Clean Water Act or the CGS or regulations adopted thereunder, as amended. The permit as modified or renewed under this paragraph may also contain any other requirements of the Federal Clean Water Act or the CGS or regulations adopted thereunder which are then applicable.

SECTION 4: GENERAL EFFLUENT LIMITATIONS

(A) The permittee shall assure that the surface water affected by the subject discharge shall conform to the *Connecticut Water Quality Standards*.

(B) No discharge shall contain, or cause in the receiving stream, a visible oil sheen or floating solids, or cause visible discoloration or foaming in the receiving stream.

(C) No discharge shall cause acute or chronic toxicity in the receiving water body beyond any zone of influence specifically allocated to that discharge in this permit.

(D) The temperature of any discharge shall not increase the temperature of the receiving stream above 85 °F, or in any case, raise the temperature of the receiving stream by more than 4 °F.

SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The discharge is restricted by and shall be monitored in accordance with the following tables in this section. The wastewater discharge shall not exceed the effluent limitations in these tables and shall otherwise conform to the specific terms and conditions listed in the tables. The permittee shall comply with the "Remarks" and "Footnotes" noted in the tables that follow. Such remarks and footnotes are enforceable like any other term or condition of this permit.

(B) All samples shall be comprised of only the wastewater described in these tables. Samples shall be collected prior to combination with receiving waters or wastewater of any other type, and after all approved treatment units, if applicable. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. Collection of permit required effluent samples in any location other than the authorized location noted in this permit shall be a violation of this permit.

(C) In cases where limits and sample type are specified but sampling is not required by this permit, the limits specified shall apply to all samples which may be collected and analyzed by the DEEP personnel, the permittee, or other parties.

Table A

Discharge Serial Number: **001**		Monitoring Location: **1**
Wastewater Description: **Aquarium wastewater**		
Monitoring Location Description: **Aquarium Tank**		
Discharge is to: **Long Island Sound**	Dilution Factor: **None**	Outfall Location: **Lat: 41 19' 02.9: N Long: 72 03' 44" W**

PARAMETER	NET DMR CODE	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
			Average Monthly Limit	Maximum Daily Limit	Sample/ Reporting Frequency [1]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency[1]	Sample Type or measurement to be reported
Flow (Day of Sampling)	74076	gpd	NA	----	Semi-annually	Total Daily Flow[2]	NA	NR	NA
Nitrogen, Total	00600	mg/L	NA	NA	NR	NA	----	Semi-Annual	Grab
pH, Day of Sampling	00400	SU	NA	NA	NR	NA	6.8 - 8.0	Semi-Annual	RDS
Phosphorus, Total	00665	mg/L	NA	NA	NR	NA	----	Semi-Annual	Grab
Total Suspended Solids	00530	mg/L	NA	NA	NR	NA	----	Semi-Annual	Grab

TABLE A FOOTNOTES AND REMARKS

Footnotes:

[1] The first entry in this column is the "Sample Frequency". If a "Reporting Frequency" does not follow this entry then the "Reporting Frequency" is monthly.

[2] Flow may be calculated based on tank volume and the tank's daily percentage of volume replaced in a day. The calculations must be included as an attachment to the DMR.

Remarks:

1. Abbreviations used for units are as follows: gpd means gallons per day; mg/L means milligrams per liter; SU means Standard Units. Other abbreviations are as follows: NA means Not Applicable; NR means Not Reportable.

2. If "---" is noted in the limits column in the table, this means that a limit is not specified but a value must be reported on the DMR.

SECTION 6: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES

(A) All samples shall be collected, handled, and analyzed in accordance with the methods approved under 40 CFR 136, unless another method is required under 40 CFR subchapter N or unless an alternative method has been approved in writing pursuant to 40 CFR 136.5. To determine compliance with limits and conditions established in this permit, monitoring must be performed using sufficiently-sensitive methods approved pursuant to 40 CFR 136 for the analysis of pollutants having approved methods under that part, unless a method is required under 40 CFR subchapter N or unless an alternative method has been approved in writing pursuant to 40 CFR 136.5.

(B) All metals analyses identified in this permit shall refer to analyses for Total Recoverable Metal as defined in 40 CFR 136, unless otherwise specified.

(C) The term Minimum Level (ML) refers to either the sample concentration equivalent to the lowest calibration point in a method or a multiple of the method detection limit (MDL). MLs may be obtained in several ways: They may be published in a method; they may be sample concentrations equivalent to the lowest acceptable calibration point used by the laboratory; or they may be calculated by multiplying the MDL in a method, or the MDL determined by a lab, by a factor. The Minimum Levels specified in the Section 5 table represent the maximum concentrations at which quantification must be achieved and verified during the chemical analyses for those noted parameters. Analyses for these parameters must include check standards within ten percent of the specified Minimum Level or calibration points equal to or less than the specified Minimum Level.

(D) The value of each parameter for which monitoring is required under this permit shall be reported to the maximum level of accuracy and precision possible, consistent with the requirements of this section of the permit.

(E) Analyses for which quantification was verified to be at or below an ML, and which indicate that a parameter was not detected, shall be reported as "less than x" where 'x' is the numerical value equivalent to the ML for that analysis. If the permittee is required to submit its DMRs through the NetDMR system, the permittee shall report the non-detect value consistent with the reporting requirements for NetDMR.

(F) Results of analyses which indicate that a parameter was not present at a concentration greater than or equal to the ML specified for that analysis shall be considered equivalent to zero for purposes of determining compliance with effluent limitations or conditions specified in this permit.

(G) It is a violation of this permit for a permittee or his/her designated agent, to manipulate test samples in any manner, to delay sample shipment, or to terminate or to cause to terminate a toxicity test. Once initiated, all toxicity tests must be completed.

(H) Analyses required under this permit shall be performed in accordance with CGS section 19a-29a. An "environmental laboratory", as that term is defined in the referenced section, that is performing analyses required by this permit, shall be registered and have certification acceptable to the Commissioner, as such registration and certification is necessary.

SECTION 7: REPORTING REQUIREMENTS

(A) The results of chemical analyses and any aquatic toxicity test required by this permit will be submitted electronically by or on behalf of the NPDES-regulated facility, any person providing the electronic signature for such documents shall meet all relevant requirements of this section, and shall ensure that all of the relevant requirements of 40 CFR part 3 (including, in all cases, subpart D to part 3) (Cross-Media Electronic Reporting) and 40 CFR part 127 (NPDES Electronic Reporting Requirements) are met for that submission.

(B) Monitoring results will be reported at the monitoring frequency specified in this permit. Any monitoring required more frequently than monthly will be reported on an attachment to the DMR, and any additional monitoring conducted in accordance with 40 CFR 136, or another method required for an industry-specific waste stream under 40 CFR subchapter N or O, or other methods approved by the Commissioner, will also be included on the DMR, or as an attachment, if necessary, and the results of such monitoring will be included in the calculation and reporting of the data submitted in the DMR. All aquatic toxicity reports will also be included as an attachment to the DMR. A report will also be included with the DMR which includes a detailed explanation of any violations of the limitations specified.

(C) NETDMR REPORTING REQUIREMENTS. The Permittee will report electronically using NetDMR, a web-based tool that allows Permittees to electronically submit Discharge Monitoring Reports (DMRs) and other required reports through a secure internet connection. Specific requirements regarding NetDMR, submittal of reports using NetDMR, are described below:

(D) SUBMITTAL OF NETDMR SUBSCRIBER AGREEMENT. The Permittee will electronically submit the signed Connecticut DEEP NetDMR Subscriber Agreement to DEEP at deep.netdmr@ct.gov prior to using NetDMR.

(E) SUBMITTAL OF REPORTS USING NETDMR. The Permittee and/or the signatory authority will electronically submit DMRs and applicable reports required under this permit to DEEP using NetDMR. DMRs will be submitted electronically no later than the last day of the month following the completed reporting period. The Permittee will also electronically file any written report of noncompliance as an attachment in NetDMR. NetDMR is accessed from: https://npdes-ereporting.epa.gov/net-netdmr

(F) "NO DISCHARGE" SUBMISSIONS. If this permit requires monitoring of a discharge, but a discharge has not occurred within the frequency of sampling specified in the permit, the Permittee must submit the DMR and ATMR, as scheduled, indicating "NO DISCHARGE". For those Permittees whose required monitoring is discharge dependent (e.g., per batch), the minimum reporting frequency is monthly. Therefore, if there is no discharge during a calendar month for a batch discharge, a DMR must be submitted indicating such by the end of the following month.

SECTION 8: RECORDING AND REPORTING OF VIOLATIONS, ADDITIONAL TESTING REQUIREMENTS

(A) In addition to any other written reporting requirements, the permittee shall report any instances of noncompliance with this permit with its DMR. Such reporting shall be due no later than the last day of the month following the reporting period in which the noncompliant event occurred. The information provided in the DMR shall include, at a minimum: the type of violation, the duration of the violation, the cause of the violation, and any corrective action(s) or preventative measure(s) taken to address the violation.

(B) The permittee shall notify the Bureau of Materials Management and Compliance Assurance, Water Permitting and Enforcement Division, within 72 hours and in writing within thirty days of the discharge of any substance listed in the application, but not listed in the permit, if the concentration or quantity of that substance exceeds two times the level listed in the application.

(C) If any sample analysis indicates that an aquatic toxicity effluent limitation in Section 5 of this permit has been exceeded, or that the test was invalid, another sample of the effluent shall be collected and tested for aquatic toxicity and associated chemical parameters, as described above in Section 7, and the results reported to the Bureau of Materials Management and Compliance Assurance (Attn: DMR Processing), at the address listed above, within 30 days of the exceedance or invalid test. Results of all tests, whether valid or invalid, shall be reported.

(D) If any two consecutive test results or any three test results in a twelve-month period indicate that an aquatic toxicity limit has been exceeded, the permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall also submit a report, for the review and written approval of the Commissioner, which describes in detail the steps taken or that shall be taken to eliminate the toxic impacts of the discharge on the receiving water and it shall also include a proposed schedule for implementation. Such report shall be submitted in accordance with the timeframe set forth in section 22a-430-3(j)(10)(C) of the RCSA. The permittee shall implement all actions in accordance with the approved report and schedule.

This permit is hereby issued on September 13, 2023.

JENNIFER L PERRY, P.E.
Bureau Chief

JP/PB

National Pollutant Discharge Elimination System Permit Fact Sheet

SECTION 1 FACILITY SUMMARY

APPLICANT	Project Oceanology
PERMIT NO.	CT0030562
APPLICATION NO.	201607853
DATE APPLICATION RECEIVED	June 23, 2016
LOCATION ADDRESS	1080 Shennecossett Road Groton, CT 06340
FACILITY CONTACT	Andrew Ely Office Phone: 860 445-9007 ext: 307 Email: aely@oceanology.org
MAILING ADDRESS	1080 Shennecossett Road Groton, CT 06340
DMR CONTACT	Andrew Ely Office Phone: 860 445-9007 ext: 307 Email: aely@oceanology.org
SECRETARY OF STATE BUSINESS ID	0011907514
PERMIT TERM	5 Years
PERMIT CATEGORY	Minor NPDES
SIC CODE(S)	8221
APPLICABLE EFFLUENT GUIDELINES	None
PERMIT TYPE	Reissuance
OWNERSHIP	State
RECEIVING WATER	DSN 001- Long Island Sound
WATERBODY SEGMENT ID'S	DSN 001- CT-E1_013
WATERBODY CLASSIFICATION	SB
DISCHARGE LOCATIONS	DSN 001 Latitude 41 19' 02.9" N Longitude 72 03' 44" W
COMPLIANCE ACTIONS	None
DEEP STAFF ENGINEER	Patrick Bieger Patrick.bieger@ct.gov

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1.1 PERMIT FEES

***Application Fee**:*

Filing Fee	Invoice No.: $1,300	Amount: $1,300.00	Date Paid: 6/24/2016
Processing Fee	Invoice No.: N/A	Amount: N/A	Date Paid: N/A

Annual Fee:

	WASTEWATER CATEGORY (per 22a-430-7)	FLOW CATEGORY	DSN	ANNUAL FEE (per 22a-430-7 and CGS 22a-6f)
	Non-Contact Cooling Water	0 – 100,000 gpd	001	$350
TOTAL				**$350**

The discharge does not fall under any specific category under Section 22a-430-7 of the Regulations of Connecticut State Agencies (RCSA). The annual fee structure was chosen based on the minimal amount of discharge, nature of discharge, and recognizing Project Oceanography is an educational nonprofit entity.

1.2 OTHER PERMITS

Not Applicable

1.3 APPLICATION INFORMATION

On June 23, 2016, the Department of Energy and Environmental Protection ("DEEP") received an application (Application 201607853) from Project Oceanology ("Permittee", "Applicant") based in Groton, CT for the renewal of its NPDES permit, Permit No. CT0030562, expiring on June 28, 2016 ("the previous permit"). Consistent with the requirements of Section 22a-6g of the Connecticut General Statutes (CGS), the applicant caused a Notice of Permit Application to be published in the New London Day on June 16, 2016. On July 14, 2016, the application was determined to be administratively sufficient.

The permittee seeks authorization for the following in Application No. 201607853:

DSN	PROPOSED AVERAGE DAILY FLOW (gpd)	PROPOSED MAXIMUM DAILY FLOW (gpd)	PROPOSED WASTESTREAMS	TREATMENT TYPE	DISCHARGE TO
001	500	2,500	Aquarium wastewater	N/A	Long Island Sound

1.4 COMPLIANCE HISTORY

There were no effluent violations reported in the last 5 years.

Is the Permittee subject to an ongoing enforcement action? ☐ Yes ☑ No

Did the previous permit have a compliance schedule? ☐ Yes ☑ No

1.5 DESCRIPTION OF INDUSTRIAL PROCESS

Project Oceanography is a non-profit organization that provides aquatic life education. The wastewater of the aquarium tanks is discharged to the Long Island Sound ("LIS" or "Sound") by way of DSN 001 under this proposed permit.

1.6 FACILITY DESCRIPTION

The facility is a sea research and educational facility that hosts summer camps, classes, and trips. The only wastewater authorized by this permit is the discharge from the aquarium tanks that are used as educational aids. These tanks are filled with water from the Long Island Sound and local fish that have been caught in the nearby waters of the Long Island Sound. The facility has a water intake that runs 24 hours a day, water is siphoned from the intake pipes to be used in the tanks. The rest of the water is discharged back into the Long Island Sound. The facility withdraws approximately 80,000-90,000 gpd. The water that is not used in the tanks for aquatic life is not altered in any way, thus is directly discharged back into the Long Island Sound and a NPDES permit is not required for this activity.

The aquarium tanks at the facility are designed as flow through with an approximate 10% recycle rate (~200 gpd). The facility is in the process of installing a new tank and the recycle rate may slightly increase once installed. The water in the tanks is not chemically altered once water is withdrawn and the tanks are cleaned with the water from the Long Island Sound.

The discharge from the tanks comingles with the rest of the intake water before being discharged back into the Long Island Sound.

1.7 FACILITY CHANGES

The facility is in the process of replacing the old tanks The replacement new tanks will consist of a 12' rack system (600 gallons), 8'x3'x3' tank (360 gallons), 6.5'x18" touch tank (200 gallons), and 2, 4'x 2.5' round tanks (240 gallons each). The 12' rack system will have a heater and a filter. All tanks are scheduled to be installed by Spring 2025.

In 2023, a project to remove the trough floor drains was completed. The new floor drains were raised to prohibit discharges from spills to the Long Island Sound.

1.8 TREATMENT SYSTEM DESCRIPTION

Based on the activities and operations of the facility, as a flow through aquarium, the facility does not operate a wastewater treatment system. The quality of the discharge does not require the facility to have a treatment system to protect the waters of the state from pollution.

1.9 GENERAL ISSUES RELATED TO THE APPLICATION

1.9.1 FEDERALLY RECOGNIZED INIDAN LAND
The facility is not located on federally recognized Indian land.

1.9.2 COASTAL AREA/COASTAL BOUNDARY
The discharge falls within the coastal boundary and CGS Sections 22a-92(a)(1,2, and 9) are applicable to the discharge. Based on a review of the application there should be no adverse impacts from the operations of the facility and its discharge.

1.9.3 ENDANGERED SPECIES
There are no endangered species located at the site of the facility or discharge that would be impacted by the discharge.

1.9.4 AQUIFER PROTECTION AREAS
The discharge is not located in an aquifer protection area.

1.9.5 CONSERVATION OR PRESERVATION RESTRICTION
The property is not subject to a conservation or preservation restriction.

1.9.6 PUBLIC WATER SUPPLY WATERSHED
The facility is not located in a public supply watershed.

SECTION 2.0 RECEIVING WATER BODY INFORMATION

The discharge flows into section CT-E1_013 of the Long Island Sound. This section of the Long Island Sound is covered under the TMDL for Dissolved Oxygen (A Total Maximum Daily Load Analysis to Achieve Water Quality Standards for Dissolved Oxygen in Long Island Sound) and can be accessed here: Total Maximum Daily Load for Long Island Sound (ct.gov) and a Bacteria TMDL for Estuary 11: New London/Groton and can be accessed here: CT Statewide Bacteria TMDL.

This section of the Long Island Sound is designated as SB and contains a shellfish bed used for harvesting.

Domestic sewage at the facility is routed to the publicly owned treatment works and there are no wasteload allocations assigned to this facility in the TMDLs; hence dissolved oxygen and *E. Coli* sampling is not being required in the permit.

In combination with the water withdrawn from the LIS and characteristics of the discharge, phosphorus and nitrogen are expected to be present in the discharge. Due to the minimal volume of water and the fact that all sources of pollutants are naturally occurring either from the source water (Long Island Sound) or from the fish that were caught in the LIS it is not expected that the discharge will have an impact on the dissolved oxygen levels at the discharge location. Phosphorus and nitrogen are included as monitoring parameters in the permit to evaluate the concentration of nutrients entering the LIS to update water quality models for future analysis.

SECTION 3.0 PERMIT CONDITIONS AND EFFLUENT LIMITATIONS

3.1 EFFLUENT GUIDELINES

The following federal Effluent Limit Guidelines ("ELGs") were reviewed to determine their applicability to the facility's discharge, DSN 001:

§ 40 CFR 451 Concentrated Aquatic Animal Production Point Source Category. The activities performed at Project Oceanology do not fall under the definition of a concentrated aquatic animal production facility as found in 40 CFR 122.24 and they do not produce fish for commercial sale; therefore, there are no applicable federal ELGs for this type of activity.

3.2 POLLUTANTS OF CONCERN

The following pollutants are included as monitoring pollutants in the permit for the reasons noted below:

POLLUTANT	REASON FOR INCLUSION			
	POLLUTANT WITH AN APPLICABLE TECHNOLOGY-BASED LIMIT	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
Total Suspended Solids			x	
Phosphorus			x	
Nitrogen Total			x	
pH			x	

3.3 BASIS FOR LIMITS

Technology and water-quality based requirements are considered when developing permit limits. Technology-based limits represent the minimum level of control imposed under the Clean Water Act ("CWA"). Industry-specific technology-based limits are set forth in 40 CFR 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*.

3.4 MIXING ZONE

A mixing zone has not been allocated in this permit.

3.5 RESONABLE POTENTIAL ANALYSIS

Pursuant to CWA § 301(b)(1)(C) and 40 CFR § 122.44(d)(1), NPDES permits must contain any requirements in addition to TBELs that are necessary to achieve water quality standards established under § 303 of the CWA. *See also* 33 U.S.C. § 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 § 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 § 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 WQBELs for that pollutant. *See* 40 CFR § 122.44(d)(1)(i).

Due to the facility's activities and nature of water being discharged, the minimal volume, and the location of the discharge, there is no reasonable potential for the water to contribute to an excursion above the water quality standards.

3.6 WATERBODY AMBIENT CONDITIONS

The receiving waterbody is characterized as estuarine and tidally influenced.

3.7 WHOLE EFFLUENT TOXICITY

The permittee shall comply with effluent standards or prohibitions established by section 307(a) of the Federal Clean Water Act 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. Toxicity is not expected in the effluent, hence monitoring is not required at this time. The discharge from the facility should be characteristically identical to the waters of the Long Island Sound. Therefore, no acute or chronic whole effluent toxicity testing is being required in the permit.

3.8 WATER QUALITY BASED EFFLUENT LIMITATIONS

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 § 301(b)(1)(C) and 40 CFR §§ 122.44(d)(1),122.44(d)(5), 125.84(e) and 125.94(i).

There are no numeric water quality criteria for the parameters monitored under this permit. The facility must comply with the narrative water quality criteria.

3.9 TECHNOLOGY BASED EFFLUENT LIMITATIONS

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.

Subpart A of 40 CFR Part 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.

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

There are no technology based effluent limitations applicable to this discharge.

3.10 COMPARISON OF LIMITS

After preparing and evaluating applicable technology-based effluent limitations and water quality-based effluent limitations, the most stringent limits are applied in the permit. Pollutants of concern that only require monitoring without limits with are not included in the below table and discussed above in Section 3.

PARAMETER	UNITS	LIMITS	
		BPJ	
		AVERAGE MONTHLY LIMIT OR pH Minimum	MAXIMUM DAILY LIMIT OR pH Maximum
TSS	mg/l	NA	----
Phosphorus	mg/l	NA	----
Nitrogen, Total	mg/l	NA	----
pH	S.U.	6.8	8.5

3.11 SAMPLING FREQUENCY, TYPE, AND REPORTING

Sample Type	Sample Frequency	Parameter	Reason
Grab RCSA section 22a-430-3(j) (7)	Semi-annual	TSS	RCSA Section 22a-430-4(l)(4)(A) and 22a-430-4(m) Source: Intake water and nature of activity
		Phosphorus	RCSA Section 22a-430-4(l)(4)(A) and 22a-430-4(m) Source: Intake water and nature of activity
		Nitrogen, Total	RCSA Section 22a-430-4(l)(4)(A) and 22a-430-4(m) Source: Intake water and nature of activity

3.12 OTHER PERMIT CONDITIONS

For the purposes of monitoring in the facility, the permittee is authorized to collect and analyze samples from any of the aquarium tanks and it will be considered representative of all aquarium tank water.

3.13 COMPLIANCE SCHEDULE

Does the permit contain a compliance schedule? ☐ Yes ☑ No

3.14 ANTIDEGRADATION

Implementation of the Antidegradation Policy follows a tiered approach pursuant to the federal regulations (40 CFR 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.

The facility discharges to section CT-E1_013 of the Long Island Sound. This section of the Sound is currently being used for fish habitat, transportation, and a shellfish bed that's harvested for human consumption. The discharge is characteristically identical to the Long Island Sound. Therefore, the discharge under this permit will maintain the designated uses of the waterbody and will not affect the water quality of the Long Island Sound.

3.15 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 122.44(l).

3.16 CATEGORICAL DISCHARGE CONDITIONS

The discharge does not fall under any categorical standards.

3.17 VARIANCES AND WAIVERS

The permittee did not request a variance or waiver; hence none have been provided.

SECTION 4 SUMMARY OF NEW PERMIT CONDITIONS AND LIMITS

Based on DEEPs evaluation of the facility's temperature data, DEEP has removed temperature monitoring from this permit. From June 2018 to July 2023 the temperature difference from the intake to the discharge has never been greater than 1 degree Fahrenheit. One of the new tanks being installed will contain a heater. However, the tank's temperature will be similar to the Long Island Sound's since the fish held in the tank are sourced from the Sound. Therefore, DEEP does not expect a thermal impact on the Long Island Sound as a result of the discharge or addition of a heater in the tank.

DEEP is altering the monitoring location in this permit due to sampling challenges as a result of the tidally influenced area at the outfall pipe. Additionally, as discussed above, the intake water discharge is no longer regulated by this permit as the discharge is comprised of flow through unaltered water from the Long Island Sound. The new monitoring location is one of the aquarium tanks.

Based on DEEPs evaluation of the facility's ammonia data, ammonia is being removed as a monitoring parameter as sampling data from June 2018 to June 2023 have only shown two concentrations above non-detect. The highest concentration of 0.37 mg/l is below the ammonia water quality criteria for salt water and is no longer a pollutant of concern.

The pH limit has been changed to 6.8-8.5 from 6.0-9.0 to follow Connecticut's water quality criteria for pH in SB classified waters.