NPDES PERMIT

issued to

Location Address:

Sea Research Foundation, Inc.
d/b/a/ Mystic Aquarium, Institute for Exploration
55 Coogan Boulevard
Mystic, CT 06355

Sea Research Foundation, Inc.
d/b/a/ Mystic Aquarium, Institute for Exploration
55 Coogan Boulevard
Mystic, CT 06355

Facility ID: 137-024

Permit ID: CT0020630

Receiving Stream: Mystic River

Permit Expires: March 17, 2014

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, 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 an N.P.D.E.S. permit program.

(B) Sea Research Foundation, Inc., d/b/a/ Mystic Aquarium, Institute for Exploration("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 subsection (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
(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 for Metals and Cyanide
(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 Environmental Protection ("Commissioner"). To request such approval, the Permittee and proposed transferee shall register such proposed transfer with the Commissioner, at least 30 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 discharges 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 Regulations of Connecticut State Agencies.

(I) This permitted discharge is consistent with the applicable goals and policies of the Connecticut Coastal Management Act (section 22a-92 of the Connecticut General Statutes).

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, except for "No Observable Acute Effect Level (NOAEL)" which is redefined below.

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

"-----" in the limits column on the monitoring table means a limit is not specified but a value must be reported on the DMR

"Annual" in the context of any sampling frequency found in Section 5, shall mean the sample must be collected in the month of July or next sampling event.

"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.

"Critical Test Concentration (CTC)" means the specified effluent dilution at which the Permittee is to conduct a single-concentration Aquatic Toxicity test.

"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.

"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.

"In stream Waste Concentration (IWC)" means the concentration of a discharge in the receiving water after mixing has occurred in the allocated zone of influence.

"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.

"NA" as a Monitoring Table abbreviation means “not applicable”.

"No Observable Acute Effect Level (NOAEL)" means any concentration equal to or less than the critical test concentration in a single concentration (pass/fail) toxicity test conducted pursuant to section 22a-430-3(j)(7)(A)(i) RCSA demonstrating 90% or greater survival of test organisms at the CTC.

"NR" as a Monitoring Table abbreviation means “not required”.

"Range During Month" ("RDM"), as a sample type, means the lowest and the highest values of all of the monitoring data for the reporting month.

"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.

"Semi-Annual" in the context of a sampling frequency, means the sample must be collected in the month of January and July.

"ug/l" means micrograms per liter.

SECTION 3: COMMISSIONER'S DECISION

(A) The Commissioner of Environmental Protection has issued a final determination and found that continuance of the existing system to treat the discharge would protect the waters of the state from pollution. The Commissioner's decision is based on Application No. 200501189 for permit reissuance received on May 4, 2005 and the administrative record established in the processing of that application.

(B) The Commissioner hereby authorizes the Permittee to discharge in accordance with the provisions of this permit, the above referenced application, and all approvals issued by the Commissioner or the Commissioner's authorized agent for the discharges and/or activities authorized by, or associated with, 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 CGS or regulations adopted thereunder which are then applicable.

SECTION 4: GENERAL EFFLUENT LIMITATIONS

(A) 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.

(B) 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.

(C) The temperature of any discharge shall not increase the temperature of the receiving stream above 83^{o}F, or, in any case, raise the temperature of the receiving stream by more than 4^{o}F. The incremental temperature increase in coastal and marine waters is limited to 1.5^{o}F during the period including July, August and September.

SECTION 5: SPECIFIC EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

(A) The discharges shall not exceed and shall otherwise conform to the specific terms and conditions listed below. The discharges are restricted by, and shall be monitored in accordance with, the tables below:

Table A

Discharge Serial Number: 001a | **Monitoring Location:** 1

Wastewater Description: Draining, Cleaning and/or Disinfection of 2,500 gallon holding tank within Stranding Area/Seal Rescue Facility

Monitoring Location Description: Directly from Stranding Area/Seal Rescue Tanks immediately prior to discharge

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING			Minimum Level Test
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample/ Reporting Frequency[2]	Sample Type or measurement to be reported	
Copper, Total	mg/l	NA	NA	NR	NA	-----	Semi-Annual	Grab	
Fecal Coliform	#/100ml	NA	NA	NR	NA	-----	each batch	Grab	
Flow, Total[1]	gpd	NA	2,500	each batch	daily flow	NA	NR	NA	
Nitrogen, Ammonia (total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab	
Nitrogen, Nitrate (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab	
Nitrogen, Nitrite (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab	
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	each batch	RDM	
Salinity	ppt	NA	NA	NR	NA	-----	each batch	Grab	
Total Residual Chlorine	mg/l	NA	NA	NR	NA	0.02 mg/l	each batch	Grab	
Total Suspended Solids	mg/l	NA	NA	NR	NA	-----	each batch	Grab	

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

[2] The first entry in this column is the 'Sample Frequency'. If a 'Reporting Frequency' does not follow this entry and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

TABLE B

Discharge Serial Number (DSN): 001a	**Monitoring Location:** T
Wastewater Description: Draining, Cleaning and/or Disinfection of 2,500 gallon holding tank within Stranding Area/Seal Rescue Facility	
Monitoring Location Description: Directly from Stranding Area/Seal Rescue Tanks immediately prior to discharge	
Allocated Zone of Influence (ZOI): 47,754 gph	**In stream Waste Concentration (IWC):** 9.4%

PARAMETER	Units	Maximum Daily Limit	Maximum Instantaneous Limit	Sampling Frequency	Sample Type	Minimum Level Analysis See Section 6
Aquatic Toxicity, Mysidopsis bahia[1] LC50	%	NA	-----	Semi-Annual	Grab	
Aquatic Toxicity, Menidia beryllina[1] LC50	%	NA	-----	Semi-Annual	Grab	
Aquatic Toxicity, Daphnia pulex[1] LC50	%	NA	-----	Semi-Annual	Grab	
Aquatic Toxicity, Pimephelas promelas[1] LC50	%	NA	-----	Semi-Annual	Grab	
Copper, Total	mg/l	NA	-----	Semi-Annual	Grab	x
Nitrogen, Ammonia (total as N)	mg/l	NA	-----	Semi-Annual	Grab	
Nitrogen, Nitrate (Total as N)	mg/l	NA	-----	Semi-Annual	Grab	
Nitrogen, Nitrite (Total as N)	mg/l	NA	-----	Semi-Annual	Grab	
Salinity	ppt	NA	-----	Semi-Annual	Grab	
Total Residual Chlorine	mg/l	NA	.02	Semi-Annual	Grab	
Total Suspended Solids	mg/l	NA	-----	Semi-Annual	Grab	

Remarks:
Note: All analysis shall be on the same sample.
[1] The results of the Toxicity Tests shall be recorded in % on the DMR.
[2] Use freshwater species if the salinity is below 2 ppt.

Table C

Discharge Serial Number: 001b | **Monitoring Location:** 1

Wastewater Description: Aquatic Animal Study Center Tank Draining, Cleaning and/or Disinfection

Monitoring Location Description: Directly from Aquatic Animal Study Center Tanks immediately prior to discharge

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported
Fecal Coliform	#/100ml	NA	NA	NR	NA	-----	each batch	Grab
Flow, Total[1]	gpd	NA	200,000	each batch	daily flow	NA	NR	NA
Nitrogen, Ammonia (total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrate (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrite (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	each batch	RDM
Total Residual Chlorine	mg/l	NA	NA	NR	NA	.02	each batch	Grab
Total Suspended Solids	mg/l	NA	NA	NR	NA	-----	each batch	Grab

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

Table D

Discharge Serial Number: 001c | **Monitoring Location:** 1

Wastewater Description: Stranding Area/Seal Rescue Draining of 400 gallon rehabilitation holding tanks

Monitoring Location Description: Directly from Stranding Area/Seal Rescue Tanks immediately prior to discharge

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported
Fecal Coliform	#/100ml	NA	NA	NR	NA	-----	Monthly	Grab
Flow, Total[1]	gpd	-----	2,800	Monthly	daily flow	NA	NR	NA
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	Monthly	Grab
Total Residual Chlorine	mg/l	NA	NA	NR	NA	.02	Monthly	Grab

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

Table E

Discharge Serial Number: 002-1 | **Monitoring Location:** 1

Wastewater Description: Marine Theater/Dolphin Tank Draining, Cleaning and/or Disinfection

Monitoring Location Description: Directly from Marine Theater/Dolphin Tanks immediately prior to discharge

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported
Flow, Total[1]	gpd	NA	409,000	each batch	daily flow	NA	NR	NA
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	each batch	RDM
Fecal Coliform	#/100ml	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Ammonia (total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrate (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrite (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Total Residual Chlorine	mg/l	NA	NA	NR	NA	0.02 mg/l	each batch	Grab
Total Suspended Solids	mg/l	NA	NA	NR	NA	-----	each batch	Grab

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

Table F

Discharge Serial Number: 003a | **Monitoring Location:** 1

Wastewater Description: Alaskan Coast Exhibit Tank Draining, Cleaning and/or Disinfection

Monitoring Location Description: Directly from Alaskan Coast Exhibit Tanks immediately prior to discharge

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported
Fecal Coliform	#/100ml	NA	NA	NR	NA	-----	each batch	Grab
Flow, Total[1]	gpd	NA	800,000	each batch	daily flow	NA	NR	NA
Nitrogen, Ammonia (total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrate (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrite (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	each batch	RDM
Total Residual Chlorine	mg/l	NA	NA	NR	NA	0.02 mg/l	each batch	Grab
Total Suspended Solids	mg/l	NA	NA	NR	NA	-----	each batch	Grab

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

Table G

Discharge Serial Number: 003b | **Monitoring Location:** 1

Wastewater Description: Seal Island Exhibit Tank Draining, Cleaning and/or Disinfection

Monitoring Location Description: Directly from Seal Island Tanks immediately prior to discharge

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported
Fecal Coliform	#/100ml	NA	NA	NR	NA	-----	each batch	Grab
Flow, Total[1]	gpd	NA	280,400	each batch	daily flow	NA	NR	NA
Nitrogen, Ammonia (total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrate (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrite (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	each batch	RDM
Total Residual Chlorine	mg/l	NA	NA	NR	NA	0.02 mg/l	each batch	Grab
Total Suspended Solids	mg/l	NA	NA	NR	NA	-----	each batch	Grab

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

Table H

Discharge Serial Number: 003c | **Monitoring Location:** 1

Wastewater Description: Exhibit area freshwater pond and stream overflow

Monitoring Location Description: Exhibit area pond and stream overflow

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency [2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency [2]	Sample Type or measurement to be reported
Copper, Total	mg/l	NA	NA	NR	NA	-----	Semi-Annual	Grab
Fecal Coliform	#/100ml	NA	NA	NR	NA	-----	each batch	Grab
Flow, Total[1]	gpd	NA	43,200	each batch	daily flow	NA	NR	NA
Nitrogen, Ammonia (total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrate (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrite (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	each batch	RDM
Total Residual Chlorine	mg/l	NA	NA	NR	NA	0.02 mg/l	each batch	Grab
Total Suspended Solids	mg/l	NA	NA	NR	NA	-----	each batch	Grab

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

TABLE I						
Discharge Serial Number (DSN): 003c			**Monitoring Location:** T			
Wastewater Description: Exhibit area freshwater pond and stream overflow						
Monitoring Location Description: Exhibit area pond and stream overflow						
Allocated Zone of Influence (ZOI): 47,754 gph				**In stream Waste Concentration (IWC):** 3.6%		
PARAMETER	**Units**	**Maximum Daily Limit**	**Maximum Instantaneous Limit**	**Sampling Frequency**	**Sample Type**	**Minimum Level Analysis See Section 6**
Aquatic Toxicity, Daphnia, Pulex [1] LC50	%	NA	-----	Annual	Grab	
Aquatic Toxicity, Pimephales promelas [1] LC50	%	NA	-----	Annual	Grab	
Copper, Total	mg/l	NA	-----	Annual	Grab	*
Nitrogen, Ammonia (total as N)	mg/l	NA	-----	Annual	Grab	
Nitrogen, Nitrate (Total as N)	mg/l	NA	-----	Annual	Grab	
Nitrogen, Nitrite (Total as N)	mg/l	NA	-----	Annual	Grab	
Total Residual Chlorine	mg/l	NA	0.02	Annual	Grab	
Total Suspended Solids	mg/l	NA	-----	Annual	Grab	

Remarks:
Note: All analysis shall be on the same sample.
[1] The results of the Toxicity Tests shall be recorded in % on the DMR.

Table J

Discharge Serial Number: 003d | **Monitoring Location:** 1

Wastewater Description: Penguin Pavilion tank draining- freshwater(chlorinated freshwater) add sodium thiosulfate to neutralize the chlorine

Monitoring Location Description: Directly from penguin pavilion tank

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported
Flow, Total[1]	gpd	NA	25,000	each batch	daily flow	NA	NR	NA
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	each batch	RDM
Fecal Coliform	#/100ml	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Ammonia (total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrate (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrite (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Total Residual Chlorine	mg/l	NA	NA	NR	NA	0.02 mg/l	each batch	Grab
Total Suspended Solids	mg/l	NA	NA	NR	NA	-----	each batch	Grab

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

Table K

Discharge Serial Number: 003e | **Monitoring Location:** 1

Wastewater Description: Pinniped holding tank draining wastewaters (ozone system)

Monitoring Location Description: Directly out of the pool

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency[2]	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency[2]	Sample Type or measurement to be reported
Flow, Total[1]	gpd	NA	5,000	each batch	daily flow	NA	NR	NA
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	each batch	RDM
Fecal Coliform	#/100ml	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Ammonia (total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrate (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Nitrogen, Nitrite (Total as N)	mg/l	NA	NA	NR	NA	-----	each batch	Grab
Total Residual Chlorine	mg/l	NA	NA	NR	NA	0.02 mg/l	each batch	Grab
Total Suspended Solids	mg/l	NA	NA	NR	NA	-----	each batch	Grab

Table Footnotes and Remarks:

Footnotes:

[1] For this parameter the Permittee shall maintain at the facility a record of the total flow for each day of discharge.

[2] The first entry in this column is the 'Sample Frequency'. If this entry is not followed by a 'Reporting Frequency' and the 'Sample Frequency' is more frequent than monthly then the 'Reporting Frequency' is monthly. If the 'Sample frequency' is specified as monthly, or less frequent, then the 'Reporting Frequency' is the same as the 'Sample Frequency'.

Table L

Discharge Serial Number: 004 | **Monitoring Location:** 1

Wastewater Description: Partial overflow and draining of Exhibit Tanks and Pools associated with routine maintenance activities

Monitoring Location Description: No monitoring required

PARAMETER	UNITS	FLOW/TIME BASED MONITORING				INSTANTANEOUS MONITORING		
		Average Monthly Limit	Maximum Daily Limit	Sample/Reporting Frequency	Sample Type or Measurement to be reported	Instantaneous limit or required range	Sample// Reporting Frequency	Sample Type or measurement to be reported
pH, Day of Sampling	S.U.	NA	NA	NR	NA	6.0 – 9.0	NA	Grab
Total Residual Chlorine	mg/l	NA	NA	NR	NA	0.02 mg/l	NA	Grab

Footnotes:

This table covers the partial lowering and draining of exhibit tanks and pools associated with routine maintenance activities. Should the level of any tank be lowered by more than one foot, it shall only be done in accordance with the restrictions provided in Tables A through K.

(1) All samples shall be comprised of only the wastewater described in this table. Samples shall be collected prior to combination with receiving waters or wastewater of any other type, and after all approved treatment units, if applicable. All samples collected shall be representative of the discharge during standard operating conditions.

(2) 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 Department of Environmental Protection personnel, the Permittee, or other parties.

(3) The limits imposed on the discharges listed in this permit take effect on the issuance date of this permit, hence any sample taken after this date which, upon analysis, shows an exceedance of permit limits will be considered non-compliance.

The monitoring requirements begin on the date of issuance of this permit if the issuance date is on or before the 12th day of a month. For permits issued on or after the 13th day of a month, monitoring requirements begin the 1st day of the following month.

SECTION 6: SAMPLE COLLECTION, HANDLING AND ANALYTICAL TECHNIQUES

(A) Chemical Analysis

(1) Chemical analyses to determine compliance with effluent limits and conditions established in this permit shall be performed using the methods approved pursuant to the 40 CFR 136 unless an alternative method has been approved in writing pursuant to 40 CFR 136.4 or as provided in section 22a-430-3(j)(7) of the RCSA. Chemicals which do not have methods of analysis defined in 40 CFR 136 shall be analyzed in accordance with methods specified in this permit.

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

(3) The Minimum Levels specified below represent the concentrations at which quantification must be achieved and verified during the chemical analyses for the parameters identified in Section 5 Table B. 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.

Parameter	Minimum Level
Copper	5.0 ug/L
Chlorine, total residual	20.0 ug/L

(4) 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.

(5) Effluent analyses for which quantification was verified during the analysis at or below the minimum levels specified in this section 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 analytical method detection limit for that analysis.

(6) Results of effluent analyses which indicate that a parameter was not present at a concentration greater than or equal to the Minimum Level specified for that analysis shall be considered equivalent to zero

(0.0) for purposes of determining compliance with effluent limitations or conditions specified in this permit.

(B) Acute Aquatic Toxicity Test

(1) Samples for monitoring of Aquatic Toxicity shall be collected and handled as prescribed in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012).

(a) Grab samples shall be chilled immediately following collection. Samples shall be held at 4 degrees Centigrade until Aquatic Toxicity testing is initiated.

(b) Effluent samples shall not be dechlorinated, filtered, or, modified in any way, prior to testing for Aquatic Toxicity unless specifically approved in writing by the Commissioner for monitoring at this facility.

(c) Chemical analyses of the parameters identified in Section 5 Table B, Table I shall be conducted on an aliquot of the same sample tested for Aquatic Toxicity.

(i) At a minimum, pH, specific conductance, salinity, total alkalinity, total hardness, and total residual chlorine shall be measured in the effluent sample and, during Aquatic Toxicity tests, in the highest concentration of test solution and in the dilution (control) water at the beginning of the test and at test termination. If Total Residual Chlorine is not detected at test initiation, it does not need to be measured at test termination. Dissolved oxygen, pH, and temperature shall be measured in the control and all test concentrations at the beginning of the test, daily thereafter, and at test termination. Salinity shall be measured in each test concentration at the beginning of the test and at test termination.

(d) Tests for Aquatic Toxicity shall be initiated within 24 hours of sample collection.

FOR FRESHWATER DISCHARGE, DSN 001a or DSN 003c

(2) Monitoring for Aquatic Toxicity to determine compliance with the permit condition on Aquatic Toxicity (invertebrate) above shall be conducted for 48-hours utilizing neonatal Daphnia pulex (less than 24-hours old)

(3) Monitoring for Aquatic Toxicity to determine compliance with the permit condition on Aquatic Toxicity (vertebrate) above shall be conducted for 48-hours utilizing larval Pimephales promelas (1-14 days old with no more than 24-hours range in age).

FOR SALINE DISCHARGE TO SALTWATER, DSN 001a (if applicable)

(2) Monitoring for Aquatic Toxicity to determine compliance with the permit condition on Aquatic Toxicity (invertebrate) above shall be conducted for 48-hours utilizing neonatal Mysidopsis bahia (1-5 days old with no more than 24-hours range in age).

(3) Monitoring for Aquatic Toxicity to determine compliance with the permit condition on Aquatic Toxicity (vertebrate) above shall be conducted for 48-hours utilizing larval Menidia beryllina (9-21 days old with no more than 24-hours range in age).

(4) Tests for Aquatic Toxicity shall be conducted as prescribed for static non-renewal acute tests in "Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms" (EPA/821-R-02-012), except as specified below.

(a) Definitive (multi-concentration) testing, with LC50 as the endpoint, shall be conducted to determine compliance with limits on Aquatic Toxicity and monitoring conditions and shall incorporate, at a minimum, the following effluent concentrations:

(i) For Aquatic Toxicity Limits expressed as LC50 values of 33% or greater: 100%, 75%, 50%, 25%, 12.5%, and 6.25%

(b) Organisms shall not be fed during the tests.

(c) Sodium lauryl sulfate or sodium dodecyl sulfate shall be used as the reference toxicant for saltwater organisms.

FOR FRESHWATER DISCHARGES, DSN 001a or 003c

(d) Synthetic freshwater prepared with deionized water adjusted to a hardness of 50 mg/L (plus or minus 5 mg/L) as CaCO3 shall be used as dilution water in tests with freshwater organisms.

(e) Copper nitrate shall be used as the reference toxicant in tests with freshwater organisms.

FOR SALT WATER DISCHARGES ONLY, 001a (if applicable)

(f) Aquatic toxicity tests with saltwater organisms shall be conducted at a salinity greater than 15 ppt.

(i) Mysidopsis bahia shall be fed during the tests.

(ii) Synthetic seawater for use as dilution water or controls shall be prepared with deionized water and artificial sea salts as described in EPA/821-R-02-012.

(iii) If the salinity of the source water is more that 5 parts per thousand higher, or lower than the culture water used for rearing the organisms, a second set of controls matching the salinity of the culture water shall be added to the test series. Test validity shall be determined using the controls adjusted to match the source water salinity.

(iv) For tests with saltwater organisms that require salinity adjustment of the effluent, chemical analyses shall be conducted on an aliquot of the effluent sample collected for Aquatic Toxicity testing and on an aliquot of the effluent following salinity adjustment. Both sets of results shall be reported on the Aquatic Toxicity Monitoring Report (ATMR).

(5) Compliance with limits on Aquatic Toxicity shall be determined as follows:

(a) For limits expressed as a minimum LC50 value, compliance shall be demonstrated when the results of a valid definitive Aquatic Toxicity test indicates that the LC50 value for the test is greater than the Aquatic Toxicity Limit.

SECTION 7: REPORTING REQUIREMENTS

(A) The results of chemical analyses and any aquatic toxicity test required above shall be entered on the Discharge Monitoring Report (DMR), provided by this office, and reported to the Bureau of Materials Management and

Compliance Assurance (Attn: DMR Processing) at the following address. The report shall also include a detailed explanation of any violations of the limitations specified. The DMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Materials Management and Compliance Assurance
Water Permitting and Enforcement Division (Attn: DMR Processing)
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(B) Complete and accurate aquatic toxicity test data, including percent survival of test organisms in each replicate test chamber, LC50 values and 95% confidence intervals for definitive test protocols, and all supporting chemical/physical measurements performed in association with any aquatic toxicity test, including measured daily flow and hours of operation for the 30 consecutive operating days prior to sample collection if compliance with a limit on Aquatic Toxicity is based on toxicity limits based on actual flows described in Section 7, shall be entered on the Aquatic Toxicity Monitoring Report form (ATMR) and sent to the Bureau of Water Protection and Land Reuse at the following address. The ATMR shall be received at this address by the last day of the month following the month in which samples are collected.

Bureau of Water Protection and Land Reuse (Attn: Aquatic Toxicity)
Connecticut Department of Environmental Protection
79 Elm Street
Hartford, CT 06106-5127

(C) If this permit requires monitoring of a discharge on a calendar basis (e.g. Monthly, quarterly, etc.), 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) If any sample analysis indicates 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 5 and Section 6, 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.

(B) If any two consecutive test results or any three test results in a twelve month period indicates that an Aquatic Toxicity Limit has been exceeded, the Permittee shall immediately take all reasonable steps to eliminate toxicity wherever possible and shall submit a report to Bureau of Materials Management and Compliance Assurance (Attn: Aquatic Toxicity) for the review and approval of the Commissioner in accordance with section 22a-430-3(j)(10)(c) of the RCSA describing proposed steps to eliminate the toxic impact of the discharge on the receiving water body. Such a report shall include a proposed time schedule to accomplish toxicity reduction and the Permittee shall comply with any schedule approved by the Commissioner.

(C) 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.

This permit is hereby issued on 3/18/2009

/S/GINA MCCARTHY
COMMISSIONER

GM/OR

DATA TRACKING AND TECHNICAL FACT SHEET

Permittee: Sea Research Foundation PAMS Company ID: 28594
d/b/a/ Mystic Aquarium, Institute for Exploration

PERMIT, ADDRESS, AND FACILITY DATA

PERMIT #: CT0020630 APPLICATION #: 200501189 FACILITY ID. 137-024

Mailing Address:						**Location Address:**					
Street:	55 Coogan Boulevard					**Street:**	same				
City:	Mystic	**ST:**	CT	**Zip:**	06355	**City:**		**ST:**	**CT**	**Zip:**	
Contact Name:	Gayle Sirpenski					**DMR Contact**					
Phone No.:	(860) 572-5955					**Phone No.:**					

PERMIT INFORMATION

DURATION 5 YEAR _x_ 10 YEAR ___ 30 YEAR ____

TYPE New _ Reissuance _x_ Modification ___

CATEGORIZATION POINT (x) NON-POINT ( ) GIS # _14502___

NPDES (x) PRETREAT () GROUND WATER(UIC) ( ) GROUND WATER (OTHER) ( )

NPDES MAJOR (MA) _____
NPDES SIGNIFICANT MINOR or PRETREAT SIU (SI) _____
NPDES or PRETREATMENT MINOR (MI) ___x___

PRETREAT SIGNIFICANT INDUS USER (SIU) _____
PRETREAT CATEGORICAL (CIU) _____
Note: If it's a CIU then check off SIU

POLLUTION PREVENTION MANDATE _ ENVIRONMENTAL EQUITY ISSUE ____

COMPLIANCE ISSUES

COMPLIANCE SCHEDULE YES NO _x_ (If yes check off what it is in relation to.)

POLLUTION PREVENTION ___ TREATMENT REQUIREMENT____WATER CONSERVATION

WATER QUALITY REQUIREMENT __ REMEDIATION __ OTHER _____

IS THE PERMITTEE SUBJECT TO A PENDING ENFORCEMENT ACTION? NO_x_ YES_.

OWNERSHIP CODE

Private _x_ Federal __ State __ Municipal (town only) __ Other public ___

DEP STAFF ENGINEER Olimpia Brucato

PERMIT FEES

Discharge Code	*DSN Number*	*Annual Fee*
1070000	001a, 001b, 001c, 002-1, 003a, 003b, 003c, 003d, 003e, 004	$4,087.50

FOR NPDES DISCHARGES

Drainage basin Code: 2106 Present/Future Water Quality Standard: **S/B**

FOR UIC PERMITS

Drainage basin Code: n/a Water Quality Standard: ___ Total Wells __ Well Type _____

NATURE OF BUSINESS GENERATING DISCHARGE

The aquarium is a facility used for the public exhibition of aquatic plants, invertebrates, fish and marine mammals for education purposes. Discharges are associated with the draining and cleaning of exhibit tanks and pools.

PROCESS AND TREATMENT DESCRIPTION

Treatment is not required.

RESOURCES USED TO DRAFT PERMIT

_x_ Department File Information

BASIS FOR LIMITATIONS, STANDARDS OR CONDITIONS

_x_ Best Professional Judgment (See Other Comments)
pH, Total Residual Chlorine, Copper

GENERAL COMMENTS

Chlorine is a potential pollutant for the discharges covered by this permit. The permittee uses chorine as a disinfectant for the Seal Rescue Clinic, Aquatic Animal Study Center, Alaskan Coast Exhibit and Seal Island. Prior to discharging the contents of a pool, chemical dechlorination is performed with sodium thiosulfate. The limits for chlorine within this permit reflect the limits set forth in the previous permit.

The company was required to monitor for copper used for the treatment of a particularly difficult parasite for DSN 003c. Based on a review of DMRs, detectable levels of copper are expected to be present. The monitoring requirements continue to be included in the permit renewal. There was limited data available to determine appropriate water quality limits. A monitoring requirement was included in this permit to develop the data necessary for such an evaluation.