RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
235 Promenade Street, Providence, RI 02908-5767 TDD 401-222-4462

August 5, 2009

CERTIFIED MAIL

Mr. John Hurley, General Manager
Sakonnet Point Club, Inc.
50 Sakonnet Point Road
Little Compton, RI 02837

RE: Sakonnet Point Club, Inc. Desalination System Discharge
RIPDES No. RI0023558

Dear Mr. Hurley:

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, P.E. of the State Permits Staff at (401) 222-4700, extension 7731.

Sincerely,

Eric A. Beck, P.E.
Supervising Sanitary Engineer

EAB:bdl

Enclosures

cc: Robert F. Ferrari, Northeast Water Solutions, Inc. (Electronic Copy)
Dave Turin, EPA Region 1 (Electronic Copy)
Traci Pena, RIDEM-OWR (Electronic Copy)
Annie McFarland, RIDEM-OWR (Electronic Copy)

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
235 Promenade Street, 3rd Floor
Providence, Rhode Island 02908

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, the contested conditions of the permit will not automatically be stayed. However, the permittee, in accordance with Rule 50, may request a temporary stay for the duration of adjudicatory hearing proceedings. Requests for stays of permit conditions should be submitted to the Office of Water Resources at the following address:

Angelo S. Liberti, P.E.
Chief of surface Water Protection
Office of Water Resources
235 Promenade Street
Providence, Rhode Island 02908

All uncontested conditions of the permit will be effective and enforceable in accordance with the provisions of Rule 49.

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,

Sakonnet Point Club, Incorporated
50 Sakonnet Point Road
Little Compton, Rhode Island 02837

is authorized to discharge from a facility located at

Bluff Head Avenue
Little Compton, Rhode Island 02837

to receiving waters named

Sakonnet River

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

This permit shall become effective on October 1, 2009.

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

This permit supersedes the permit issued on November 29, 2002.

This permit consists of eight (8) pages in Part I including effluent limitations, monitoring requirements, etc. and ten (10) pages in Part II including General Conditions.

Signed this 5th day of August, 2009.

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

PART I

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning on the effective date and lasting through permit expiration, the permittee is authorized to discharge from outfall serial number(s) 001A.

   Such discharges shall be limited and monitored by the permittee as specified below:

Effluent Characteristic	Discharge Limitations					Monitoring Requirement	
	Quantity - lbs./day		Concentration - specify units				
	Average Monthly	Maximum Daily	Average Monthly *(Minimum)	Average Weekly *(Average)	Maximum Daily *(Maximum)	Measurement Frequency	Sample Type
Flow	--- GPD	5000 GPD				Continuous	Recorder
TSS			--- mg/l		--- mg/l	1/Month	24-Hr. Comp.
TDS			--- mg/l		--- mg/l	1/Month	24-Hr. Comp.
pH			(6.5 SU)		(8.5 SU)	1/Month	Grab
Copper, Total			218 ug/l		497 ug/l	1/ Month	24-Hr. Comp.

*Values in parentheses () are to be reported as Minimum/Maximum for the reporting period rather than Average Monthly/Maximum Daily.

--- Signifies a parameter which must be monitored and data must be reported; no limit has been established at this time.

Sampling for TSS, TDS, pH, and Total Copper shall be performed Monday – Friday.

Sampling for Flow shall be performed Sunday-Saturday.

Samples taken in compliance with the monitoring requirements specified above shall be taken at the following location: Outfall 001A (Reverse Osmosis Concentrate Discharge).

2. a. The pH of the effluent shall not be less than 6.5 nor greater than 8.5 standard units at any time.

   b. The discharge shall not cause visible discoloration of the receiving waters.

   c. The effluent shall contain neither a visible oil sheen, foam, nor floating solids at any time.

3. 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.

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

5. The permittee is not authorized to discharge any chemicals, including any that may be associated with the cleaning and/or sanitizing of the water treatment system, pretreatment of the feed water, or coagulation treatment. All such chemicals must be disposed of off-site in accordance with applicable State, Local, and Federal regulations.

6. The permittee must conduct a video inspection of the exposed, submerged portion of the outfall pipeline and diffuser, including the anchor block supports and pipeline joints, to ascertain the physical integrity of the outfall. If the video inspection shows evidence of damage to the outfall pipeline, diffuser, or anchor blocks, additional action, including measurement of the outfall position may be required. A video inspection must be conducted at a minimum of once every two (2) years. The results of the biennial diffuser line video inspection must be submitted to the DEM by January 15th of the year following the biennial video inspection. The first report is due on January 15, 2010.

7. By January 15th of each year, the permittee must submit an Annual Cleaning Report summarizing the date of each cleaning and/or sanitizing event, the type and quantity of cleaning and/or sanitizing chemicals used, and the location of cleaning and/or sanitizing chemical disposal. The report must cover the previous calendar year. The first report is due January 15, 2010.

B. DETECTION LIMITS

The permittee shall assure that all wastewater testing required by this permit, is performed in conformance with the method detection limits listed below (the EPA method is noted for reference, other EPA approved methods found in 40 CFR Part 136 may be utilized). In accordance with 40 CFR Part 136, EPA approved analysis techniques, quality assurance procedures and quality control procedures shall be followed for all reports required to be submitted under the RIPDES program. These procedures are described in "Methods for the Determination of Metals in Environmental Samples" (EPA/600/4-91/010) and "Methods for Chemical Analysis of Water and Wastes" (EPA/600/4-79/020).

The report entitled "Methods for the Determination of Metals in Environmental Samples" includes a test which must be performed in order to determine if matrix interferences are present, and a series of tests to enable reporting of sample results when interferences are identified. Each step of the series of tests becomes increasingly complex, concluding with the complete Method of Standard Additions analysis. The analysis need not continue once a result which meets the applicable quality control requirements has been obtained. Documentation of all steps conducted to identify and account for matrix interferences shall be submitted along with the monitoring reports.

If, after conducting the complete Method of Standard Additions analysis, the laboratory is unable to determine a valid result, the laboratory shall report "could not be analyzed". Documentation supporting this claim shall be submitted along with the monitoring report. If valid analytical results are repeatedly unobtainable, DEM may require that the permittee determine a method detection limit (MDL) for their effluent or sludge as outlined in 40 CFR Part 136, Appendix B.

Therefore, all sample results shall be reported as: an actual value, "could not be analyzed", less than the reagent water MDL, or less than an effluent or sludge specific MDL. The effluent or sludge specific MDL must be calculated using the methods outlined in 40 CFR Part 136, Appendix B. Samples which have been diluted to ensure that the sample concentration will be within the linear dynamic range shall not be diluted to the extent that the analyte is not detected. If this should occur the analysis shall be repeated using a lower degree of dilution.

When calculating sample averages for reporting on discharge monitoring reports (DMRs):

1. "could not be analyzed" data shall be excluded, and shall not be considered as failure to comply with the permit sampling requirements;
2. results reported as less than the MDL shall be included as values equal to the MDL, and the average shall be reported as "less than" the calculated value.

For compliance purposes, DEM will replace all data reported as less than the MDL with zeroes, provided that DEM determines that all appropriate EPA approved methods were followed. If the re-calculated average exceeds the permit limitation it will be considered a violation.

LIST OF TOXIC POLLUTANTS

The following list of toxic pollutants has been designated pursuant to Section 307(a)(1) of the Clean Water Act. The Method Detection Limits (MDLs) represent the required Rhode Island MDLs.

Volatiles - EPA Method 624		MDL ug/l (ppb)
1V	acrolein	10.0
2V	acrylonitrile	5.0
3V	benzene	1.0
5V	bromoform	1.0
6V	carbon tetrachloride	1.0
7V	chlorobenzene	1.0
8V	chlorodibromomethane	1.0
9V	chloroethane	1.0
10V	2-chloroethylvinyl ether	5.0
11V	chloroform	1.0
12V	dichlorobromomethane	1.0
14V	1,1-dichloroethane	1.0
15V	1,2-dichloroethane	1.0
16V	1,1-dichloroethylene	1.0
17V	1,2-dichloropropane	1.0
18V	1,3-dichloropropylene	1.0
19V	ethylbenzene	1.0
20V	methyl bromide	1.0
21V	methyl chloride	1.0
22V	methylene chloride	1.0
23V	1,1,2,2-tetrachloroethane	1.0
24V	tetrachloroethylene	1.0
25V	toluene	1.0
26V	1,2-trans-dichloroethylene	1.0
27V	1,1,1-trichloroethane	1.0
28V	1,1,2-trichloroethane	1.0
29V	trichloroethylene	1.0
31V	vinyl chloride	1.0

Acid Compounds - EPA Method 625		MDL ug/l (ppb)
1A	2-chlorophenol	1.0
2A	2,4-dichlorophenol	1.0
3A	2,4-dimethylphenol	1.0
4A	4,6-dinitro-o-cresol	1.0
5A	2,4-dinitrophenol	2.0
6A	2-nitrophenol	1.0
7A	4-nitrophenol	1.0
8A	p-chloro-m-cresol	2.0
9A	pentachlorophenol	1.0
10A	phenol	1.0
11A	2,4,6-trichlorophenol	1.0

Pesticides - EPA Method 608		MDL ug/l (ppb)
1P	aldrin	0.059
2P	alpha-BHC	0.058
3P	beta-BHC	0.043
4P	gamma-BHC	0.048
5P	delta-BHC	0.034
6P	chlordane	0.211
7P	4,4 ' -DDT	0.251
8P	4,4 ' -DDE	0.049
9P	4,4 ' -DDD	0.139
10P	dieldrin	0.082
11P	alpha-endosulfan	0.031
12P	beta-endosulfan	0.036
13P	endosulfan sulfate	0.109
14P	endrin	0.050
15P	endrin aldehyde	0.062
16P	heptachlor	0.029
17P	heptachlor epoxide	0.040

Pesticides - EPA Method 608		MDL ug/l (ppb)
18P	PCB-1242	0.289
19P	PCB-1254	0.298
20P	PCB-1221	0.723
21P	PCB-1232	0.387
22P	PCB-1248	0.283
23P	PCB-1260	0.222
24P	PCB-1016	0.494
25P	toxaphene	1.670

Base/Neutral - EPA Method 625		MDL ug/l (ppb)
1B	acenaphthene *	1.0
2B	acenaphthylene *	1.0
3B	anthracene *	1.0
4B	benzidine	4.0
5B	benzo(a)anthracene *	2.0
6B	benzo(a)pyrene *	2.0
7B	3,4-benzofluoranthene *	1.0
8B	benzo(ghi)perylene *	2.0
9B	benzo(k)fluoranthene *	2.0
10B	bis(2-chloroethoxy)methane	2.0
11B	bis(2-chloroethyl)ether	1.0
12B	bis(2-chloroisopropyl)ether	1.0
13B	bis(2-ethylhexyl)phthalate	1.0
14B	4-bromophenyl phenyl ether	1.0
15B	butylbenzyl phthalate	1.0
16B	2-chloronaphthalene	1.0
17B	4-chlorophenyl phenyl ether	1.0
18B	chrysene *	1.0
19B	dibenzo (a,h)anthracene *	2.0
20B	1,2-dichlorobenzene	1.0
21B	1,3-dichlorobenzene	1.0
22B	1,4-dichlorobenzene	1.0
23B	3,3 ' -dichlorobenzidine	2.0
24B	diethyl phthalate	1.0
25B	dimethyl phthalate	1.0
26B	di-n-butyl phthalate	1.0
27B	2,4-dinitrotoluene	2.0
28B	2,6-dinitrotoluene	2.0
29B	di-n-octyl phthalate	1.0
30B	1,2-diphenylhydrazine (as azobenzene)	1.0
31B	fluoranthene *	1.0
32B	fluorene *	1.0
33B	hexachlorobenzene	1.0
34B	hexachlorobutadiene	1.0
35B	hexachlorocyclopentadiene	2.0
36B	hexachloroethane	1.0
37B	indeno(1,2,3-cd)pyrene *	2.0
38B	isophorone	1.0
39B	naphthalene *	1.0
40B	nitrobenzene	1.0
41B	N-nitrosodimethylamine	1.0
42B	N-nitrosodi-n-propylamine	1.0
43B	N-nitrosodiphenylamine	1.0
44B	phenanthrene *	1.0
45B	pyrene *	1.0
46B	1,2,4-trichlorobenzene	1.0

OTHER TOXIC POLLUTANTS

	MDL ug/l (ppb)
Antimony, Total	5.0
Arsenic, Total	5.0
Beryllium, Total	0.2
Cadmium, Total	1.0
Chromium, Total	5.0
Chromium, Hexavalent	20.0
Copper, Total	20.0
Lead, Total	3.0
Mercury, Total	0.5
Nickel, Total	10.0
Selenium, Total	5.0
Silver, Total	1.0
Thallium, Total	5.0
Zinc, Total	20.0
Asbestos	**
Cyanide, Total	10.0
Phenols, Total	50.0
TCDD	**
MTBE (Methyl Tert Butyl Ether)	1.0

* Polynuclear Aromatic Hydrocarbons
** No Rhode Island Department of Environmental Management (RIDEM) MDL

NOTE:

The MDL for a given analyte may vary with the type of sample. MDLs which are determined in reagent water may be lower than those determined in wastewater due to fewer matrix interferences. Wastewater is variable in composition and may therefore contain substances (interferents) that could affect MDLs for some analytes of interest. Variability in instrument performance can also lead to inconsistencies in determinations of MDLs.

To help verify the absence of matrix or chemical interference the analyst is required to complete specific quality control procedures. For the metals analyses listed above the analyst must withdraw from the sample two equal aliquots; to one aliquot add a known amount of analyte, and then dilute both to the same volume and analyze. The unspiked aliquot multiplied by the dilution factor should be compared to the original. Agreement of the results within 10% indicates the absence of interference. Comparison of the actual signal from the spiked aliquot to the expected response from the analyte in an aqueous standard should help confirm the finding from the dilution analysis. (Methods for Chemical Analysis of Water and Wastes EPA-600/4-79/020).

For Methods 624 and 625 the laboratory must on an ongoing basis, spike at least 5% of the samples from each sample site being monitored. For laboratories analyzing 1 to 20 samples per month, at least one spiked sample per month is required. The spike should be at the discharge permit limit or 1 to 5 times higher than the background concentration determined in Section 8.3.2, whichever concentration would be larger. (40 CFR Part 136 Appendix B Method 624 and 625 subparts 8.3.1 and 8.3.11).

C. 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

Monitoring results obtained during the previous quarter shall be summarized and reported on Discharge Monitoring Report (DMR) Forms, postmarked no later than the 15th day of the month following the completed quarter as follows:

Quarter Testing to be Performed	Report Due No Later Than	Results Submitted on DMR for
January 1 - March 31	April 15	March
April 1 - June 30	July 15	June
July 1 - September 30	October 15	September
October 1 - December 31	January 15	December

The first report is due on **January 15, 2010**.

A signed copy of these, and all other reports required herein, shall be submitted to:

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

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

STATEMENT OF BASIS

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

RIPDES PERMIT NO. **RI0023558**

NAME AND ADDRESS OF APPLICANT:

Sakonnet Point Club, Incorporated
50 Sakonnet Point Road
Little Compton, Rhode Island 02837

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Sakonnet Point Club, Incorporated
Bluff Head Avenue
Little Compton, Rhode Island 02837

RECEIVING WATER: Sakonnet River

CLASSIFICATION: SA

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

The Sakonnet Point Club, Inc. in Little Compton, Rhode Island has applied to the Rhode Island Department of Environmental Management for renewal of its RIPDES Permit to discharge into the Sakonnet River. The discharge consists of brackish effluent from a Reverse Osmosis system that is used as a public drinking water supply for the Sakonnet Point Club.

II. Limitations and Conditions

The effluent limitations of the permit and the monitoring requirements may be found in the draft permit.

III. Permit Basis and Explanation of Effluent Limitation Derivation

The Sakonnet Point Club proposes to continue operating a desalination water treatment facility to supply drinking water for the yacht club and associated facilities on Bluff Head Avenue in Little Compton, Rhode Island. Groundwater will be treated by using prefiltration, Reverse Osmosis (RO), and ultraviolet disinfection. The discharge to the Sakonnet River, a Class SA water body, consists of brackish effluent from the RO desalination system.

Development of Rhode Island Pollutant Discharge Elimination System (RIPDES) permit limitations is a multi-step process consisting of the following steps: calculating allowable water quality-based discharge levels based on in-stream criteria, background data and available dilution; identifying applicable technology-based limits; assigning appropriate Best Professional Judgement (BPJ) limits; setting the most stringent limits as final limits; and evaluating the ability of the facility to meet the final permit effluent limits.

The RIDEM has established BPJ limits for Flow, total suspended solids (TSS), and total dissolved solids (TDS) in accordance with Section 402(a)(1) of the Clean Water Act (CWA). The requirements for TSS and TDS have been set as monitor only, as TSS and TDS are reverse osmosis "process-control parameters" that can aid in the assessment of the operation of the plant. As explained below, the flow limit was set equal to 5000 gallons per day. The DEM will continue to collect Flow, TSS, and TDS data to evaluate potential impacts to the receiving water.

The "Maximum" and "Minimum" pH limitations are based upon Table 2 of Rule 8.D(3), Class-Specific Criteria – Sea Waters of the Rhode Island Water Quality Regulations, adopted in accordance with Chapter 42-35 pursuant to Chapters 46-12 and 42-17.1 of the Rhode Island General Laws of 1956, as amended.

Rule 8.D(1)(f) of the Rhode Island Water Quality Regulations allows the Director to recognize, where appropriate a limited acute and/or chronic mixing zone(s) on a case by case basis. As indicated in the previous permit, the DEM has already determined that mixing zones are appropriate.

In the original permit application, submitted prior to permit issuance in 2002, the SPC proposed discharging via a submerged outfall with a multi-port diffuser, consisting of eight (8) ¾ inch diffuser ports, 20 feet from the shoreline. The available dilution was modeled and presented in *Attachment B of the Sakonnet Point Club Water Treatment Facility Permit Development Document* dated June 2002. The mixing zone analysis assumed a diffuser discharge depth of 3 meters (9.8 ft) at a distance of 20 feet from the shoreline. New information provided by the SPC in 2007 and 2008 revealed that at a distance of 20 feet from the shoreline, the diffuser depth was not 9.8 feet as originally modeled. As a result of these findings, in December of 2007 the SPC extended the diffuser from its original location to a distance of 116 feet from the shoreline. The diffuser coordinates were specified as 41° 27.891N, 71° 11.810W. In a revised diffuser depth study report dated April 16, 2008, the depth to the top of the relocated diffuser was confirmed to be 13.3 feet relative to Mean Low Water (MLW) or, since the diffuser is located on a 3 ft high concrete block, 16.3 feet of total water depth relative to MLW. Given the fact that the new diffuser location is further from the shoreline and the fact that it was relocated to deeper waters and based on the SPC's request to increase the discharge flow from 3,000 gpd to 5,000 gpd, the DEM has updated the 2002 Cormix dilution model to reflect these new conditions. The updated Cormix output files are available in the *May 2009 Sakonnet Point Club Drinking Water Treatment System Development Document.*

Chronic Mixing Zone

In order to comply with Antidegradation Requirements a revised Chronic Mixing Zone Radius of 354 feet has been established in order to keep the mixing zone of the relocated outfall within the original 450 foot mixing zone radius established in the 2002 permit. By holding the chronic mixing zone radius at 354 ft, the new mixing zone will not extend beyond the 450 ft mixing zone radius originally established, despite the fact that the outfall has been extended 96 ft further from the shoreline. As illustrated in the Mixing Zone Diagram shown in Attachment B of the *May 2009 Sakonnet Point Club Drinking Water Treatment System Development Document*, the entire chronic mixing zone area has also been effectively decreased.

Using the Cormix modeling software a chronic dilution factor of 275.7 has been established using

a mixing zone radius of 354 ft at the new diffuser depth and location and the new flow rate of 5000 gallons/day. The Cormix Modeling inputs and outputs for the Acute and Chronic dilution factors are available in the *May 2009 Sakonnet Point Club Drinking Water Treatment System Development Document*.

Acute Mixing Zone

The size of the acute mixing zone was determined using the EPA's recommended criteria from the Technical Support Document for Water Quality-Based Toxics Control (the "TSD") which indicates how the acute mixing zone should be selected. Using this guidance document an acute mixing zone radius of 7.9 feet has been established. Based upon the updated Cormix modeling results, an acute dilution factor of 103.6 has been established at a mixing zone radius of 7.9 feet.

Since the Acute and Chronic dilution factors have decreased all water quality based limit calculations have been performed using the revised acute and chronic dilution factors. The net result is that there will not be an increase in either the acute or chronic water quality based limits and, therefore, since there is no increase in pollutant loadings, the Antidegradation requirements have been satisfied.

Reasonable Potential

In accordance with 40 CFR 122.4(d)(1)(iii), it is only necessary to establish water quality-based permit limits for those pollutants in the discharge, which have the reasonable potential to cause or contribute to the exceedance of in-stream criteria.

Since the proposed system will use groundwater as the source water to its RO system, the DEM evaluated well data which was representative of the contributions from wells 1 and 2, along with DMR effluent data collected during the period between January 1, 2003 to September 30, 2008 to determine which pollutants have reasonable potential to exceed applicable water quality based limitations.

The previous permit required the permittee to sample the effluent for TSS, pH, Total Copper, and Total Dissolved Solids. Copper and pH limitations were the only water quality based limitations applied in the permit. Based on a review of the DMR data provided to the DEM the highest total copper value detected in the system effluent was 133 ug/l. This maximum discharge value exceeds 50% of the water quality-based limit for copper. Therefore, based on the DMR data collected, there is reasonable potential for the discharge to violate the total copper permit limitations and the DEM has included copper limits in the permit based on the revised dilution factors presented above. DMR data for pH indicates that the discharge will remain within the permitted range of 6.5-8.5 s.u. Flow, TSS, TDS, and pH limitations will remain in place in order to ensure that the treatment system is well operated and to develop a more extensive database of these constituents in the discharge. For a more detailed listing of the Discharge Monitoring Report Data please refer to the *May 2009 Sakonnet Point Club Drinking Water Treatment System Development Document*.

In March of 2008, a raw well water 24-hr composite sample was analyzed for a variety of constituents, the results of which are summarized in Attachment D of the *May 2009 Sakonnet Point Club Drinking Water Treatment System Development Document*. The DEM reviewed these results to determine if any of the constituents detected in the composite sample would have reasonable potential to violate applicable water quality criteria. The only pollutant detected in the system influent composite sample, for which Water Quality criteria existed, was Ammonia (as N). The Ammonia (as N) concentration detected in the March 2008 influent composite sample was 11 mg/l. The DEM evaluated this influent data using the same rationale that was used in the 2002 permit development document. Assuming that the corresponding treatment system effluent concentration is based on influent concentration and the RO system percent recovery. Based on

revised operational data submitted on behalf of the Sakonnet Point Club the actual RO system recovery rate is 45.6%. This value is less than the 66% value assumed during the development of the 2002 permit prior to system startup. Attachment F of the May 2009 Sakonnet Point Club Permit Development Document contains the basis for the 45.6% recovery ratio, which is based on Water Treatment System Operational Data collected from June 2008 to May 2009. Using the 45.6% RO system recovery, the following equation can be used to calculate the expected effluent concentration of Ammonia (as N) in the discharge:

$$Effluent = Influent/0.544$$

Using the above listed equation and an Ammonia (as N) influent concentration of 11 mg/l, the expected discharge concentration can be assumed to be 20.22 mg/l. Comparing this value to the applicable water quality based limits indicates that there is no reasonable potential for the discharge to exceed water quality criteria. As a result, Ammonia (as N) limitations have not been included in the permit. Additional details on the reasonable potential analysis can be found in the *May 2009 Sakonnet Point Club Drinking Water Treatment System Development Document.*

Technology-Based Limits

There are currently no Technology-Based Limits for this discharge.

Best Professional Judgement (BPJ) Limitations

The RIDEM has established BPJ limits on flow, TSS, and TDS in accordance with Section 402(a)(1) of the Clean Water Act (CWA).

The permitted discharge flow limit of 5000 gpd has been selected to be consistent with the previously mentioned dilution modeling and to allow the water treatment system to produce a maximum daily potable water volume consistent with the original water supply system design basis used for the Sakonnet Point Club. This potable water volume of 4200 gpd is less than the OWTS design flow rate of 4,870 gpd and is therefore compatible with the facility design and operation and the existing OWTS permit.

The requirements for total suspended solids (TSS) and total dissolved solids (TDS) have been set as monitor only, as TSS and TDS are RO "process-control parameters" that can aid in the assessment of the operation of the plant. The DEM will also utilize ongoing TSS and TDS data to evaluate potential impacts to the receiving water.

Cleaning Chemicals

This permit does not authorize the discharge of cleaning chemicals. All cleaning chemicals must be disposed of off-site in accordance with applicable State, Local, and Federal regulations.

To ensure that all cleaning chemicals are disposed of appropriately, the permit requires that an annual report be submitted to the DEM. This report is due January 15th for the previous calendar year and must identify when each cleaning cycle was conducted and where the cleaning waste was disposed.

Diffuser Integrity

In addition, the permit requires the permittee to conduct a video inspection of the diffuser line for damage or leaks at a minimum frequency of once every two years. The results of an annual diffuser line inspection must be submitted to the DEM by January 15th of the year following the biennial video inspection.

IV. 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.

V. 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 Lafaille, P.E.
RIPDES Program
Office of Water Resources
Department of Environmental Management
235 Promenade Street
Providence, Rhode Island 02908
Telephone: (401) 222-4700, ext. 7731

6/15/09
Date

Eric A. Beck, P.E.
Supervising Sanitary Engineer
RIPDES Permitting Section
Office of Water Resources
Department of Environmental Management