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November 16, 2011

VIA FEDEX EXPRESS
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U.S. Environmental Protection Agency
Clerk of the Board, Environmental Appeals Board
1314 G Street, N.W., Suite 600
Washington, D.C. 20005

RE: Puerto Rico Aqueduct and Sewer Authority
NPDES Permit No. PR0021555

Dear Sirs:

Enclosed for filing please find original and one copy of Petition for Review in the case of reference. I will appreciate if you return stamped filed in the enclosed addressed envelope the enclosed additional copy that is without exhibits.

Cordially,

Jorge Marrero Narváez

Enclosure

c: Ms. Barbara McGarry, Chief
Compliance Assistance and Program Support Branch
U.S. Environmental Protection Agency, Region II

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BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:)
)
Puerto Rico Aqueduct and Sewer Authority)
)
NPDES Permit No. PR0021555)
)

PETITION FOR REVIEW

November 16, 2011

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INTRODUCTION

Pursuant to Title 40 Part 124.19 of the Code of Federal Regulations (40 C.F.R. § 124.19), the Puerto Rico Aqueduct and Sewer Authority (“Petitioner” or “PRASA”) petitions for review of certain conditions of National Pollutant Discharge Elimination System (NPDES) Permit No. PR0021555 (the “Permit”). The Permit was signed on September 28, 2011, and mailed on October 18, 2011, certified mail-return receipt requested, by the Environmental Protection Agency (EPA). Petitioner contends those conditions are based on clearly erroneous findings of facts and conclusions of law and involved an exercise of discretion and important policy consideration that warrant review by the Environmental Appeals Board (EAB). Specifically, Petitioner challenges the following permit conditions:

1. Special Condition 20(b) concerning whole effluent toxicity (WET) limitations; and
2. The stipulated location of the Barriada Figueroa combined sewer overflow (CSO) outfall location, as defined in Attachment 2 to the permit

THRESHOLD PROCEDURAL REQUIREMENTS

Petitioner has standing to petition for review under 40 C.F.R. Part 124 because it participated in the comment period. *See* 40 C.F.R. § 124.19(A). A copy of the written comments submitted by Petitioner is provided as Exhibit A. The issues raised by Petitioner in this petition were raised during the public comment period, and therefore were preserved for review. Statements of facts, arguments, and specific petitions are discussed below with respect to WET limitations and the appropriate location of the Barriada Figueroa CSO Outfall.

WHOLE EFFLUENT TOXICITY LIMITATIONS STATEMENT OF FACTS

1. On April 14, 2010, the Puerto Rico Environmental Quality Board (EQB) issued a draft Water Quality Certificate (WQC). (See Exhibit B.)
2. The draft WQC establishes a requirement to conduct definitive acute and chronic toxicity tests pursuant to Rule 1305.4 parts D.1 and D.2 of the Puerto Rico Water Quality Standards Regulation (PRWQSR) and the EQB *Mixing Zone and Bioassay Guidelines*. Special Conditions 19(c, d, e, f, g, and h) of the draft WQC establish the EQB requirements to comply with toxicity tests and assure compliance with the PRWQSR.
3. EPA was notified that the draft WQC was available for review and had the opportunity to comment on the draft WQC during the WQC comment process and before EQB issued the final WQC. To PRASA's knowledge, EPA submitted no comments and, thus, consented to the draft WQC and the WQC process. PRASA—and, based on information and belief, EQB—reasonably relied upon EPA's consent with the draft WQC and the WQC process.
4. On June 3, 2010, EQB issued a final WQC which includes the provisions described in paragraph 2 above. (See Exhibit C.)

5. On July 1, 2011, EPA issued a Fact Sheet (See Exhibit D.) and draft permit PR0021555 (See Exhibit E.). The draft NPDES permit significantly modified the final WQC by imposing Special Condition 20(b) (Whole Effluent Toxicity Requirements) with significantly more stringent and onerous conditions/limitations than those imposed in the final WQC, the PRWQSR, the *Mixing Zone and Bioassay Guidelines*, and the current NPDES permit. Additionally, unlike the existing NPDES permit, the draft permit failed to describe the test result by which compliance would be determined.

6. On August 15, 2011, Petitioner timely commented on the draft NPDES permit, in part, that EPA had wrongly modified the final WQC provisions as described in paragraph 5 above. (See Exhibit A.)

7. On September 28, 2011, EPA issued a final NPDES permit. EPA denied Petitioner's comment that EPA had wrongly modified the final WQC provisions as described in paragraph 6 above. (See Exhibit F.)

WHOLE EFFLUENT TOXICITY LIMITATIONS PETITION

EPA significantly modified, and failed to incorporate in the NPDES permit, certain conditions that were imposed by EQB in the final WQC. The NPDES permit and the conditions therein set forth below are based on clearly erroneous findings of facts and involved an exercise of discretion and important policy consideration that warrants review by the EAB. The Petitioner

hereby requests this Board to grant review of this case and order EPA to modify Special Condition 20(b) of the NPDES permit so that it is consistent with the previous NPDES permit, the final WQC for the new Permit, the PRWQSR and the *Mixing Zone and Bioassay Guidelines* with respect to the numeric limitations for toxicity that are stipulated in the *Mixing Zone and Bioassay Guidelines* and incorporated by reference in the PRWQSR. More specifically, set the effluent Chronic Toxicity criterion (TU_c) at 102 instead of 83.32 and clarify that the 25 percent Inhibition Concentration (IC₂₅) will be used as the compliance measurement to be applied to WET test results instead of the No Observed Effects Concentration (NOEC).

WHOLE EFFLUENT TOXICITY LIMITATIONS ARGUMENT

- I. THE NEWLY EPA IMPOSED SPECIAL CONDITION 20(b) (WHOLE EFFLUENT TOXICITY REQUIREMENTS) WRONGLY FAILS TO CONSIDER THAT THE PRWQSR INCORPORATES BY REFERENCE THE NUMERICAL TU_c LIMITATION DEFINED IN THE EQB *MIXING ZONE AND BIOASSAY GUIDELINES* AND IS UNCLEAR THAT THE IC₂₅, RATHER THAN THE NOEC, IS THE APPROPRIATE MEANS BY WHICH TO EVALUATE COMPLIANCE WITH WHOLE EFFLUENT TOXICITY LIMITATIONS.

Special Condition 20(b) states that “No test result for any species or effect in the combined discharge shall be greater than 83.32 TU_c.” There are two concerns with this limitation:

1. EPA should have calculated the TUC as 102, not 83.32, based on the EQB *Mixing Zone and Bioassay Guidelines* requirement and the critical initial dilution (CID);
and
2. EPA does not list the WET test measure to be applied in determining compliance with the permit limitation, but has verbally expressed that it will use the NOEC instead of the IC₂₅ that was applied in the previous permit.

EPA's Inappropriate TUC Calculation

The TUC value calculated by EPA is based on the premise in its Fact Sheet that the PRWQSR does not have a numerical TUC limitation (included by reference to EQB's *Mixing Zone and Bioassay Guidelines*), and that EPA would, therefore, need to establish one by making its own calculation. However, the PRWQSR does have a numerical limitation for toxicity. In the case where a mixing zone is granted for discharge to marine waters, Rule 1305.4 (D.2 and D.3) requires that the acute toxicity units do not exceed the criteria maximum concentration (CMC) and the chronic toxicity units do not exceed the criteria continuous concentration (CCC) at the boundaries of the mixing zone after CID. The numerical values of the CMC and CCC are provided in EQB's *Mixing Zone and Bioassay Guidelines*, which is included by reference as a part of the PRWQSR.

Further, in making its own calculation to establish an appropriate numerical limitation for TUC, EPA failed to take into account the procedures that EQB applies to developing numerical limitations for parameters that require—and are eligible for—mixing zones, which include effluent toxicity. Specifically, EQB applies the CID to the criterion for each parameter approved

for a mixing zone and established an effluent limitation based on that calculation. EPA accepted the limitations for all of the parameters requiring a mixing zone except for whole effluent toxicity. However, because the PRWQSR does have a numerical limitation for toxicity, that limitation should be treated in the same manner as all other limitations listed in Table A-1 that are subject to a mixing zone. This is clearly the intent of the EQB WQC and is the procedure specified by EQB as demonstrated in Appendix A (example calculations) in the EQB *Mixing Zone and Bioassay Guidelines*. The field-validated CID for this outfall is 102, which, when coupled with the EQB approach to setting effluent toxicity limitations, results in a TUc of 102. The appropriate value is 102 TUc, not 83.32 TUc.

Problems with Use of the NOEC to Evaluate Effluent Toxicity for *Arbacia*

Arbacia is a species for which conventional statistically based hypothesis testing alone typically fails to provide biologically meaningful results with respect to identifying toxicity for the purposes of permit compliance reporting. The problems with the use of NOEC stem largely from the very low variability in the control test fertilization responses. Because of this low variability, a very small difference between test dilutions and controls may be found to be statistically significant and interpreted as “toxic,” even when the results instead may lie within the range of the normal biological variability that is considered to be acceptable for the control replicates.

The key issues of concern to PRASA are as follows:

- The NOEC is an inappropriate measure by which to evaluate compliance with effluent chronic toxicity criteria for *Arbacia*

- There is no demonstrable (and no good) reason for EPA to have changed from the IC₂₅ used in the previous permit for these compliance evaluations
- Using the NOEC will result in false positive reporting problems that will cause will cause excessive expenditure of time and effort where none is logically required

General Discussion

The EPA *Technical Support Document for Water Quality-Based Toxics Control* (TSD)¹ and another subsequent EPA document that addresses statistical variability, WET test analysis methodology, and NPDES compliance reporting² provide insight and interpretive guidance that support a broader and more flexible evaluation of *Arbacia* WET test results than relying only on statistical hypothesis testing. In fact, the aforementioned EPA WET test evaluation guidance consistently recommends point estimation methods in preference to statistical hypothesis testing (concluding, “For the above reasons, if possible, the IC₂₅ is the preferred statistical method for determining the NOEC.”), as does similar guidance from a number of states: including New Jersey³ and Washington⁴.

The NOEC is an Inappropriate Measure of Toxicity for Arbacia

The NOEC is based on determining whether there is a statistical difference in the measured effect between control and experimental populations. In the case of *Arbacia*, the measured effect is fertilization success. The test protocols employ high sperm-to-egg ratios and

¹EPA. *Technical Support Document For Water Quality-based Toxics Control*. March 1991. p. 6.

²EPA. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System*. EPA 833-R-00-003. June 2000.

³New Jersey Administrative Code 7:14A-13.14

⁴Washington Department of Ecology. *Laboratory Guidance and Whole Effluent Toxicity Test Review Criteria*. Publication No. WQ-R-95-80. 2008.

thereby often result in extremely high fertilization and low variability among the control population replicates. Thus, even a very small change (for example, a statistically significant change of 1 percent) between the test series and the control fertilization success is interpreted as a toxic effect and the test is reported as a “failure” to comply with toxicity criteria. This is true even though the basis for “success” within the control population according to the EPA WET test protocol includes fertilization rates as low as 70 percent.

In other words, a 1-percent difference between the test series fertilization success and that of the control population can result in a “failure” even though a 30-percent difference within the control population is rated as a “success” for that portion of the testing. The consequence is often the reporting of false positive results that indicate “toxicity” according to the evaluation protocol, even though there is not a biologically meaningful result.

For this reason, both EPA and various state toxicity testing guidance documents recommend that the NOEC should not be used to evaluate test results when the control population variability is low. Instead, this guidance points to use of the IC₂₅, or some other established estimate of biological significance representing a point along an established dose-response curve based on all the available test data that indicates where biologically meaningful responses (toxic effects) begin to occur within the test series dilutions.

In addition, the Percent Minimum Significant Difference (PMSD) “...represents the smallest difference between the control mean and a treatment mean that leads to the statistical rejection of the null hypothesis (i.e., no toxicity)...”⁵. EPA⁶ recommends that regulatory

⁵EPA. *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications under the National Pollutant Discharge Elimination System*. EPA 833-R-00-003. June 2000.

⁶EPA. *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing* (40 CFR Part 136). Office of Water. EPA 821-B-00-004. July 2000.

authorities implement both the lower and upper PMSD bound approach to minimize within-test variability when using hypothesis testing approaches to report a NOEC. This is done in part to avoid penalizing laboratories that achieve unusually high precision. Lower PMSD bounds represent a practical limit to the sensitivity of the test method that few laboratories are able to achieve, and below which NOECs or LOECs are not be considered toxic (i.e., significantly different from the control). For inland silverside minnows (*Menidia beryllina*) and mysid shrimp (*Mysidopsis bahia*), for example, the lower bound of the PMSDs established via the EPA interlaboratory testing program was 11 percent. PMSD upper and lower bounds were not established by EPA for *Arbacia*. However, it is reasonable to adopt a PMSD equal to the most sensitive value determined for another invertebrate WET test species, such as the 11 percent lower PMSD for mysid shrimp when evaluating *Arbacia* WET test data.

There is no Demonstrable Reason for EPA to have Changed to the NOEC

After considerable correspondence with EPA and EQB concerning the appropriate compliance measure to use for *Arbacia*, in a June 22, 2007, meeting between Bacardi and EPA staff and their respective consultants and attorneys, it was agreed that the IC₂₅ calculation would be applied to flow proportionally blended samples from the Bacardi, Bayamón, and Puerto Nuevo effluent streams to assess chronic effluent toxicity compliance for *Arbacia* per the conditions of the upcoming permit. However, EPA indicated that it would require bioassays in each of the individual effluent streams, and that toxicity identification evaluation/toxicity reduction evaluation (TIE/TRE) action would be initiated if the blended compliance sample failed and the individual samples demonstrated unacceptable toxicity.

All WET test results reported to EPA and EQB by Bacardi and PRASA under the conditions of the previous permits for the three facilities include a presentation of NOEC, LOEC,

IC₂₅, and TUC calculations. Figure 1 shows a typical summary of quarterly test results from the August 2011 WET compliance testing report.

To date, there have been no failures of the combined effluent to meet chronic toxicity criteria for *Arbacia* when applying the IC₂₅ and using the appropriate TUC of 102. Further, after more than a decade of intensive and extensive sampling around the joint outfall, it has been clearly and repeatedly demonstrated that there are no effects associated with this discharge in the vicinity of the outfall on:

- Fish or benthic invertebrate populations;
- Water column concentrations of toxic organic or inorganic constituents;
- Fish tissue accumulations of toxic organic or inorganic constituents;
- Sediment accumulations of toxic organic or inorganic constituents; and
- Phytoplankton concentrations.

In other words, in more than 10 years of intensive monitoring, there has been no measureable ecological response to this discharge, which further validates the toxicity conclusions based on the biologically relevant IC₂₅ evaluation of effluent toxicity to the most sensitive stage in an organism's life cycle (i.e., fertilization).

The previous permits for each of the three facilities incorporated this logic and specified the toxicity effluent limitation as follows:

b. Effluent Limitation:

No single IC25 test result for any species or effect in the combined discharge shall be less than 1.00%.

Results shall be reported as the IC25 percentage effluent of the combined discharge. This permit requires additional toxicity testing if a chronic toxicity effluent limit is violated.

The permittee shall notify EPA in writing within fourteen days of the permittee's receipt of results violating this effluent limitation.

Nonetheless, on September 27, 2011, Bacardi and PRASA received renewed final NPDES permits for all three facilities.⁷ In each permit, the effluent limitation for toxicity was changed to read as follows:

b. Effluent Limitation:

No test result for any species or effect in the combined discharge shall be greater than 83.32 TUc.

The 2011 permit is not clear with respect to why 83.32 was used as the TUc limit when the EQB *Mixing Zone and Bioassay Guidelines* coupled with the CID for this outfall supports a TUc of 102. Further, although the specific measure to be applied to determine compliance with whole effluent toxicity limitations is not stated for any of the test species, subsequent conversations with the EPA permit writer⁸ have indicated that, under the new permits, the NOEC rather than the IC₂₅ will be used to evaluate compliance with effluent toxicity criteria.

⁷All three facilities have an effective date of permit (EDP) of December 1, 2011.

⁸Julio Torruella/Bacardi telephone conversation with Karen O'Brien/EPA on October 14, 2011.

Figure 1. Typical Chronic WET Test Results Summary

Chronic Definitive Bioassays Using the Sea Urchin (*Arbacia punctulata*)

Introduction

Hydrosphere Research¹ conducted chronic definitive whole effluent toxicity (WET) tests using the sea urchin (*Arbacia punctulata*) for the Bacardi Corporation wastewater treatment plant (WWTP) as well as for the Puerto Rico Aqueduct and Sewer Authority (PRASA) Bayamón and Puerto Nuevo Regional WWTPs. The tests were conducted on samples from each facility individually and also on a salinity-adjusted, flow-proportioned composite sample from the effluent of each of the three plants. The tests were conducted on August 25, 2011.

Summary of Test Results

Exhibit 1 summarizes the test results. Test data and further discussion are provided in the Results and Discussion section.

EXHIBIT 1
Summary of Chronic Test Results

Species	Sample ID	NOEC	LOEC	IC ₂₅	TUc
<i>Arbacia punctulata</i>	Combined discharge	27.0%	9.0%	35.9%	2.79
<i>Arbacia punctulata</i>	Bacardi WWTP	0.27%	0.09%	1.11%	90.1
<i>Arbacia punctulata</i>	Bayamón RWWTP	8.1%	0.09%	>24.3%	<4.12
<i>Arbacia punctulata</i>	Puerto Nuevo RWWTP	48.6%	>48.6%	>48.6%	<2.06

Notes:

NOEC=no observed effect concentration

LOEC=lowest observed effect concentration

IC₂₅=inhibition concentration (estimate of the concentration that would cause a 25-percent reduction in test organism growth or fecundity)

TUc=toxic unit chronic (100%/IC₂₅)

The current National Pollutant Discharge Elimination System (NPDES) permits for the Bayamón, Puerto Nuevo, and Bacardi wastewater treatment plants stipulate that "No single IC₂₅ test result for any species or effect in the combined discharge shall be less than 1.00%." The combined discharge clearly meets that condition for this series of bioassay tests.

Methods and Materials

Test Methods

All chronic tests were performed according to: *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms*, Third Edition (2002); EPA 821-R-02-014.

Additional guidance was provided by:

- *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program*, (EPA June 2000), EPA 833-R-00-003.
- *Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing* (40 CFR Part 136), (EPA July 2000), EPA 821-B-00-004.

¹The results and methodology from the Hydrosphere Research sea urchin test are summarized in this report. However, more details from this testing are provided in the Hydrosphere Research report (see Appendix A).

It is not clear why EPA changed both the effluent limitation for TUC and the compliance evaluation protocol, but in the process, it apparently failed to take into account—or even acknowledge—the following:

- A mixing zone for effluent toxicity can be granted under the PRWQSR based on the numerical results of WET test calculations and the verified CID⁹ of the effluent as it rises through the water column. Using this approach, and the data and reports available to EPA, the TUC should be stated as 102, not 83.32.
- The results of the previous white paper¹⁰ clearly indicate the problems associated with applying the NOEC to the *Arbacia* to calculate a TUC.
- There is specific EPA guidance that recommends using a point estimate such as the IC₂₅ to evaluate toxicity where the NOEC fails to adequately address biologically significant responses to potential toxicants.
- The agreement reached in the June 22, 2007, meeting on the basis of the arguments put forward in the previous white paper that the IC₂₅ is an appropriate criterion by which to evaluate effluent chronic effluent toxicity for *Arbacia*.
- Both EPA and EQB accepted both the IC₂₅ as the basis for evaluating effluent toxicity for *Arbacia* and the concept of a TUC of 102 in relation to the WET test reporting as done under the previous permits.

⁹The CID is the lowest postulated initial dilution based on very conservative model inputs. Actual field-verified initial dilutions generally exceed the CID by a factor of at least 2 or 3.

¹⁰CH2M HILL. *White Paper Discussion and Recommendations Related to Arbacia punctulata Whole Effluent Toxicity Testing Using Combined Effluent from the Bayamón, Puerto Nuevo and Bacardi Wastewater Treatment Plants*. Prepared for Bacardi Corporation. May 2007. Attached to Bacardi's comments on the draft NPDES permit. (See Exhibit G attached hereto.)

Application of the NOEC will Result in Excessive and Unnecessary Effort

Under the effluent toxicity limitations provided in the previous NPDES permits for the Bacardi and PRASA facilities, application of the IC₂₅ for compliance evaluations led to the conclusion that the toxicity of the combined effluent consistently complied with PRWQSR criteria for all three test species. There were only two toxicity “failures” of the combined effluent under the IC₂₅ evaluation protocol, the most recent being in May 2007 (see Table 1). None of the test failures was related to *Arbacia* test results. However, as discussed above, applying the NOEC to evaluate the effluent toxicity compliance would have resulted result in false positive results and reporting of unacceptable toxicity where there were actually no meaningful biological responses to the effluent concentrations tested.

This was pointed out in the following tables (excerpted from the Bacardi comments on the July 2011 draft NPDES permit, Appendix B), which demonstrate that using the inappropriate NOEC as the chronic toxicity compliance measure and a TUc of 83.32 would have resulted in “failures” in many of the samples tested, and of those “failures” would have been related to misleading *Arbacia* test results.

TABLE 1			
<i>Bioassay Test Results for the Bayamón/Puerto Nuevo/Bacardi Flow-weighted Effluent Composite</i>			
<i>Comments on the Draft NPDES Permit WET Limitation for the Bacardi WWTS</i>			
Date	Organism	Percent Effluent	
		Chronic NOEC	Chronic IC25
September 2005	<i>Mysidopsis bahia</i>	6.25	0.68
	<i>Cyprinodon variegatus</i>	25	40.50
	<i>Arbacia punctulata</i>	Organism Not Available	N/A

TABLE 1

Bioassay Test Results for the Bayamón/Puerto Nuevo/Bacardi Flow-weighted Effluent Composite

Comments on the Draft NPDES Permit WET Limitation for the Bacardi WWTS

February 2006	<i>Mysidopsis bahia</i>	6.25	3.04
	<i>Cyprinodon variegatus</i>	25	29.2
	<i>Arbacia punctulata</i>	Not definitive	7.25
March 2006	<i>Mysidopsis bahia</i>	3.13	2.72
	<i>Cyprinodon variegatus</i>	25	51.8
	<i>Arbacia punctulata</i>	6	7.31
April 2006	<i>Mysidopsis bahia</i>	12.5	13.1
	<i>Cyprinodon variegatus</i>	25	34
	<i>Arbacia punctulata</i>	3	5
September 2006	<i>Mysidopsis bahia</i>	12.5	20
	<i>Cyprinodon variegatus</i>	50	59.6
	<i>Arbacia punctulata</i>	<0.78	1.68
November 2006	<i>Mysidopsis bahia</i>	6.25	8.6
	<i>Cyprinodon variegatus</i>	50	56.3
	<i>Arbacia punctulata</i> (Nov 4)	<0.78	1.7
	<i>Arbacia punctulata</i> (Nov 7)	1.56	4
April 2007	<i>Mysidopsis bahia</i>	10.7	2.96
	<i>Cyprinodon variegatus</i>	10.7	30.3
	<i>Arbacia punctulata</i> (Apr 17)	0.29	3.09
	<i>Arbacia punctulata</i> (Apr 19)	<0.09	2.12
	<i>Arbacia punctulata</i> (Apr 21)	<0.09	4.47

TABLE 1			
<i>Bioassay Test Results for the Bayamón/Puerto Nuevo/Bacardí Flow-weighted Effluent Composite</i>			
<i>Comments on the Draft NPDES Permit WET Limitation for the Bacardi WWTS</i>			
<i>May 2007</i>	<i>Mysidopsis bahia</i>	<i>Not definitive</i>	<i>0.49</i>
	<i>Cyprinodon variegatus</i>	<i>10.7</i>	<i>18.1</i>
	<i>Arbacia punctulata (May 1)</i>	<i>0.09</i>	<i>4.92</i>
	<i>Arbacia punctulata (May 3)</i>	<i>0.96</i>	<i>14.8</i>
	<i>Arbacia punctulata (May 5)</i>	<i>0.032</i>	<i>14.4</i>
<i>May 2007</i>	<i>Mysidopsis bahia</i>	<i>10.7</i>	<i>17.9</i>
	<i>Cyprinodon variegatus</i>	<i>10.7</i>	<i>18.2</i>
	<i>Arbacia punctulata (May 15)</i>	<i>0.09</i>	<i>4.88</i>
	<i>Arbacia punctulata (May 17)</i>	<i>0.96</i>	<i>3.01</i>
	<i>Arbacia punctulata (May 19)</i>	<i>0.29</i>	<i>5.23</i>
<i>May/June 2007</i>	<i>Mysidopsis bahia</i>	<i>10.7</i>	<i>0.21</i>
	<i>Cyprinodon variegatus</i>	<i>10.7</i>	<i>24.2</i>
	<i>Arbacia punctulata (May 31)</i>	<i>3.2</i>	<i>5.91</i>
<i>September 2008</i>	<i>Mysidopsis bahia</i>	<i>8.00</i>	<i>7.20</i>
	<i>Cyprinodon variegatus</i>	<i>16.0</i>	<i>>16.0</i>
	<i>Arbacia punctulata</i>	<i>0.96</i>	<i>4.15</i>
<i>December 2008</i>	<i>Arbacia punctulata</i>	<i>3.20</i>	<i>5.57</i>
<i>February 2009</i>	<i>Arbacia punctulata</i>	<i>9.00</i>	<i>13.5</i>
<i>June 2009</i>	<i>Arbacia punctulata</i>	<i>3.00</i>	<i>9.51</i>
<i>August 2009</i>	<i>Arbacia punctulata</i>	<i>1.00</i>	<i>4.34</i>
<i>November 2009</i>	<i>Mysidopsis bahia</i>	<i>16.0</i>	<i>14.5</i>

TABLE 1			
<i>Bioassay Test Results for the Bayamón/Puerto Nuevo/Bacardi Flow-weighted Effluent Composite</i>			
<i>Comments on the Draft NPDES Permit WET Limitation for the Bacardi WWTS</i>			
	<i>Cyprinodon variegatus</i>	16.0	>16.0
	<i>Arbacia punctulata</i>	3.00	4.31
<i>March 2010</i>	<i>Arbacia punctulata</i>	3.00	4.68
<i>May 2010</i>	<i>Arbacia punctulata</i>	9.00	13.96
<i>September 2010</i>	<i>Arbacia punctulata</i>	3.00	12.9
<i>November 2010</i>	<i>Mysidopsis bahia</i>	16.0	>16.0
	<i>Cyprinodon variegatus</i>	16.0	.16.0
	<i>Arbacia punctulata</i>	1.00	13.4
<i>March 2011</i>	<i>Arbacia punctulata</i>	9.00	13.9
<i>May 2011</i>	<i>Arbacia punctulata</i>	3.00	5.25
<i>Shaded entries indicate IC25 < 1.2% effluent.</i>			

These matters are discussed at greater length in the white paper on *Arbacia punctulata* WET testing, which was attached to Bacardi's comments on the draft NPDES permit (See Exhibit G.). An update to the toxicity white paper is provided as Exhibit H.

WHOLE EFFLUENT TOXICITY LIMITATIONS CONCLUSIONS

For the foregoing reasons, the inclusion of a new Special Condition 20(b), as proposed by EPA, is contrary to the final WQC, the PRWQSR, and the EQB *Mixing Zone and Bioassay Guidelines*, and as such, would be arbitrary, capricious, and otherwise not in accordance with law. Petitioner

requests this Board to grant review of this case and order EPA to modify Special Condition 20(b) of the NPDES permit so that it is consistent with the final WQC, the PRWQSR, and the *Mixing Zone and Bioassay Guidelines*.

BARRIADA FIGUEROA CSO OUTFALL LOCATION STATEMENT OF FACTS

1. On August 20, 2007, EPA issued a Water Compliance Inspection Report that noted (p. 7 of 9) “sewage and debris” in a storm sewer manhole “connected to the Puerto Rico Department of Natural and Environmental Resources’ (DNER) Barriada Figueroa Pump Station (PS) located at the Roosevelt Street” which discharges “into a channel tributary of the San Juan Bay and the Atlantic Ocean, waters of the United States.”
2. On August 24, 2007, EPA issued a request for information to PRASA in relation to the August 20, 2007, Water Compliance Inspection Report.
3. On October 31, 2007, PRASA responded and informed EPA of ten (10) potential discharge locations, including the Barriada Figueroa outfall (near the San Juan Natatorium).
4. On September 16, 2008, EPA issued Administrative Order Docket No. CWA-0202008-3155 requiring PRASA to cease all unauthorized discharges such as those through combined sewer outfalls, including the Barriada Figueroa outfall (near San Juan Natatorium).

5. On June 15, 2010, EPA reported that EPA and PRASA jointly inspected the Barriada Figueroa outfall on April 15. EPA notes¹¹ that PRASA reported that the area is served by separate sanitary and storm sewer systems (two distinct systems) and that the sewage discharges have been reduced since PRASA repaired a broken sanitary line.
6. On September 10, 2010, PRASA responded to the June 15, 2010, letter, submitting updated maps, again noting that the area is served by separate storm and sanitary sewer and that PRASA is actively removing identified cross-connections. PRASA also noted the observation of what appeared to be connections from nearby housing units to the storm sewer tributary to the DNER pumping facility.
7. On February 11, 2011, EPA and PRASA jointly inspected the Santurce ward. EPA noted several sanitary connections (e.g., Central High School) in an area where “EPA did not observe a separate storm sewer system (“MS4”) at this location.”
8. On April 12, 2011, EPA issued a request for information concerning ownership and maintenance responsibility for the Barriada Figueroa (Stop 18) PS and asking whether a portion of the sewer system tributary to the Stop 18 PS is owned or maintained by PRASA.
9. On July 22, 2011, PRASA responded that baffles had been installed at several points to re-direct sanitary sewage away from the storm system and toward the Puerto Nuevo

¹¹Jaime A. Géliga. June 15, 2010. Letter to José Capeles Re: Administrative Order CWA-02-2008-3155, Appended Summary of Findings/Comments, items (40) and (41).

Regional Wastewater Treatment Plant (RWWTP). PRASA also indicated that it has initiated efforts to negotiate a Sewer Investigation Mapping and Assessment in the area in cooperation with the Municipality of San Juan (MSJ).

10. On July 1, 2011, EPA issued a Fact Sheet and draft permit PR0021555. The Fact Sheet made no reference to CSOs. Attachment 2 to the draft permit listed five CSO outfall locations, including one identified as “002, Barriada Figueroa (near San Juan Natatorium)” and a provision that if additional CSO outfalls are identified the attachment shall be modified to include them.

11. On August 15, 2011, Petitioner timely commented on the draft NPDES permit, including the following comments concerning the Barriada Figueroa PS:
 - a. In the proposed permit, the Outfall 002 Barriada Figueroa location is indicated at the discharge location of the DNER pump station (near the San Juan Natatorium). The DNER Barriada Figueroa PS receives waters from numerous sources. PRASA does not have the authority to regulate all the flows received at the DNER Pump station.

 - b. Additionally, PRASA has identified one overflow weir located near the intersection of San Ramón and Del Carmen Streets in the sanitary sewer system. This is the only known location where PRASA sewer flow may cross into the

storm sewer system related to Barriada Figueroa. PRASA has the authority to operate and maintain the sanitary sewer at this location.

12. On September 28, 2011, EPA issued Permit PR0021555, accompanied by a response to each PRASA comment on the draft permit. Attachment 2 to the final permit lists seven CSO outfall locations, including 003 Barriada Figueroa (near the San Juan Natatorium) outfall location, retains the additional CSO outfalls provision, and adds a provision that, at EPA's discretion, outfalls may be removed from the permit after receipt of confirmation that they are no longer active.

BARRIADA FIGUEROA CSO OUTFALL LOCATION PETITION

The Barriada Figueroa outfall location listed in Permit PR0021555 is neither owned nor operated by PRASA. The Petitioner hereby requests this Board to grant review of this case and order EPA to remove 003 Barriada Figueroa (near the San Juan Natatorium) outfall location from the listing in Attachment 2 to Permit PR0021555.

BARRIADA FIGUEROA CSO OUTFALL LOCATION ARGUMENT

EPA's inclusion of outfall 003 Barriada Figueroa (near the San Juan Natatorium) in Permit PR0021555 is based on an erroneous assumption that PRASA has either ownership or maintenance responsibility for the system tributary to that outfall. The Pump Station that discharges to the outfall is referred as "the Puerto Rico Department of Natural and

Environmental Resources' Barriada Figueroa Pump Station located at Roosevelt Street" in item 21 of the EPA Inspection Report of June 25, 2007. That reference itself indicates that the pump station, the major contributor to the outfall, is owned and presumably operated by the DNER, not by PRASA.

The sewer feeding into the Barriada Figueroa Pump Station is similarly neither owned nor operated by PRASA. The EPA Inspection Report of June 25, 2007, refers to the "storm sewer catch basin that is connected to the pump station." PRASA concurs that the connections to the Barriada Figueroa PS are indeed storm sewer connections. By history and by charter, PRASA owns and operates only sewers intended to carry sanitary sewage, not storm sewers. Storm sewers are owned and operated by municipal, private, or state authorities.

Because the storm sewer is an historic drainage way, which ultimately discharges to a water of the state (Caño Martin Peña), discharges into the storm sewer can be treated as discharges to waters of the state. EPA's listing of 002 Mercantil Plaza Building in the final permit as a CSO at the beginning of the existing concrete open channel appears to recognize this fact.

EPA has noted discharges of sewage-like materials and other objectionable materials into the storm sewer feeding into the Barriada Figueroa PS at locations other than CSO 002. PRASA is cooperating with MSJ to investigate the ownership of the sources of these discharges. If the sources of these discharges are found to be PRASA sewers, or if other discharges from the PRASA system into the storm sewer feeding into the Barriada Figueroa Pump Station are found

at some future date, they will be subject to the provisions of paragraph 2 of Attachment 2, which states:

“If additional CSO outfalls are identified and confirmed during the effectiveness of this permit, this attachment shall be modified to include such outfalls and the permittee must comply with the conditions herein.”

PRASA will operate and maintain any pipes discharging from the PRASA system into waters of the state, or into storm sewers owned and operated by others, but which ultimately discharge to waters of the State, in a manner consistent with the provisions of the Permit. However, PRASA cannot be responsible for discharges from sewers that are neither owned nor maintained by PRASA. Therefore, PRASA cannot be responsible for the discharges from the Barriada Figueroa DNER PS.

BARRIADA FIGUEROA CSO OUTFALL LOCATION CONCLUSIONS

For the foregoing reasons, PRASA requests that the effluent limitations for toxicity be changed to match those that are both technically justifiable and superior to those proposed in the current Permit and that were acceptable to both EPA and EQB in the previous permit; i.e., a TUc of 102 and determination of chronic toxicity compliance for *Arbacia* based on the calculation of an IC₂₅ instead of a NOEC.

Additionally, the listing in the Permit of an outfall from a stormwater system for which PRASA has neither ownership nor maintenance authority (the Barriada Figueroa DNER PS) implies a transfer of responsibility that is beyond either EPA's or PRASA's authority. Petitioner requests this Board to grant review of this case and order EPA to remove 003 Barriada Figueroa (near the San Juan Natatorium) from the listing in Attachment 2 of Permit PR0021555.

Respectfully submitted,



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Date: November 16, 2011

List of Exhibits

Exhibit A – Comments submitted by Petitioner on Draft NPDES Permit

Exhibit B – Draft Water Quality Certificate

Exhibit C – Final Water Quality Certificate

Exhibit D – Fact Sheet Draft NPDES Permit

Exhibit E – Draft NPDES Permit

Exhibit F – Final NPDES Permit

Exhibit G – White Paper on *Arbacia punctulata* WET Testing

Exhibit H – White Paper Update on *Arbacia punctulata* WET Testing