



**RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT**

235 Promenade Street, Providence, RI 02908-5767

TDD 401-222-4462

September 23, 2014

CERTIFIED MAIL

Department of the Navy
Naval Undersea Warfare Center Division
Attn: Joseph T. Murphy
1176 Howell Street
Newport, RI 02841-1708

**RE: Final Permit for Seawater Reduction Cell Battery Testing in Narragansett Bay
RIPDES No. RI0023931**

Dear Mr. Murphy:

Enclosed is your final Rhode Island Pollutant Discharge Elimination System (RIPDES) Permit issued pursuant to the referenced application. State regulations, promulgated under Chapter 46-12 of the Rhode Island General Laws of 1956, as amended, require this permit to become effective on the date specified in the permit.

Also enclosed is information relative to hearing requests and stays of RIPDES Permits.

We appreciate your cooperation throughout the development of this permit. Should you have any questions concerning this permit, feel free to contact Brian Lafaille, PE of the State Permits Staff at (401) 222-4700, extension 7731.

Sincerely,

Joseph B. Haberek, PE
Principal Sanitary Engineer

JBH:BL

Enclosures

cc: Traci Pena, RIDEM-OWR
Annie McFarland, RIDEM-OWR
Michael Geremia, NUWC
Jeffrey Willis, CRMC

RESPONSE TO COMMENTS

NO SIGNIFICANT COMMENTS WERE RECEIVED ON THE DRAFT PERMIT FOR THIS FACILITY; THEREFORE, NO RESPONSE WAS PREPARED.

HEARING REQUESTS

If you wish to contest any of the provisions of this permit, you may request a formal hearing within thirty (30) days of receipt of this letter. The request should be submitted to the Administrative Adjudication Division at the following address:

Bonnie Stewart, Clerk
Department of Environmental Management
Office of Administrative Adjudication
One Capitol Hill
Second Floor
Providence, RI 02903

Any request for a formal hearing must conform to the requirements of Rule 49 of the State Regulations.

STAYS OF RIPDES PERMITS

Should the Department receive and grant a request for a formal hearing, this permit will not be effective pending final Departmental action, unless an order authorizing operation is obtained from the Administrative Hearing Officer, in accordance with the provisions of Rule 50.

AUTHORIZATION TO DISCHARGE UNDER THE
RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM

In compliance with the provisions of Chapter 46-12 of the Rhode Island General Laws, as amended,

Naval Undersea Warfare Center Division Newport
1176 Howell Street
Code 1151 B-679/2
Newport, Rhode Island 02841

is authorized to discharge from a facility located at

Naval Undersea Warfare Center Division Newport
1176 Howell Street
Newport, Rhode Island 02841

to receiving waters named

Coddington Cove and Narragansett Bay – East Passage

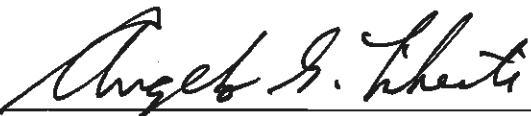
in accordance with effluent limitations, monitoring requirements and other conditions set forth herein.

This permit shall become effective on date of signature.

This permit and the authorization to discharge expire at midnight, five (5) years from the date of signature.

This permit consists of three (3) pages in Part I including effluent limitations, monitoring requirements, etc. and ten (10) pages in Part II including General Conditions.

Signed this 23rd day of September, 2014.



Angelo S. Liberti, P.E., Chief of Surface Water Protection
Office of Water Resources
Rhode Island Department of Environmental Management
Providence, Rhode Island

1. This permit only authorizes the discharge of seawater that is circulated through the battery of an acoustic device during operational testing activities in the following receiving waters:
 - a. Coddington Cove waters north of a line from buoy (FLR) bell 14 to Bishop Rock and southeast of a line from buoy (FLR) bell 14 through Nun buoy 16 at Coddington point and its extension to the end of the Coddington Cove breakwater (Waterbody Identification Number RI0007030E-01A), and
 - b. the Narragansett Bay's East Passage waters within 500 feet of the firing pier at the U.S. Navy torpedo testing station at the northern end of Gould Island (Waterbody Identification Number RI0007029E-01E).
2. The permittee is only authorized to discharge from seawater reduction batteries, with a maximum of 8 battery tests per day, consistent with the permittee's application dated March 25, 2014 and amendments to the application dated June 12, 2014.
3. The permittee is not authorized to discharge any chemical additive(s)/cleaner in the operation of the seawater reduction electrochemical batteries.
4. The pH of the effluent shall not cause the receiving water to be less than 6.5 nor greater than 8.5 standard units at anytime, unless these values are exceeded due to natural causes.
5. The discharge shall not cause visible discoloration of the receiving waters.
6. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.
7. All existing manufacturing, commercial, mining, and silvicultural dischargers must notify the Director as soon as they know or have reason to believe:
 - a. That any activity has occurred or will occur which would result in the discharge, on a routine or frequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) One hundred micrograms per liter (100 ug/l);
 - (2) Two hundred micrograms per liter (200 ug/l) for acrolein and acrylonitrile; five hundred micrograms per liter (500 ug/l) for 2,4-dinitrophenol and for 2-methyl-4,6-dinitro-phenol; and one milligram per liter (1 mg/l) for antimony;
 - (3) Five (5) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or
 - (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.
 - b. That any activity has occurred or will occur which would result in the discharge, on a non-routine or infrequent basis, of any toxic pollutant which is not limited in the permit, if that discharge will exceed the highest of the following "notification levels":
 - (1) Five hundred micrograms per liter (500 ug/l);
 - (2) One milligram per liter (1 mg/l) for antimony;

- (3) Ten (10) times the maximum concentration value reported for that pollutant in the permit application in accordance with 40 C.F.R. s122.21(g)(7); or
- (4) Any other notification level established by the Director in accordance with 40 C.F.R. s122.44(f) and Rhode Island Regulations.

c. That they have begun or expect to begin to use or manufacture as an intermediate or final product or by-product any toxic pollutant which was not reported in the permit application.

8. This permit serves as the State's Water Quality Certificate for the discharges described herein.

B. MONITORING AND REPORTING

1. Monitoring

All monitoring required by this permit shall be done in accordance with sampling and analytical testing procedures specified in Federal Regulations (40 CFR Part 136).

2. Reporting

By January 15th of each year the permittee shall submit a Seawater Reduction Battery Test Summary Report that contains the following information for the previous calendar year:

- a. The date(s) that any tests were conducted in surface waters
- b. The specific location(s) of each test
- c. The number of batteries that were part of each test

A signed copy of these reports shall be submitted to:

Electronic Computer Operator
Rhode Island Department of Environmental Management
RIPDES Program
235 Promenade Street
Providence, Rhode Island 02908

PART II
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DEFINITIONS

GENERAL REQUIREMENTS

(a) Duty to Comply

The permittee must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of Chapter 46-12 of the Rhode Island General Laws and the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

- (1) The permittee shall comply with effluent standards or prohibitions established under Section 307(a) of the CWA for toxic pollutants within the time provided in the regulations that establish these standards or prohibitions, even if the permit has not yet been modified to incorporate the requirement.
- (2) The CWA provides that any person who violates a permit condition implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the CWA is subject to a civil penalty not to exceed \$10,000 per day of such violation. Any person who willfully or negligently violates permit conditions implementing Sections 301, 302, 306, 307 or 308 of the Act is subject to a fine of not less than \$2,500 nor more than \$25,000 per day of violation, or by imprisonment of not more than 1 year, or both.
- (3) Chapter 46-12 of the Rhode Island General Laws provides that any person who violates a permit condition is subject to a civil penalty of not more than \$5,000 per day of such violation. Any person who willfully or negligently violates a permit condition is subject to a criminal penalty of not more than \$10,000 per day of such violation and imprisonment for not more than 30 days, or both. Any person who knowingly makes any false statement in connection with the permit is subject to a criminal penalty of not more than \$5,000 for each instance of violation or by imprisonment for not more than 30 days, or both.

(b) Duty to Reapply

If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must apply for and obtain a new permit. The permittee shall submit a new application at least 180 days before the expiration date of the existing permit, unless permission for a later date has been granted by the Director. (The Director shall not grant permission for applications to be submitted later than the expiration date of the existing permit.)

(c) Need to Halt or Reduce Not a Defense

It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(d) Duty to Mitigate

The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

(e) Proper Operation and Maintenance

The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures, and, where applicable, compliance with DEM "Rules and Regulations Pertaining to the Operation and Maintenance of Wastewater Treatment Facilities" and "Rules and Regulations Pertaining to the Disposal and Utilization of Wastewater Treatment Facility Sludge." This provision requires the operation of back-up or auxiliary facilities or similar systems only when the operation is necessary to achieve compliance with the conditions of the permit.

(f) Permit Actions

This permit may be modified, revoked and reissued, or terminated for cause, including but not limited to: (1) Violation of any terms or conditions of this permit; (2) Obtaining this permit by misrepresentation or failure to disclose all relevant facts; or (3) A change in any conditions that requires either a temporary or permanent reduction or elimination of the authorized discharge. The filing of a request by the permittee for a permit modification, revocation and reissuance, or termination or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

(g) Property Rights

This permit does not convey any property rights of any sort, or any exclusive privilege.

(h) Duty to Provide Information

The permittee shall furnish to the Director, within a reasonable time, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

(i) Inspection and Entry

The permittee shall allow the Director, or an authorized representative, upon the presentation of credentials and other documents as may be required by law, to:

- (1) Enter upon the permittee's premises where a regulated facility or activity is located or conducted, or where records must be kept under the conditions of this permit;
- (2) Have access to and copy, at reasonable times any records that must be kept under the conditions of this permit;
- (3) Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and

- (4) Sample or monitor any substances or parameters at any location, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the CWA or Rhode Island law.
- (j) Monitoring and Records
- (1) Samples and measurements taken for the purpose of monitoring shall be representative of the volume and nature of the discharge over the sampling and reporting period.
 - (2) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings from continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least 5 years from the date of the sample, measurement, report or application. This period may be extended by request of the Director at any time.
 - (3) Records of monitoring information shall include:
 - (i) The date, exact place, and time of sampling or measurements;
 - (ii) The individual(s) who performed the sampling or measurements;
 - (iii) The date(s) analyses were performed;
 - (iv) The individual(s) who performed the analyses;
 - (v) The analytical techniques or methods used; and
 - (vi) The results of such analyses.
 - (4) Monitoring must be conducted according to test procedures approved under 40 CFR Part 136 and applicable Rhode Island regulations, unless other test procedures have been specified in this permit.
 - (5) The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate, any monitoring device or method required to be maintained under this permit shall upon conviction, be punished by a fine of not more than \$10,000 per violation or by imprisonment for not more than 6 months per violation or by both. Chapter 46-12 of the Rhode Island General Laws also provides that such acts are subject to a fine of not more than \$5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.
 - (6) Monitoring results must be reported on a Discharge Monitoring Report (DMR).
 - (7) If the permittee monitors any pollutant more frequently than required by the permit, using test procedures approved under 40 CFR Part 136, applicable State regulations, or as specified in the permit, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

(k) Signatory Requirement

All applications, reports, or information submitted to the Director shall be signed and certified in accordance with Rule 12 of the Rhode Island Pollutant Discharge Elimination System (RIPDES) Regulations. Rhode Island General Laws, Chapter 46-12 provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than \$5,000 per violation, or by imprisonment for not more than 30 days per violation, or by both.

(l) Reporting Requirements

- (1) Planned changes. The permittee shall give notice to the Director as soon as possible of any planned physical alterations or additions to the permitted facility.
- (2) Anticipated noncompliance. The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with the permit requirements.
- (3) Transfers. This permit is not transferable to any person except after written notice to the Director. The Director may require modification or revocation and reissuance of the permit to change the name of the permittee and incorporate such other requirements as may be necessary under State and Federal law.
- (4) Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit.
- (5) Twenty-four hour reporting. The permittee shall immediately report any noncompliance which may endanger health or the environment by calling DEM at (401) 222-4700 or (401) 222-3070 at night.

A written submission shall also be provided within five (5) days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

The following information must be reported immediately:

- (i) Any unanticipated bypass which causes a violation of any effluent limitation in the permit; or
- (ii) Any upset which causes a violation of any effluent limitation in the permit; or
- (iii) Any violation of a maximum daily discharge limitation for any of the pollutants specifically listed by the Director in the permit.

The Director may waive the written report on a case-by-case basis if the oral report has been received within 24 hours.

- (6) Other noncompliance. The permittee shall report all instances of noncompliance not reported under paragraphs (1), (2), and (5), of this section, at the time monitoring reports are submitted. The reports shall contain the information required in paragraph (1)(5) of the section.
 - (7) Other information. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Director, they shall promptly submit such facts or information.
- (m) Bypass

"Bypass" means the intentional diversion of waste streams from any portion of a treatment facility.

- (1) Bypass not exceeding limitations. The permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the provisions of paragraphs (2) and (3) of this section.
- (2) Notice.
 - (i) Anticipated bypass. If the permittee knows in advance of the need for a bypass, it shall submit prior notice, if possible at least ten (10) days before the date of the bypass.
 - (ii) Unanticipated bypass. The permittee shall submit notice of an unanticipated bypass as required in Rule 14.18 of the RIPDES Regulations.
- (3) Prohibition of bypass.
 - (i) Bypass is prohibited, and the Director may take enforcement action against a permittee for bypass, unless:
 - (A) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage, where "severe property damage" means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be expected to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production;
 - (B) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; and
 - (C) The permittee submitted notices as required under paragraph (2) of this section.

- (ii) The Director may approve an anticipated bypass, after considering its adverse effects, if the Director determines that it will meet the three conditions listed above in paragraph (3)(i) of this section.

(n) Upset

"Upset" means an exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation.

- (1) Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology-based permit effluent limitations if the requirements of paragraph (2) of this section are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review.
- (2) Conditions necessary for a demonstration of upset. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that:
 - (a) An upset occurred and that the permittee can identify the cause(s) of the upset;
 - (b) The permitted facility was at the time being properly operated;
 - (c) The permittee submitted notice of the upset as required in Rule 14.18 of the RIPDES Regulations; and
 - (d) The permittee complied with any remedial measures required under Rule 14.05 of the RIPDES Regulations.
- (3) Burden of proof. In any enforcement proceeding the permittee seeking to establish the occurrence of an upset has the burden of proof.

(o) Change in Discharge

All discharges authorized herein shall be consistent with the terms and conditions of this permit. Discharges which cause a violation of water quality standards are prohibited. The discharge of any pollutant identified in this permit more frequently than or at a level in excess of that authorized shall constitute a violation of the permit. Any anticipated facility expansions, production increases, or process modifications which will result in new, different or increased discharges of pollutants must be reported by submission of a new NPDES application at least 180 days prior to commencement of such discharges, or if such changes will not violate the effluent limitations specified in this permit, by notice, in writing, to the Director of such changes. Following such notice, the permit may be modified to specify and limit any pollutants not previously limited.

Until such modification is effective, any new or increased discharge in excess of permit limits or not specifically authorized by the permit constitutes a violation.

(p) Removed Substances

Solids, sludges, filter backwash, or other pollutants removed in the course of treatment or control of wastewaters shall be disposed of in a manner consistent with applicable Federal and State laws and regulations including, but not limited to the CWA and the Federal Resource Conservation and Recovery Act, 42 U.S.C. §§6901 et seq., Rhode Island General Laws, Chapters 46-12, 23-19.1 and regulations promulgated thereunder.

(q) Power Failures

In order to maintain compliance with the effluent limitation and prohibitions of this permit, the permittee shall either:

In accordance with the Schedule of Compliance contained in Part I, provide an alternative power source sufficient to operate the wastewater control facilities;

or if such alternative power source is not in existence, and no date for its implementation appears in Part I,

Halt reduce or otherwise control production and/or all discharges upon the reduction, loss, or failure of the primary source of power to the wastewater control facilities.

(r) Availability of Reports

Except for data determined to be confidential under paragraph (w) below, all reports prepared in accordance with the terms of this permit shall be available for public inspection at the DEM, 291 Promenade Street, Providence, Rhode Island. As required by the CWA, effluent data shall not be considered confidential. Knowingly making any false statement on any such report may result in the imposition of criminal penalties as provided for in Section 309 of the CWA and under Section 46-12-14 of the Rhode Island General Laws.

(s) State Laws

Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law.

(t) Other Laws

The issuance of a permit does not authorize any injury to persons or property or invasion of other private rights, nor does it relieve the permittee of its obligation to comply with any other applicable Federal, State, and local laws and regulations.

(u) Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, shall not be affected thereby.

(v) Reopener Clause

The Director reserves the right to make appropriate revisions to this permit in order to incorporate any appropriate effluent limitations, schedules of compliance, or other provisions which may be authorized under the CWA or State law. In accordance with Rules 15 and 23 of the RIPDES Regulations, if any effluent standard or prohibition, or water quality standard is promulgated under the CWA or under State law which is more stringent than any limitation on the pollutant in the permit, or controls a pollutant not limited in the permit, then the Director may promptly reopen the permit and modify or revoke and reissue the permit to conform to the applicable standard.

(w) Confidentiality of Information

(1) Any information submitted to DEM pursuant to these regulations may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission in the manner prescribed on the application form or instructions or, in the case of other submissions, by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, DEM may make the information available to the public without further notice.

(2) Claims of confidentiality for the following information will be denied:

- (i) The name and address of any permit applicant or permittee;
- (ii) Permit applications, permits and any attachments thereto; and
- (iii) NPDES effluent data.

(x) Best Management Practices

The permittee shall adopt Best Management Practices (BMP) to control or abate the discharge of toxic pollutants and hazardous substances associated with or ancillary to the industrial manufacturing or treatment process and the Director may request the submission of a BMP plan where the Director determines that a permittee's practices may contribute significant amounts of such pollutants to waters of the State.

(y) Right of Appeal

Within thirty (30) days of receipt of notice of a final permit decision, the permittee or any interested person may submit a request to the Director for an adjudicatory hearing to reconsider or contest that decision. The request for a hearing must conform to the requirements of Rule 49 of the RIPDES Regulations.

DEFINITIONS

1. For purposes of this permit, those definitions contained in the RIPDES Regulations and the Rhode Island Pretreatment Regulations shall apply.
2. The following abbreviations, when used, are defined below.

cu. M/day or M ³ /day	cubic meters per day
mg/l	milligrams per liter
ug/l	micrograms per liter
lbs/day	pounds per day
kg/day	kilograms per day
Temp. °C	temperature in degrees Centigrade
Temp. °F	temperature in degrees Fahrenheit
Turb.	turbidity measured by the Nephelometric Method (NTU)
TNFR or TSS	total nonfilterable residue or total suspended solids
DO	dissolved oxygen
BOD	five-day biochemical oxygen demand unless otherwise specified
TKN	total Kjeldahl nitrogen as nitrogen
Total N	total nitrogen
NH ₃ -N	ammonia nitrogen as nitrogen
Total P	total phosphorus
COD	chemical oxygen demand
TOC	total organic carbon
Surfactant	surface-active agent
pH	a measure of the hydrogen ion concentration
PCB	polychlorinated biphenyl
CFS	cubic feet per second
MGD	million gallons per day
Oil & Grease	Freon extractable material
Total Coliform	total coliform bacteria
Fecal Coliform	total fecal coliform bacteria
ml/l	milliliter(s) per liter
NO ₃ -N	nitrate nitrogen as nitrogen
NO ₂ -N	nitrite nitrogen as nitrogen
NO ₃ -NO ₂	combined nitrate and nitrite nitrogen as nitrogen
Cl ₂	total residual chlorine

RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
235 PROMENADE STREET
PROVIDENCE, RHODE ISLAND 02908-5767

STATEMENT OF BASIS

DRAFT RHODE ISLAND POLLUTANT DISCHARGE ELIMINATION SYSTEM (RIPDES) PERMIT TO DISCHARGE TO WATERS OF THE STATE

RIPDES PERMIT NO. **RI0023931**

NAME AND ADDRESS OF APPLICANT:

Naval Undersea Warfare Center Division Newport
1176 Howell Street
Code 1151 B-679/2
Newport, Rhode Island 02841

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Naval Undersea Warfare Center Division Newport
1176 Howell Street
Newport, Rhode Island 02841

RECEIVING WATER:

Coddington Cove (Waterbody ID # RI0007030E-01A)
and
Narragansett Bay – East Passage (Waterbody ID # RI0007029E-01E)

CLASSIFICATION: **SB**

I. **Proposed Action, Type of Facility, and Discharge Location**

The above named applicant has applied to the Rhode Island Department of Environmental Management (DEM) for issuance of a RIPDES Permit to discharge into the above listed and designated receiving waters. The Naval Undersea Warfare Center Division Newport's mission is to operate the United States Navy's full-spectrum research and development center which conducts research, development, testing and evaluation, engineering and fleet support for submarines, autonomous underwater systems, and offensive and defensive weapons systems associated with undersea warfare, homeland security, and national defense. The discharge consists of seawater that is circulated through seawater reduction batteries by a passive "bubble pump". As hydrogen gas is formed as a byproduct of the reduction of seawater, used to generate electrical current, a small flow of seawater is pushed out through vent ports in the batteries. The seawater will contain concentrations of magnesium hydroxide as a byproduct of the battery operation. The discharge is to the East Passage of Narragansett Bay via Gould Island North Pier and to Coddington Cove via the Stillwater Basin Breakwall, Stillwater Basin Pier, and Navy Pier 171.

II. **Limitations and Conditions**

Effluent limitations and monitoring requirements may be found in the draft permit.

III. Description of Discharge

The applicant's proposed discharges are from scientific experiments that investigate the functioning of an acoustic device in a true ocean environment. The device utilizes a battery which operates when immersed in seawater. Each battery utilizes 2,712g of silver chloride (AgCl) as a cathode; 970.0g of magnesium (Mg), 62.6g of aluminum (Al), and 10.4g of tin (Sn) alloy as an anode; and seawater as an electrolyte. When the battery is immersed in seawater, approximately 61g total of hydrogen (H₂) gas is released even when no discharge current is being drawn; and silver chloride is reduced to silver metal and hydrochloric acid (HCl) residues. The silver and hydrochloric acid are retained in the battery while the hydrogen is completely released to the sea. Hydrogen gas is formed as a by-product of the battery operation and vents through the outlet port. The hydrogen venting pushes a small fraction of seawater with it. Magnesium salts are also released from the battery in the form of magnesium hydroxide. An estimated 60% of the magnesium salts are ejected from the battery by convection and/or gravity with the remainder being retained inside the sealed battery housing. Elemental Magnesium is insoluble in cold water, but will react with water to produce Magnesium Hydroxide and Hydrogen gas.

During the proposed testing, the experiment will be monitored by a real time data acquisition system. At a minimum, the system will monitor voltage, and current produced by the battery. Additionally, the experiment will be under constant human surveillance. Each battery operational test will be less than 1 hour in duration, with a maximum number of batteries tested per day at eight, and an average number of batteries tested per day at four. The calculated flow rates and pollutant loading estimates are based on an operating assumption of 100% battery efficiency. Actual efficiencies are less than 100% and average around 75%. As a result the projected flow and pollutant discharge estimates presented are estimated to be 1.25 times greater than the battery's expected flow rates. The facility applied for a RIPDES permit on March 25, 2014 and amended the application on June 12, 2014.

The test units are portable and will produce a discharge at four proposed locations. One of the proposed discharge locations is located in the East Passage of Narragansett Bay at Gould Island – North Pier. The waterbody segment that receives the discharge at this location is generally described as the Narragansett Bay's East Passage and has a waterbody identification # of RI0007029E-01E. The specific waterbody description is the East Passage waters within 500 feet of the firing pier at the U.S. Navy torpedo testing station at the northern end of Gould Island. This segment is located in Jamestown and is also classified as a Class SB water body according to the RI Water Quality Regulations. Currently, this segment is not listed as impaired in the DEM's 2012 303(d) List of Impaired Waters.

The remaining three proposed discharge locations are located in Coddington Cove at Stillwater Basin Breakwall, Stillwater Basin Pier, and Navy Pier 171. The waterbody segment that will receive the proposed discharges is generally described as Newport Harbor/Coddington Cove and has a waterbody identification # of RI0007030E-01A. The specific waterbody description is Coddington Cove waters north of a line from buoy (FLR) bell 14 to Bishop Rock and southeast of a line from buoy (FLR) bell 14 through Nun buoy 16 at Coddington point and its extension to the end of the Coddington Cove breakwater. This segment is located in Newport and Middletown and is classified as a Class SB water body according to the RI Water Quality Regulations. Class SB waters are designated for primary and secondary contact recreational activities; shellfish harvesting for controlled relay and depuration; and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value. Currently, this segment is listed as not supporting fish and wildlife habitat in the DEM's 2012 303(d) List of Impaired Waters due to sediment bioassays for estuarine and marine water. Hazardous waste site remediation, which will address this impairment, is currently in progress and it is expected that a Record of Decision (ROD) will be entered in the fall of 2014. A TMDL is currently scheduled to be completed in 2016. The proposed discharge will not further impact this impairment.

An estimate of the pollutant discharge rates and a process line drawing are shown in Attachment A. Attachment B includes a site location map.

IV. Permit Basis and Explanation of Effluent Limitation Derivation

General Requirements

The requirements set forth in this permit are from the State's Water Quality Regulations and the State's Regulations for the Rhode Island Pollutant Discharge Elimination System, both filed pursuant to RIGL Chapter 46-12, as amended. DEM's primary authority over the permit comes from EPA's delegation of the program in September 1984 under the Federal Clean Water Act (CWA).

When developing effluent limits for RIPDES Permits DEM is required to consider treatment technology and water quality requirements. Technology based treatment requirements represent the minimum level of control that must be imposed under Section 402 and 301(b) of the CWA (see 40 CFR 125 Subpart A) to meet Best Practicable Control Technology Currently Available (BPT), Best Conventional Control Technology (BCT) for conventional pollutants, and Best Available Technology Economically Achievable (BAT) for toxic pollutants. EPA has not promulgated National Effluent Limitation Guidelines for discharges from seawater reduction electrochemical batteries. In the absence of technology-based guidelines, DEM is authorized to use Best Professional Judgement (BPJ) to establish effluent limitations, in accordance with Section 402(a)(1) of the CWA.

Under Section 301 (b)(1)(C) of the CWA, discharges are subject to effluent limitations based on water quality standards. The Rhode Island Water Quality Regulations include a narrative statement that prohibits the discharge of any pollutant or combination of pollutants in quantities that would be toxic or injurious to aquatic life. In addition, the State has adopted numerical criteria for specific toxic pollutants.

Explanation of Effluent Limitation Derivation and Conditions

The RIPDES application for the proposed discharge listed magnesium salts in the form of magnesium hydroxide ($Mg(OH)_2$) as the only pollutant discharged with the seawater from the seawater reduction electrochemical batteries. As indicated above, EPA has not promulgated National Effluent Limitation Guidelines for discharges from seawater reduction electrochemical batteries. In addition, the Rhode Island Water Quality Regulations do not contain water quality criteria for magnesium. Therefore, the DEM evaluated the proposed discharge for the need to have BPJ-based effluent limits.

Using the reported maximum and average seawater flow rates and the maximum and average $Mg(OH)_2$ discharge rates, the DEM determined the discharge concentrations from the batteries as follows:

Maximum $Mg(OH)_2$ Load Discharged:

$$\frac{970.0g \text{ Mg(OH)}_2}{\text{Cell}} \times \frac{8 \text{ cells}}{\text{day}} \times 60\% \times \frac{kg}{1000g} = 4.7 \text{ kg Mg(OH)}_2 / \text{day}$$

Average $Mg(OH)_2$ Load Discharged:

$$\frac{970.0g \text{ Mg(OH)}_2}{\text{Cell}} \times \frac{4 \text{ cells}}{\text{day}} \times 60\% \times \frac{kg}{1000g} = 2.3 \text{ kg Mg(OH)}_2 / \text{day}$$

Projected Effluent Concentrations at Maximum Flow:

$$\frac{4.7 \text{ kg Mg(OH)}_2 / \text{day}}{3 \text{ gallons/day} \times 3.785 \text{ L/gal}} = 0.4139 \text{ kg Mg(OH)}_2 / \text{L}$$

The DEM has also added a narrative limitation that restricts the area where the electrochemical batteries can be used to Coddington Cove waters north of a line from buoy (FLR) bell 14 to Bishop Rock and southeast of a line from buoy (FLR) bell 14 through Nun buoy 16 at Coddington point and its extension to the end of the Coddington Cove breakwater (Waterbody Identification Number RI0007030E-01A), and to the East Passage waters within 500 feet of the firing pier at the U.S. Navy torpedo testing station at the northern end of Gould Island (Waterbody Identification Number RI0007029E-01E). This will ensure that the discharges do not occur in class SA waters.

The narrative effluent limitations for pH are based on the saltwater water quality criteria established in Table 2.8.D (3) of the State's Water Quality Regulations for Saltwater Receiving Waters.

Since the discharge from the electrochemical battery tests will be limited in duration, the DEM has determined that this permit satisfies the antibacksliding provisions at 40 CFR §122.44(l). Similarly, the DEM has determined that all permit limitations are consistent with the Rhode Island Antidegradation policy.

The remaining general and specific conditions of the permit are based on the RIPDES regulations as well as 40 CFR Parts 122 through 125 and consist primarily of management requirements common to all permits.

V. Comment Period, Hearing Requests, and Procedures for Final Decisions

All persons, including applicants, who believe any condition of the draft permit is inappropriate must raise all issues and submit all available arguments and all supporting material for their arguments in full by the close of the public comment period, to the Rhode Island Department of Environmental Management, Office of Water Resources, 235 Promenade Street, Providence, Rhode Island, 02908-5767. Any person, prior to such date, may submit a request in writing for a public hearing to consider the draft permit to the Rhode Island Department of Environmental Management. Such requests shall state the nature of the issues proposed to be raised in the hearing. A public hearing may be held after at least thirty (30) days public notice whenever the Director finds that response to this notice indicates significant public interest. In reaching a final decision on the draft permit the Director will respond to all significant comments and make these responses available to the public at DEM's Providence Office.

Following the close of the comment period, and after a public hearing, if such hearing is held, the Director will issue a final permit decision and forward a copy of the final decision to the applicant and each person who has submitted written comments or requested notice. Within thirty (30) days following the notice of the final permit decision any interested person may submit a request for a formal hearing to reconsider or contest the final decision. Requests for formal hearings must satisfy the requirements of Rule 49 of the Regulations for the Rhode Island Pollutant Discharge Elimination System.

VI. DEM Contact

Additional information concerning the permit may be obtained between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday, excluding holidays from:

Brian D. Lafaille, PE
RIPDES Program
Office of Water Resources
Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 222-6820 Ext.7715
Email: brian.lafaille@dem.ri.gov

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Date

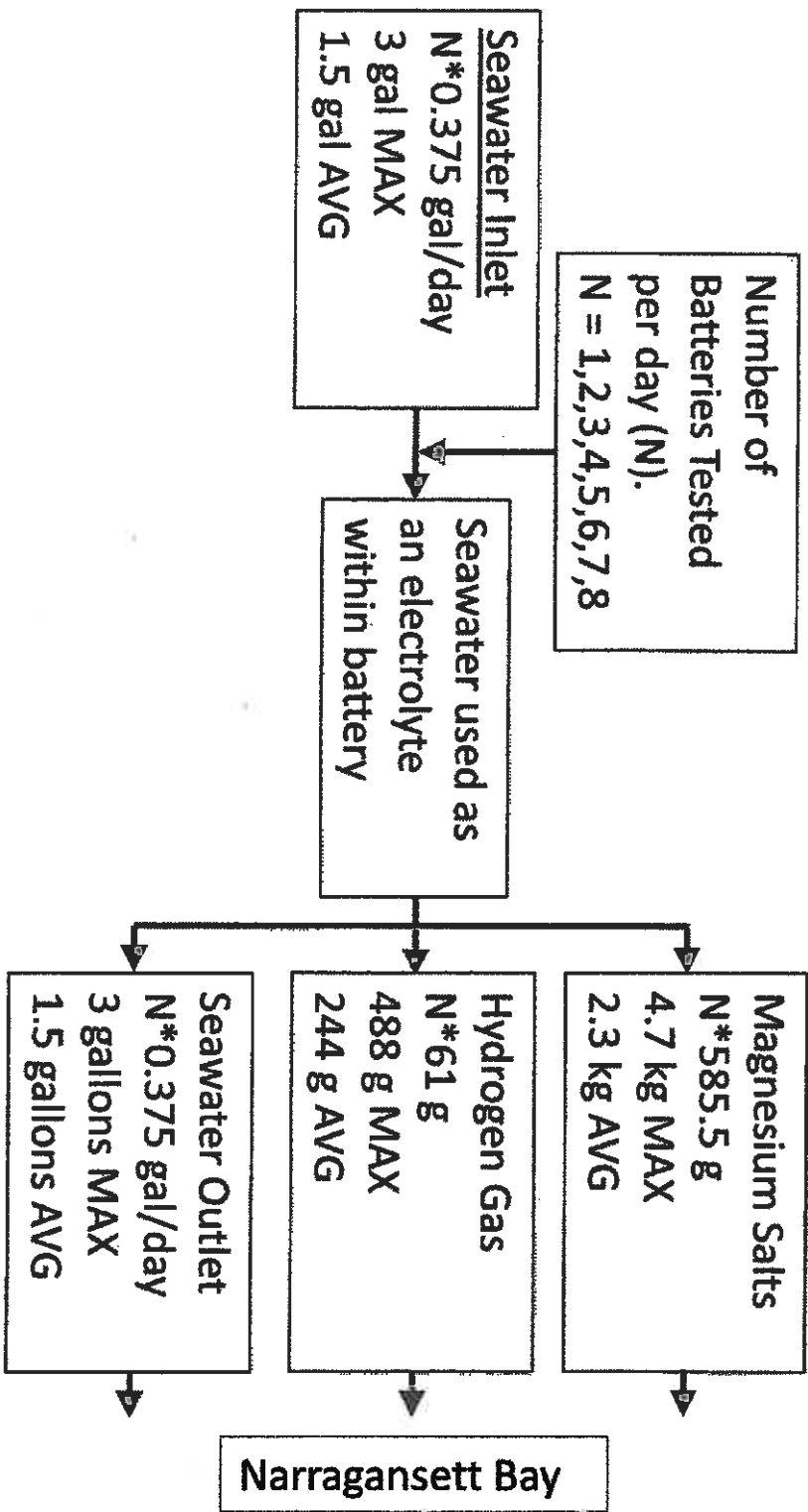


Joseph B. Haberek, P.E.
Principal Sanitary Engineer
RIPDES Permitting Section
Office of Water Resources
Department of Environmental Management

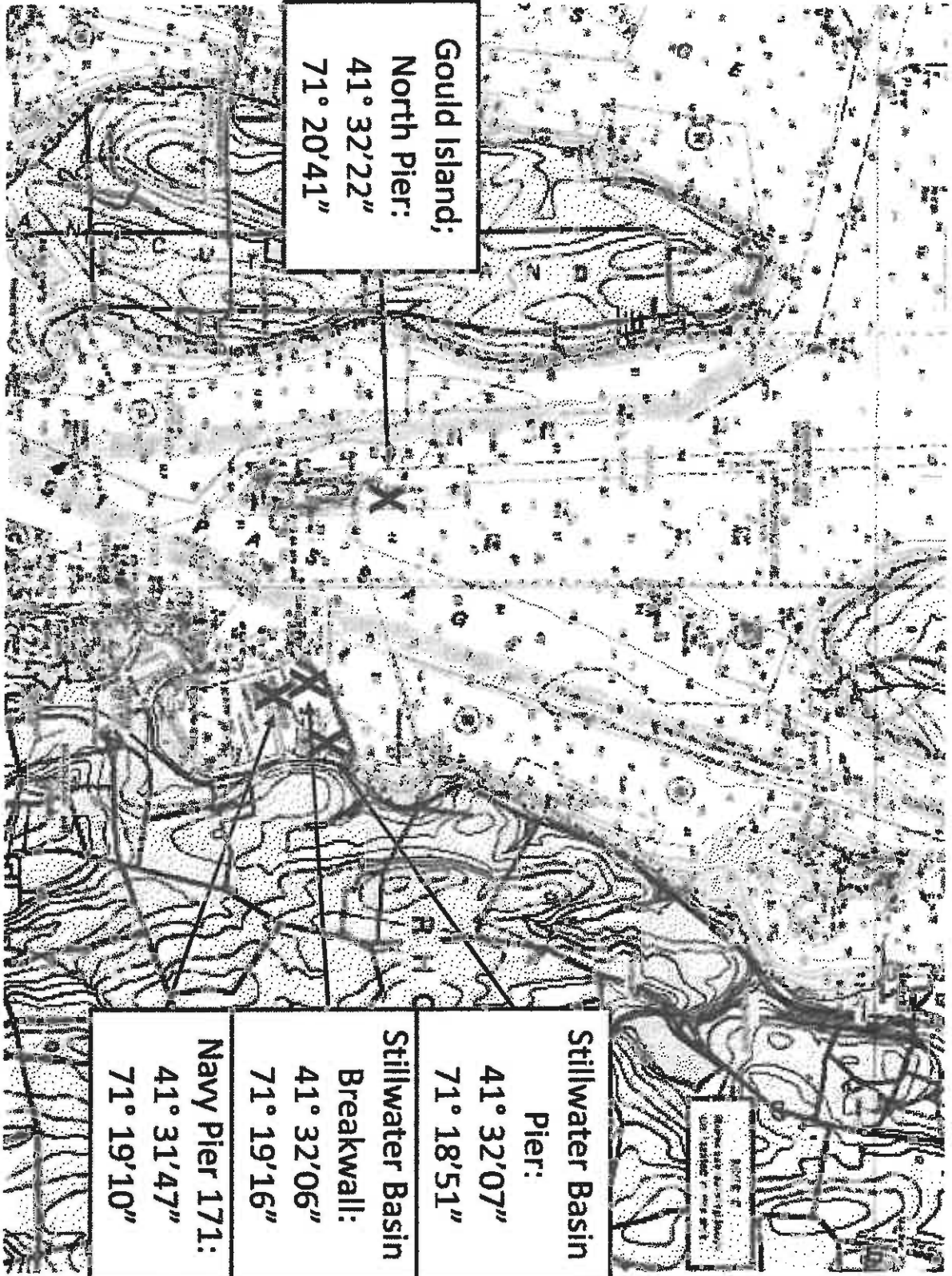
ATTACHMENT A-1

**ESTIMATED POLLUTANT DISCHARGE RATES
AND LINE DIAGRAM**

Line Diagram



ATTACHMENT A-2
DISCHARGE LOCATION MAP



Gould Island;
 North Pier:
 41° 32'22"
 71° 20'41"

Stillwater Basin
 Pier:
 41° 32'07"
 71° 18'51"
 Stillwater Basin
 Breakwall:
 41° 32'06"
 71° 19'16"
 Navy Pier 171:
 41° 31'47"
 71° 19'10"