EcoEléctrica, L.P.

United States Environmental Protection Agency
Region 2
Water Division
290 Broadway
New York, New York 10007

FACT SHEET

DRAFT NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM
EcoEléctrica, L.P.
PERMIT No. PR0025984

This Fact Sheet sets forth the principle facts and technical rationale that serve as the legal basis for the requirements of the accompanying draft permit. The draft permit has been prepared in accordance with Clean Water Act (CWA) section 402 and its implementing regulations at Title 40 of the *Code of Federal Regulations* (CFR), Parts 122 through 124, and the final Water Quality Certificate (WQC) issued by the Puerto Rico Department of Natural and Environmental Resources (DNER) pursuant to CWA section 401 requirements.

Pursuant to 40 CFR 124.53, the Commonwealth of Puerto Rico must either grant a certification pursuant to CWA section 401 or waive this certification before the U.S. Environmental Protection Agency (EPA) may issue a final permit. On December 12, 2022, DNER provided in the WQC that the allowed discharge will not cause violations to the applicable water quality standards at the receiving water body if the limitations and monitoring requirements in the WQC are met. In accordance with CWA section 401, EPA has incorporated the conditions of the final WQC into the draft permit. The WQC conditions are discussed in this Fact Sheet and are no less stringent than allowed by federal requirements. Additional requirements might apply to comply with other sections of the CWA. Review and appeals of limitations and conditions attributable to the WQC were made through the applicable procedures of the Commonwealth of Puerto Rico and not through EPA procedures.

DNER issued a draft WQC for the facility on September 30, 2020. In a letter dated November 6, 2020 from Carlos A. Reyes, EcoEléctrica President & General Manager, to Ángel R. Meléndez Aguillar, DNER Water Quality Manager, EcoEléctrica submitted comments regarding sludge special conditions, and the effluent limitations for arsenic, residual chlorine, sulfide, and no net additions. DNER issued a final WQC on May 11, 2021. EcoEléctrica appealed the final WQC in a Request for Adjudicative Procedure according to Section 5.4 of the Uniform Procedures Law, dated June 2, 2021, in which the facility objected to the effluent limitation for residual chlorine, as provided in the final WQC. After reviewing the hearing request and additional technical reports submitted by the facility, DNER issued a draft WQC for EcoEléctrica on October 6, 2020, and a final WQC on December 12, 2022.

PART I. BACKGROUND

A. Permittee and Facility Description

EcoEléctrica, L.P. (referred to throughout as the Permittee) has applied for renewal of its National Pollutant Discharge Elimination System (NPDES) permit. The Permittee is discharging pursuant to NPDES Permit No**.** PR0025984. The Permittee submitted Application Form 1 and Form 2C dated November 27, 2018 and applied for an NPDES permit to discharge treated wastewater from EcoEléctrica**,** Peñuelas, called the facility. The facility is classified as a major discharger by EPA in accordance with the EPA rating criteria.

The Permittee owns and operates a Liquefied Natural Gas (LNG) cogeneration power plant consisting of: a LNG marine unloading and storage terminal; a cogeneration plant with two combustion turbines; and, two heat recovery steam generators in line with a steam turbine, a desalination plant and an auxiliary diesel generator. Attachment A of this Fact Sheet provides a map of the area around the facility and a flow schematic of the facility.

The treatment system consists of the following: evaporation from cooling tower to remove heat from the wastewater, neutralization, oil/water separation, and addition of materials to produce potable water.

Certain solid wastes will be generated by the facility, including sewage from sewage holding tanks, waste oil from the oil/water separators, and chemical wastes from the neutralization tank. Any solid wastes generated by the

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Permittee must be hauled off-site by a licensed contractor and properly disposed. Disposal of these wastes to Outfall 001 is prohibited.

Summary of Permittee and Facility Information

Permittee	EcoEléctrica
Facility contact, title, phone	Eng. Oscar Cedeño, PE Environmental and Fuels Manager 787-836-2740 ext 292 or 787-487-6042
Permittee (mailing) address	641 Road 337 Firm Delivery Peñuelas, PR 00624
Facility (location) address	State Road 337, Km 3.7 Peñuelas, PR 00624
Type of facility	Electric Service – SIC Code 4911 Marine Cargo Handling – SIC Code 4491 Natural Gas Storage – SIC Code 4922 Water Supply – SIC Code 4941
Pretreatment program	N/A
Facility monthly average flow	8.97 MGD
Facility design flow	21.4 MGD
Facility classification	Major

B. Discharge Points and Receiving Water Information

Wastewater is discharged from Outfall 001 to the Guayanilla Bay (extension of the Caribbean Sea), a water of the United States, in the Southern Puerto Rico watershed.

The draft permit authorizes the discharge from the following discharge point(s):

Outfall	Effluent description	Outfall latitude	Outfall longitude	Receiving water name and classification
001	Cooling tower blowdown including: - Condenser cooling water blowdown - Heat recovery steam generator blowdown - Desalination plant brine blowdown - Rotary filters backwash - Remineralization filter backwash - Demineralizer wastewater - Laboratory drains - Wastewater from sample analysis - Waste from sample analysis equipment cleaning - Water from glassware cleaning - Tank and chemical container wash and cleaning wastewater - Chemical dike drains - Demineralization backwash - Streams from oils/water separators (that include treated streams from plant drains, equipment drain lines and remineralizer drains)	17.00°, 58.00', 13.00" N	-66.00°, 45.00', 59.00" W	Guayanilla Bay, Class SB

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As indicated in the Puerto Rico Water Quality Standards (PRWQS) Regulations, the designated uses for Class SB receiving waters include:

> Coastal waters and estuarine waters intended for use in primary and secondary contact recreation, and for propagation and maintenance of desirable species, including threatened or endangered species.

CWA section 303(d) requires the Commonwealth of Puerto Rico to develop a list of impaired waters, establish priority rankings for waters on the list, and develop TMDLs for those waters. The receiving water has been determined to have water quality impairments for one or more of the designated uses as determined by section 303(d) of the CWA. The Guayanilla Bay (PRSC38) is impaired for:

- Copper,
- Enterococcus,
- Oil and grease,
- Temperature,
- Mercury,
- Thallium, and
- Turbidity,

No total maximum daily loads (TMDLs) have been developed for the receiving water.

C. Mixing Zone/Dilution Allowance

A mixing zone or dilution allowance has not been authorized for the discharger.

D. Compliance Orders/Consent Decrees

The Permittee does not have any compliance orders or consent decrees that affect this permit action.

E. Summary of Basis for Effluent Limitations and Permit Conditions - General

The effluent limitations and permit conditions in the permit have been developed to ensure compliance with the following, as applicable:

- NPDES regulations (40 CFR Part 122)
- Puerto Rico Water Quality Standards (PRWQS), April 2019
- Steam Electric Power Generating Effluent Guidelines (40 CFR Part 423)

PART II. RATIONALE FOR EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

CWA section 301(b) and 40 CFR 122.44(d) require that permits include limitations more stringent than applicable technology-based requirements where necessary to achieve applicable water quality standards. In addition, 40 CFR 122.44(d)(1)(i) requires that permits include effluent limitations for all pollutants that are or may be discharged at levels that cause, have the reasonable potential to cause, or contribute to an exceedance of a water quality criterion, including a narrative criterion. The process for determining reasonable potential and calculating water quality-based effluent limits (WQBELs) is intended to protect the designated uses of the receiving water, and achieve applicable water quality criteria. Where reasonable potential has been established for a pollutant, but there is no numeric criterion for the pollutant, WQBELs must be established using (1) EPA criteria guidance under CWA section 304(a), supplemented where necessary by other relevant information; (2) an indicator parameter for the pollutant of concern; or (3) a calculated numeric water quality criterion, such as a proposed state criterion or policy interpreting the state's narrative criterion, supplemented with other relevant information, as provided in 40 CFR 122.44(d)(1)(vi).

The effluent limitations and permit conditions in the permit have been developed to ensure compliance with all federal and state regulations, including PRWQS. The basis for each limitation or condition is discussed below.

A. Effluent Limitations

The permit establishes Technology-based Effluent Limitations (TBELS) and Water Quality-based Effluent Limitations (WQBELs) for several pollutants and the basis for these limitations are discussed below.

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1. **Arsenic:** A monitoring and reporting requirement has been established in the permit pursuant to the WQC. Based on an analysis of the data, the discharge does not have the reasonable potential to cause or contribute to an excursion above the WQS. There is no effluent limitation for arsenic.

2. **5-day Biochemical Oxygen Demand (BOD_5)**: A monthly average effluent limitation of 30.0 mg/L for BOD_5 has been established in the permit pursuant to the WQC and Rule 1303.1(F) of the PRWQS.

3. **Free Available Chlorine:** A daily maximum effluent limitation of 0.5 mg/L and a monthly average effluent limitation of 0.2 mg/L have been established in the permit pursuant to 40 CFR Part 423.

   Neither free available nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator that the units in a particular location cannot operate at or below this level or chlorination.

4. **Residual Chlorine:** A daily maximum effluent limitation of 20 ug/L has been established in the permit pursuant to the WQC and Rule 1303.1(J)(1) of the PRWQS.

   Based on EPA's analysis of the DMR data, the discharge has the reasonable potential to cause or contribute to an excursion above the WQS. However, as noted in the interim WQC, dated October 6, 2022, the facility requested an alternate effluent limitation for residual chlorine. DNER reviewed the request and supporting data and determined that a daily maximum effluent limitation of 20 ug/L is sufficient to protect water quality.

   Additionally, 40 CFR Part 423 requires that neither free available nor total residual chlorine may be discharged from any unit for more than two hours in any one day and not more than one unit in any plant may discharge free available or total residual chlorine at any one time unless the utility can demonstrate to the Regional Administrator that the units in a particular location cannot operate at or below this level or chlorination.

5. **Chromium, total:** A daily maximum effluent limitation 0.2 mg/L and a monthly average effluent limitation of 0.2 mg/L has been established in the permit pursuant to 40 CFR Part 423. Based on an analysis of the data, the discharge does not have the reasonable potential to cause or contribute to an excursion above the WQS.

6. **Color**. A narrative effluent limitation for color has been established in the permit pursuant to the WQC and Rule 1303.2 of the PRWQS.

7. **Copper:** A daily maximum effluent limitation of 3.73 ug/L has been established in the permit pursuant to the WQC and Rule 1303.1(J)(1) of the PRWQS. 40 CFR Part 423 also requires a daily maximum TBEL of 0.1 mg/L and a monthly average of 0.1 mg/L for copper. Based on an analysis of the data, the discharge has the reasonable potential to cause or contribute to an excursion above the WQS and therefore, a limit must be established in the permit. As the daily maximum TBEL is less stringent than the daily maximum WQBEL so the daily maximum WQBEL has been established in the permit. The monthly average TBEL has also been established in the permit.

8. **Cyanide:** A daily maximum effluent limitation of 1.0 ug/L has been established in the permit pursuant to the WQC and Rule 1303.1(J)(1) of the PRWQS. Based on an analysis of the data, the discharge has the reasonable potential to cause or contribute to an excursion above the WQS and therefore, a limit must be established in the permit.

   The samples taken for the analysis of free cyanide shall be analyzed using the analytical method approved by EPA with the lowest detection level, in accordance with Rule 1306.8 of the PRWQS.

9. **Dissolved Oxygen:** A monthly average effluent limitation of not less than 5.0 mg/L has been established in the permit pursuant to the WQC and Rule 1303.2(B)(2)(a) of the PRWQS.

10. **Flow:** A daily maximum flow limitation of 81,007 m^3/day (21.4 MGD) has been established in the permit pursuant to the WQC.

    The flow measuring device for Outfall 001 shall be periodically calibrated and properly maintained. Calibration and maintenance records must be kept in compliance with Rule 1301 and Rule 1306 of the PRWQS and with the Environmental Public Policy Act of September 22, 2004, Act No. 416.

11. **Iron.** A daily maximum effluent limitation of 1.0 mg/L and a monthly average effluent limitation of 1.0 mg/L for iron has been established in the permit pursuant to 40 CFR Part 423.

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12. **Mercury.** A daily maximum effluent limit of 0.051 ug/L has been established in the permit pursuant to the WQC and Rule 1303.1(J)(1) of the PRWQS. Based on an analysis of the data, the discharge has the reasonable potential to cause or contribute to an excursion above the WQS and therefore, a limit must be established in the permit.

13. **Oil and Grease.** A daily maximum effluent limitation of 20.0 mg/L and a 30-day average effluent limitation of 15.0 mg/L has been established in the permit pursuant to 40 CFR Part 423. Based on an analysis of the data, the discharge does not have the reasonable potential to cause or contribute to an excursion above the WQS.

14. **pH:** A effluent limit of between 7.3 and 8.5 SU has been established in the permit pursuant to the WQC and Rule 1303.2(B)(2)(d) of the PRWQS. Based on an analysis of the data, the discharge has the reasonable potential to cause or contribute to an excursion above the WQS and therefore, a limit must be established in the permit.

15. **Polychlorinated biphenyl compounds (PCBs):** An effluent limitation prohibiting the discharge of PCBs has been established in the permit pursuant to 40 CFR Part 423.

16. **Suspended, Colloidal and Settleable Solids.** A narrative effluent limitation for color has been established in the permit pursuant to the WQC and Rule 1303.1 of the PRWQS.

17. **Sulfides:** Based on EPA R2's Reasonable Potential Tool analysis of the data, the discharge has the reasonable potential to cause or contribute to an excursion above the WQS. However, a closer look at the data shows that all results are non-detects or are below the method detection level. R2's RP Tool cannot properly analyze non-detects and will provide a false positive RP result. No effluent limit is required in the permit but monitoring is required.

18. **Surfactants.** Based on an analysis of the data, the discharge does not have the reasonable potential to cause or contribute to an excursion above the WQS and therefore, no limit is established in the permit.

19. **Temperature:** Rule 1301.1 of the PRWQS states that, except by natural phenomena, no heat which would cause the temperature of any site to exceed 86°F or 30°C, may be added to the waters of Puerto Rico. Based on an analysis of the data, the discharge has the reasonable potential to cause or contribute to an excursion above the WQS and therefore, a limit must be established in the permit.

    In a letter to PR DNER dated January 30, 2020, the Permittee requested an alternate limit for temperature for Outfall 001 based on a technical support document that included a Water Quality Monitoring Program Temperature Data Assessment, Thermal Plume Study, and Biological Monitoring Studies. As such, an effluent limit stating that the temperature shall not exceed 90°F (33.2°C) (or shall not exceed the intake water by more than 1.8°F (1°C)) has been established in the permit pursuant to the WQC.

20. **Temperature Difference between Intake Water and the Discharge:** An effluent limitation for the temperature difference between the intake water and the discharge has been established in the permit pursuant to the WQC. The Permittee is required to comply with the temperature effluent limitation OR the temperature difference effluent limitation.

21. **Total Suspended Solids:** A daily maximum effluent limitation of 100.0 mg/L and a 30-day average effluent limitation of 30.0 mg/L has been established in the permit pursuant to 40 CFR Part 423. Based on an analysis of the data, the discharge has the reasonable potential to cause or contribute to an excursion above the WQS and therefore, a limit must be established in the permit.

22. **Turbidity.** A daily maximum effluent limitation of 10 NTU has been established in the permit pursuant to the WQC and Rule1303.2 of the PRWQS. Based on an analysis of the data, the discharge does not have the reasonable potential to cause or contribute to an excursion above the WQS.

23. **Whole Effluent Toxicity.** CWA section 101(a) establishes a national policy of restoring and maintaining the chemical, physical, and biological integrity of the nation's waters. Specifically, CWA section 101(a)(3) and PRWQS Rule 1303(I) prohibit the discharge of toxic pollutants in toxic amounts. Federal regulations at 40 CFR 122.44(d) also require that where the permitting authority determines, through the analysis of site-specific WET data, that a discharge causes, shows a reasonable potential to cause, or contributes to an excursion above a water quality standard, including a narrative water quality criterion, the permitting authority must establish effluent limits for WET. To satisfy the requirements of the CWA, its implementing regulations, and the PRWQS, a reasonable potential analysis for WET was conducted for this discharge.

PRWQS do not provide a numeric criterion for toxicity. Therefore, consistent with the recommendations of section 2.3.3 of EPA's *Technical Support Document (TSD) for Water Quality-Based Toxics Control* (EPA-505-2-90-001), values of 0.3 acute toxic unit (TU_a) and 1.0 chronic toxic unit (TU_c) were used to interpret the narrative water quality criteria for WET established in PRWQS Rule 1303(I). No numeric effluent limitations for WET have been established in the permit. However, the facility may be required to conduct semi-annual acute toxicity tests for a period of 1 year, after which tests shall be performed annually. Based on the results, EPA or PR DNER can require additional toxicity tests, including chronic tests and toxicity/treatability studies, and may impose toxicity limitations.

In addition, the permit establishes a requirement for the Permittee to conduct accelerated testing a develop a Toxicity Reduction Evaluation (TRE) Workplan as Special Conditions. These requirements are necessary to ensure that the Permittee has a process for addressing effluent toxicity if toxicity is observed.

24. **Zinc:** A daily maximum effluent limitation of 81.0 ug/L has been established in the permit pursuant EPA's Antibacksliding regulations. Pursuant to the WQC and Rule 1303.1 of the PRWQS, a daily maximum effluent limitation of 85.62 ug/l is sufficient to meet water quality standards but the antibacksliding regulations require that the existing, more-stringent effluent limit of 8.10 ug/l be maintained in the permit. Based on an analysis of the data, the discharge does not have the reasonable potential to cause or contribute to an excursion above the WQS.

25. **126 Priority Pollutants.** An effluent limitation prohibiting detectable amounts of any of the 126 priority pollutants has been established in the permit pursuant to 40 CFR Part 423.

B. Effluent Limitations Summary Table

1. Outfall Number 001

Parameter	Units	Effluent limitations					
		Averaging period	Highest Reported Value ♠	Existing limits	Interim limits	Final limits	Basis
Arsenic (As)	ug/L	Daily maximum	9.0	M/R	--	M/R	WQBEL
BOD_5	mg/L	Monthly average	7.1	30.0	--	30.0	WQBEL
Free Available Chlorine	mg/L	Maximum Average	-- --	-- --	-- --	0.5 0.2	TBEL
Residual Chlorine	ug/L	Maximum	90	200	--	20	WQBEL
Chromium, total	mg/L	Daily maximum Monthly average	0.04	0.2 0.2	--	0.2 0.2	TBEL
Color	Pt-Co	Daily maximum	15	Shall not be altered except by natural causes	--	Shall not be altered except by natural causes	WQBEL
Copper	ug/L mg/L	Daily maximum Monthly average	3.1 --	3.73 --	-- --	3.73 1.0	WQBEL TBEL
Cyanide	ug/L	Daily maximum	5.0	1.0	--	1.0	WQBEL
Dissolved Oxygen	mg/L	Monthly average	4.6 (minimum reported value)	Shall not be less than 4.0	--	Shall not be less than 5.0	WQBEL
Flow	m^3/day MGD	Daily maximum	-- 19.62	81,007 21.4	-- --	81,007 21.4	WQBEL

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Parameter	Units	Effluent limitations					
		Averaging period	Highest Reported Value ♠	Existing limits	Interim limits	Final limits	Basis
Iron	mg/L	Daily maximum Monthly average	-- --	-- --	-- --	1.0 1.0	TBEL
Mercury (Hg)	ug/L	Daily maximum	0.05	0.051	--	0.051	
Oil and Grease	mg/L	Daily maximum Monthly average	12.0 --	20.0 15.0	-- --	20.0 15.0	TBEL
pH	SU	Monthly average	9.17 (max) 8.22 (min)	Within the range of 7.3 and 8.5	--	Will lie between 7.3 and 8.5, except when altered by natural phenomena	WQBEL
PCBs	mg/L	Daily maximum	0.0014	--	--	No discharge	TBEL
Sulfides	ug/L	Daily maximum	4.0	M/R	--	2.0	WQBEL
Surfactants (as MBAS)	ug/L	Daily maximum	42	M/R	--	--	WQBEL
Temperature	°F °C	Instantaneous	-- 33.1	90.0 32.2	--	90.0 32.2	WQBEL
Temperature Difference between Intake Water and the Discharge	°F °C	Instantaneous	-- --	-- --	-- --	1.8 1	WQBEL
Total Suspended Solids	mg/L	Daily maximum Monthly average	101.0 52.4	100.0 30.0	-- --	100.0 30.0	TBEL
Turbidity	NTU	Daily maximum	5.68	10.0	--	10.0	WQBEL
Whole Effluent Toxicity, Acute	TUa (minimum %LC50)	Daily maximum	>100%LC50 (minimum reported value)	--	--	--	WQBEL
Zinc	ug/L	Daily maximum	44.0	81.0	--	81.0	WQBEL
126 Priority Pollutants	--	--	--	No detectable amounts	--	No detectable amounts	TBEL

Notes, Footnotes and Abbreviations

♠ - Wastewater data from DMRs dated December 20, 2017 to December 20, 2022.
Dashes (--) indicate there are no effluent data, no limitations, or no monitoring requirements for this parameter.
M/R indicates that monitoring and reporting is required.

2. Outfall Number 001 Narrative Limitations

a. Color. The color receiving water shall not be altered except by natural causes, as specified by Rule 1303.2 of the PRWQS and the WQC. Based on an analysis of the data, the discharge does not have the reasonable potential to cause or contribute to an excursion above the WQS

b. Color, Odor, Taste and Turbidity. The waters of Puerto Rico shall be free from color, odor, taste and turbidity attributable to discharges in such a degree as to create a nuisance to the enjoyment of the existing or designated uses of the water body, as specified in Rule 1303.1 of the PRWQS and the WQC.

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c. Other Pathogenic Organisms. With the exception of coliforms and enterococci for which a water quality standard has been established in Rule 1302.2 of the PRWQS, the waters of Puerto Rico shall not contain other pathogenic organisms in concentrations which may cause disease, as specified in Rule 1303.1 of the PRWQS.

d. Oil and Grease. The waters of Puerto Rico shall be substantially free from floating petroleum oils and greases as well as petroleum derived oils and greases, as specified by Rule 1303.1 of the PRWQS.

e. Solids and Other Matter. The waters of Puerto Rico shall not contain floating debris, scum, or other floating materials attributable to discharges in amounts sufficient to be unsightly or deleterious to the existing or designated uses of the water body, as specified in Rule 1303.1 of the PRWQS and the WQC.

f. Substances in Toxic Concentrations and Synergistic Toxic Effects.

i. The waters of Puerto Rico shall not contain any substance, attributable to the discharge at such concentration which, either alone or as a result of synergistic effects with other substances, is toxic or produces undesirable physiological responses in humans, fish, or other fauna or flora, as specified in Rule 1303.1 of the PRWQS and the WQC.

ii. No toxic substances shall be discharged, in toxic concentrations, other than those allowed as specified in the NPDES permit. Those toxic substances included in the permit renewal application, but not regulated by the NPDES permit, shall not exceed the concentrations specified in the applicable regulatory limitations, as specified in 40 CFR Part 423 and Rule 1301, 1303, and 1306 of the PRWQS.

g. Suspended, Colloidal or Settleable Solids. Solids from wastewater sources shall not cause deposition in or be deleterious to the existing or designated uses of the waters, as specified in Rule 1303.1 of the PRWQS and the WQC.

h. Taste and Odor-Producing Substances. Tastes and odor-producing substances shall not be present in amounts that will interfere with primary contact recreation, or will render any undesirable taste or odor to edible aquatic life, as specified in Rule 1303.2 of the PRWQS and the WQC.

C. Monitoring Requirements

NPDES regulations at 40 CFR 122.48 require that all permits specify requirements for recording and reporting monitoring results. The Part III of the Permit establishes monitoring and reporting requirements to implement federal and state requirements. The following provides the rationale for the monitoring and reporting requirements for this facility.

1. **Influent Monitoring Requirements**

   Influent monitoring is required for temperature in order to determine the change in temperature between the intake water and the discharge.

2. **Effluent Monitoring Requirements**

   Effluent monitoring frequency and sample type have been established in accordance with the requirements of 40 CFR 122.44(i) and recommendations in EPA's TSD. Consistent with 40 CFR Part 136 monitoring data for toxic metals must be expressed as total recoverable metal. Effluent monitoring and analyses shall be conducted in accordance with EPA test procedures approved under 40 CFR Part 136, Guidelines for Establishing Test Procedures for the Analysis of Pollutants Under the Clean Water Act, as amended. For situation where there may be interference, refer to Solutions to Analytical Chemistry Problems with Clean Water Act Methods (EPA 821-R-07-002). A licensed chemist authorized to practice the profession in Puerto Rico shall certify all chemical analyses. All bacteriological tests shall be certified by a microbiologist or licensed medical technologist authorized to practice the profession in Puerto Rico.

D. Compliance with Federal Anti-Backsliding Requirements and Puerto Rico's Anti-Degradation Policy

Federal regulations at 40 CFR 131.12 require that state water quality standards include an anti-degradation policy consistent with the federal policy. The discharge is consistent with the anti-degradation provision of 40 CFR

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131.12, 72 Federal Register 238 (December 12, 2007, pages 70517-70526) and EQB's *Anti-Degradation Policy Implementation Procedure* in Attachment A of PRWQS. In addition, CWA sections 402(o)(2) and 303(d)(4) and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. Further, the Region 2 Antibacksliding Policy provides guidance regarding relaxation of effluent limitations based on water quality for Puerto Rico NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit with some exceptions where limitations may be relaxed. All effluent limitations in the permit are at least as stringent as the effluent limitations in the existing permit.

PART III. RATIONALE FOR STANDARD AND SPECIAL CONDITIONS

A. Standard Conditions

In accordance with 40 CFR 122.41, standard conditions that apply to all NPDES permits have been incorporated by reference in Part IV.A.1 of the permit and expressly in Attachment B of the permit. The Permittee must comply with all standard conditions and with those additional conditions that are applicable to specified categories of permits under 40 CFR 122.42 and specified in Part IV.A.2 of the Permit.

B. Special Conditions

In accordance with 40 CFR 122.42 and other regulations cited below, special conditions have been incorporated into the permit. This section addresses the justification for special studies, additional monitoring requirements, Best Management Practices, Compliance Schedules, and/or special provisions for POTWs as needed. The special conditions for this facility are as follows:

1. **Special Conditions from the Water Quality Certificate**
    a. No changes in the design or capacity of the treatment system will be permitted without the previous authorization of the DNER.
    b. Prior to the construction of any additional treatment system or the modification of the existing one, the permittee shall obtain the approval from the DNER of the engineering report, plans and specifications.
    c. The permittee shall install, maintain and operate all water pollution control equipment in such manner as to be in compliance with the Applicable Rules and Regulations.
    d. The sampling point for discharge 001 shall be labeled with an 18 inches per 12 inches (minimum dimensions) sign that reads as follows: "Punto de Muestreo para la Descarga 001"
    e. All water and wastewater treatment facilities, whether publicly or privately owned, must be operated by a person licensed by the Examination Board of Water and Wastewater Treatment Plants Operators of Puerto Rico.
    f. No later than one hundred eighty (180) days after the Effective Date of this Special Condition (EDSC), the permittee shall conduct semiannually acute toxicity tests for a period of one (1) year, after which the tests shall be performed annually, of its wastewater discharge through outfall serial number 001 in accordance with the following:
        i. The test species should be silverside (Menidia beryllina) and mysid (Mysidopsis bahia). The tests should be static renewal type.
        ii. The toxicity tests shall be conducted in accordance with the EPA publication, EPA 821-R-02-012 Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (Fifth Edition), October 2002, or the most recent edition of this publication if such edition is available.
        iii. The tests shall provide a measure of the acute toxicity as determined by the wastewater concentration, which cause 50 percent mortality of the test organisms over a 48-hour

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period. The test results shall be expressed in terms of Lethal Concentration (LC) and reported as 48-hour LC_{50}.

iv. A procedure report shall be submitted within ninety (90) days after the EDSC. The following information shall be included in the procedure report:

1. An identification of the organization responsible for conducting the tests and the species to be tested.
2. A detailed description of the methodology to be utilized in the conduct of the tests, including equipment, sample collection, dilution water and source of test organisms.
3. A schematic diagram, which depicts the effluent sampling location in relation to the wastewater treatment facility and the discharge monitoring point.

g. The results of the tests conducted shall be submitted to the Clean Water Regulatory Branch, Water Division of EPA's Region 2 and the DNER's Water Quality Area, within sixty (60) days of completion of each test. Based on the review of the test results, the Regional Administrator of EPA or the DNER can require additional toxicity tests, including chronic and toxicity/treatability studies, and may impose toxicity limitation.

2. **Whole Effluent Toxicity (from the WQC)**

EPA Note: This is the Special Condition as included by the Puerto Rico DNER in the WQC. These requirements for Whole Effluent Toxicity monitoring are included in Section IV(B)(2) of the permit.

This special condition shall not become effective until the DNER has determined the applicability to the respective facility and has notified the Permittee and EPA, in writing, of the necessity to comply with this condition.

No later than one hundred eighty (180) days after the Effective Date of this Special Condition (EDSC), the Permittee shall conduct semiannually acute toxicity tests for a period of one (1) year, after which tests shall be performed annually, of its wastewater discharge through Outfall 001 in accordance with the following:

a. The test species should be silverside (Menidia beryllina) and mysid (Mysidopsis bahia). The tests should be static renewal type.

b. The toxicity tests shall be conducted in accordance with the EPA publication, EPA 821-R-02-012 Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (Fifth Edition), October 2002, or the most recent edition of this publication, if such edition is available.

c. The tests shall provide a measure of the acute toxicity as determined by the wastewater concentration, which cause 50 percent mortality of the test organisms over a 48-hour period. The test results shall be expressed in terms of Lethal Concentration (LC) and reported as 48-hour LC_{50}.

d. A procedure report shall be submitted within ninety (90) days after the EDSC. The following information shall be included in the procedure report:

i. An identification of the organizations responsible for conducting the tests and the species tested.

ii. A detailed description of the methodology to be utilized in the conduct of the tests, including equipment, sample collection, dilution water and source test organisms.

iii. A schematic diagram, which depicts the effluent sampling location in relation to the wastewater treatment facility and the discharge monitoring point.

e. The results of the tests conducted shall be submitted to the Multimedia Permits and Compliance Branch of EPA's Region 2 Caribbean Environmental Protection Division and the DNER's Water Quality Area, within sixty (60) days of completion of each test. Based on the review of the test results,

the Regional Administrator of EPA of the DNER can require additional toxicity tests, including chronic tests and toxicity/treatability studies, and may impose toxicity limitations.

3. **Best Management Practices (BMP) Plan**

In accordance with 40 CFR 122.2 and 122.44(k), BMPs are schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution to waters of the United States. The Permittee is required to develop a BMP Plan in Part IV.B.3.a of the permit to control or abate the discharge of pollutants.

4. **Compliance Schedules**

A compliance schedule has not been authorized for any pollutant or parameter in the permit on the basis of 40 CFR 122.47.

5. **Solid Waste Requirements (from the WQC)**

a. Disposed in compliance with the applicable requirements established in the 40 CFR Part 257. A report must be submitted to DNER and EPA notifying the method or methods used to dispose the solid wastes generated in the facility in a term no later than thirty (30) days after such solids are generated. Also, a copy of the approval or permit applicable to the disposal method used must be submitted, if any.
b. Transported adequately in such way that access is not gained to any water body or soil. In the event of a spill of solid wastes on land or into a water body, the permittee must notify the Point Sources Permits Division of DNER's Water Quality Area in writing within a term no longer than twenty-four (24) hours after the spill to the following electronic address: bypass@drna.pr.gov. This notification shall include the following information: spilled material, spilled volume, and measures taken to prevent the spilled material to gain access to any water body. This special condition does not relieve the Permittee from its responsibility to obtain the corresponding permits from DNER's Land Pollution Control Area and other state and federal agencies, if any.
c. A log book must be kept for the material removed from the treatment system, such as sludge, screenings and grit, detailing the following items:

(i) description of removed material, date of removal, and source of material;
(ii) approximate volume and weight of material;
(iii) method by which material was removed and transported;
(iv) final disposal and location of material;
(v) name, title and affiliation of person that performs the service;

A copy of the Non-Hazardous Solid Wastes Collection and Transportation Service Permit issued by the authorized official from DNER must be attached to the log book. The material removal log book must remain on-site and be available to DNER and EPA at all times.

6. **Clean Water Act Section 316(b)**

It is EPA's Best Professional Judgement (BPJ) that the Permittee has demonstrated that entrainment and impingement impacts at the facility are minimal. The existing location, design, construction, and cooling water intake structure reflect the best available technology for minimizing adverse impacts, and as such are in compliance with CWA Section 316(b).

The Cooling Water Intake Structure includes a passive filtration system consisting of 2 mm (0.079") slot opening screens, with 53% open area. There is an air backwash system for remote cleaning of the screens. The design intake velocity of the cooling water intake structure is 0.5 feet per second. The facility also utilizes a closed cycle cooling system, which keeps the intake flow below the permit limit of 21.4 MGD.

EPA Region 2 has made a final determination that the best technology available for minimizing adverse environmental impact due to impingement or entrainment at the cooling water intake structure is the continued operation of the existing screen technology, closed cycle cooling system, and design intake flow described above. These technologies comply with the EPA 2014 Final Rulemaking for Cooling Water Intake Structures at Existing Electric Generating Plants and Factories.

EcoEléctrica, L.P.

PART IV. COMPLIANCE WITH APPLICABLE PROVISIONS OF OTHER FEDERAL LAWS OR EXECUTIVE ORDERS

A. Coastal Zone Management Act

Under 40 CFR 122.49(d), and in accordance with the Coastal Zone Management Act of 1972, as amended, 16 *United States Code* (U.S.C.) 1451 *et seq*. section 307(c) of the act and its implementing regulations (15 CFR Part 930), EPA may not issue an NPDES permit that affects land or water use in the coastal zone until the Permittee certifies that the proposed activity complies with the Coastal Zone Management Program in Puerto Rico, and that the discharge is certified by the Commonwealth of Puerto Rico to be consistent with the Commonwealth's Coastal Zone Management Program. The Puerto Rico Planning Board issued a determination, dated December 16, 1996, that the discharge is consistent with the Puerto Rico Coastal Management Program. As this activity has been permitted in the a past, a reopener clause has been established that allows the permit to be modified or revoked based on the consistency determination requested by the Permittee as part of this renewal process. The permittee submitted the request for consistency determination in a letter to the Puerto Rico Planning Board dated June 5, 2023.

B. Endangered Species Act

Under 40 CFR 122.49(c), EPA is required pursuant to section 7 of the Endangered Species Act (ESA), 16 U.S.C. 1531 *et seq*. and its implementing regulations (50 CFR Part 402) to ensure, in consultation with the National Marine Fisheries Service (NMFS) and U.S. Fish and Wildlife Service (USFWS) that the discharge authorized by the permit is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat.

The ESA requires the Regional Administrator to ensure, in consultation with the Secretary of the Interior or Commerce, that any action authorized by EPA is not likely to jeopardize the continued existence of any endangered or threatened species or adversely affect its critical habitat.

EPA initiated consultation regarding this permit action on June 1, 2023.

In a May 2000 memo to the Regions, EPA Headquarters provided guidance to the Regions in making a determination as to whether a final permit may be issued while waiting for consultation to be concluded. As part of this permit action, if consultation has not been completed by final permit issuance and EPA has concluded that permit issuance is consistent with section 7 prior to the conclusion of consultation, EPA will re-issue the final permit before consultation is concluded and will document this decision in the Administrative Record. At the time consultation is completed, EPA may decide that changes to the permit are warranted after permit issuance based on the results of the consultation. Therefore, a reopener provision to this effect has been included in the Permit Part IV.A.1.b**.**

C. Environmental Justice

Environmental Justice (EJ) is the right to a safe, healthy, productive, and sustainable environment for all, where “environment” is considered in its totality to include the ecological, physical, social, political, aesthetic and economic environments. The NPDES permitting process provides opportunities to address EJ concerns through appropriate avenues for public participation, seeking out and facilitating involvement of those potentially affected, and, when relevant, including public notices in more than one language where appropriate. EPA has extended the public participation timeframe from the traditional 30 days to 60 days, and has created a one-page plain language summary of this permitting action, which includes clear instructions on how the public may participate in the permitting process.

D. Climate Change

EPA has considered climate change when developing the conditions of the permit. This draft permit requires new conditions related to the Permittee’s Preventative Maintenance Plan. Specifically, the Permittee shall implement structural improvements, enhanced/resilient pollution prevention measures, and/or other mitigation measures to minimize impacts from discharges as a result of major storm events, such as hurricanes, storm surge, extreme/heavy precipitation, and flood events.

E. National Historic Preservation Act

Under 40 CFR 122.49(b), EPA is required to assess the impact of the discharge authorized by the permit on any properties listed or eligible for listing in the National Register of Historic Places (NRHP) and mitigate any adverse effects when necessary in accordance with the National Historic Preservation Act, 16 U.S.C. 470 et seq. EPA’s

analysis indicates that no soil disturbing or construction-related activities are being authorized by approval of this permit; accordingly, adverse effects to resources on or eligible for inclusion in the NHRP are not anticipated as part of this permitted action.

F. Magnuson-Stevens Fishery Conservation and Management Act

Under 40 CFR 122.49, EPA is required to ensure that the discharge authorized by the permit will not adversely affect Essential Fish Habitat (EFH) as specified in section 305(b)(2) of the Magnuson-Stevens Fishery Conservation and Management Act (MSFCMA), 16 U.S.C. 1801 *et seq*. EPA initiated consultation with the National Marine Fisheries Service regarding this permit action on June 1, 2023. A reopener provision has been included in the draft permit which allows EPA to modify or revoke the permit based on new information.

G. Clean Water Act, Section 403 Ocean Discharge Criteria

CWA Section 403 requires EPA to consider guidelines for determining potential degradation of the marine environment when issuing NPDES permits. These Ocean Discharge Criteria (40 CFR 125, Subpart M) are intended to "prevent unreasonable degradation of the marine environment and to authorize imposition of effluent limitations, including a prohibition on discharge, if necessary, to ensure this goal". Based on the available information, EPA has determined that the discharge will not cause unreasonable degradation of the marine environment. A reopener provision has been included in the permit Part IV.B.5 that provides EPA the right to modify or revoke the permit based on any new data.

H. Clean Water Act, Section 316(b) Cooling Water Intake Structures

CWA Section 316(b) requires EPA to issue regulations on the design and operation of intake structures, in order to minimize adverse impacts. It is EPA's Best Professional Judgement (BPJ) that the Permittee has demonstrated that entrainment and impingement impacts at the facility are minimal. The existing location, design, construction and cooling water intake structure reflect the best available technology for minimizing adverse impact, and as such are in compliance with CWA Section 316(b).

Best Technology Available for this facility will be the continued operation of the closed-cycle cooling towers, continued operation of the wedgewire screen at the cooling water intake structure, and continued minimization of intake velocity.

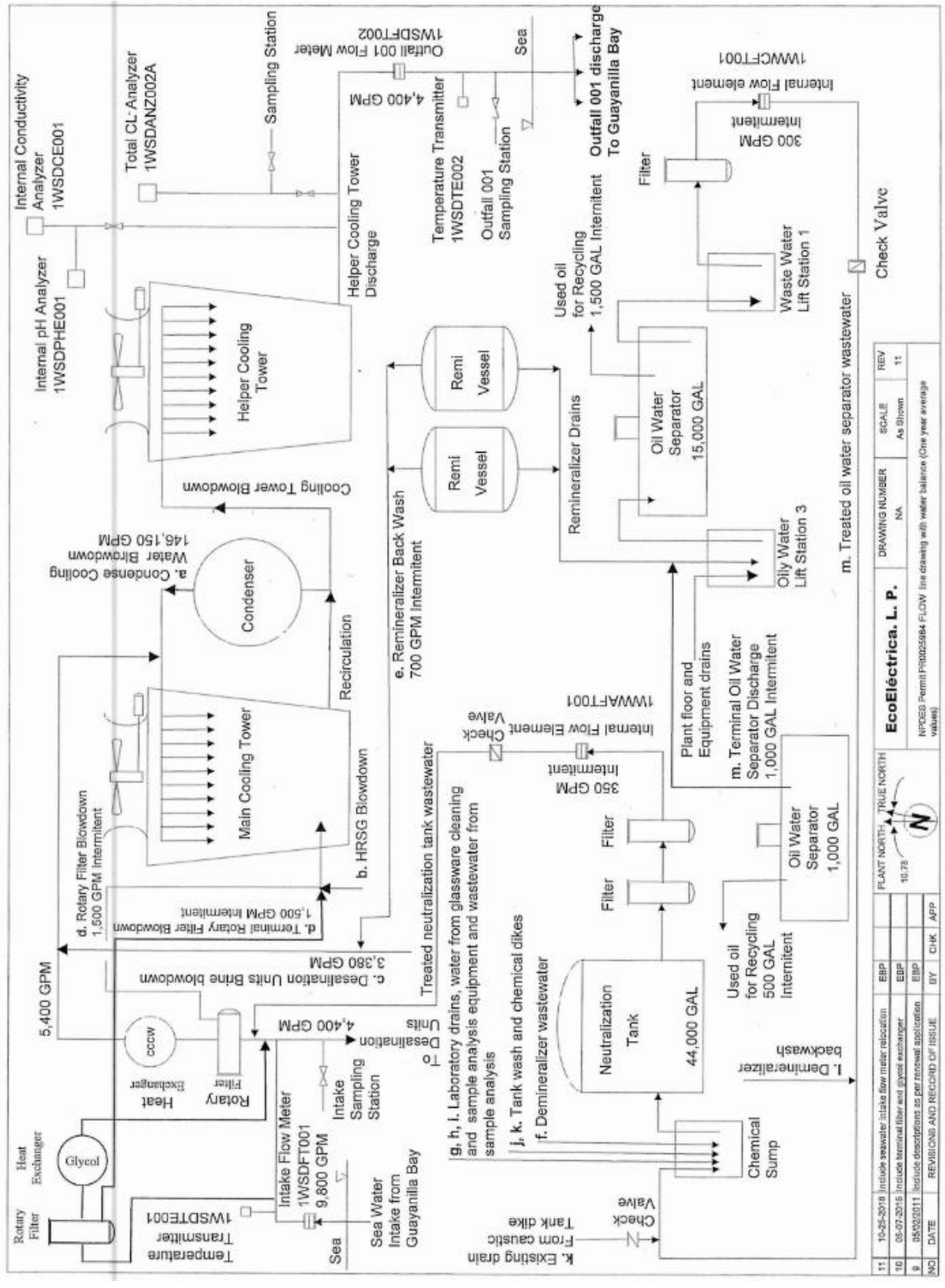
PART V. PUBLIC PARTICIPATION

The procedures for reaching a final decision on the draft permit are set forth in 40 CFR Part 124 and are described in the public notice for the draft permit, which is published on EPA's website at https://www.epa.gov/npdes-permits/puerto-rico-npdes-permits**.** Included in the public notice are requirements for the submission of comments by a specified date, procedures for requesting a hearing and the nature of the hearing, and other procedures for participation in the final agency decision. EPA will consider and respond in writing to all significant comments received during the public comment period in reaching a final decision on the draft permit. Requests for information or questions regarding the draft permit should be directed to

Ms. Sieglinde Pylypchuk
EPA Region 2, Water Division
212-637-4133
pylypchuk.sieglinde@epa.gov

ATTACHMENT A — FACILITY FLOW SCHEMATIC

The flow schematic is attached as provided by the discharger in the application.

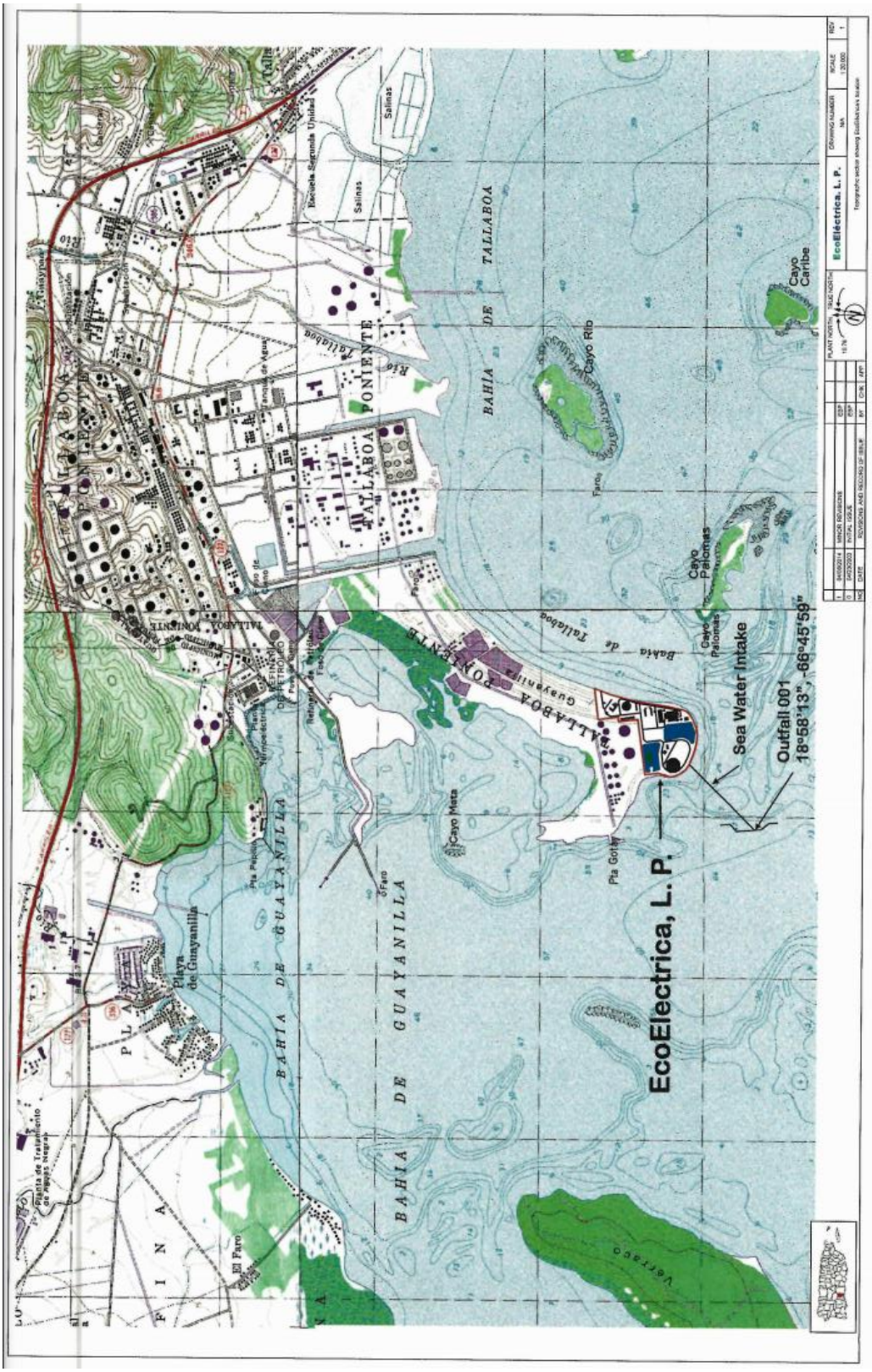


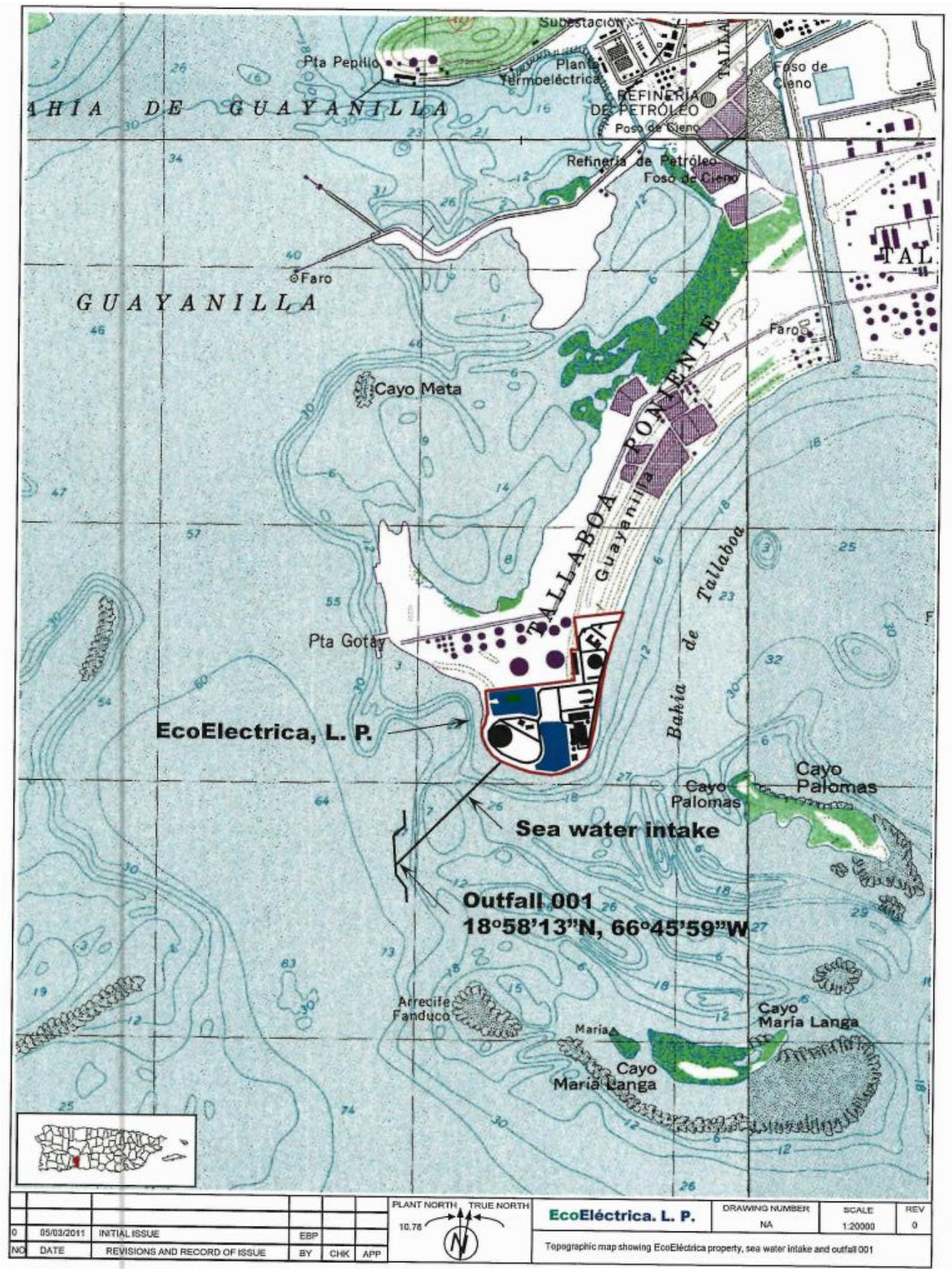
ATTACHMENT B — FACILITY LOCATION AERIAL MAP

The aerial location map is attached as provided by the discharger in the application.

ATTACHMENT C — FACILITY LOCATION TOPOGRAPHIC MAPS

The topographic location maps are attached as provided by the discharger in the application.




Subestación
Pta Pepillo
Planta Termoeléctrica
REFINERIA DE PETRÓLEO
Foso de Cieno
Refinería de Petróleo
Foso de Cieno
BAHIA DE GUAYANILLA
Faro
GUAYANILLA
Cayo Meta
TALLABOA
Guayanilla
PONIENTE
Pta Gotay
EcoElectrica, L. P.
Bahía de Tallaboa
Cayo Palomas
Sea water intake
Outfall 001
18°58'13"N, 66°45'59"W
Arrecife Fanduco
Cayo María Langa
PLANT NORTH
TRUE NORTH
10.78
EcoEléctrica. L. P.
DRAWING NUMBER
NA
SCALE
1:20000
REV
0
05/03/2011
INITIAL ISSUE
EBP
DATE
REVISIONS AND RECORD OF ISSUE
BY
CHK
APP
Topographic map showing EcoEléctrica property, sea water intake and outfall 001

ATTACHMENT D — EPA R2 REASONABLE POTENTIAL TOOL ANALYSIS

The following pages show the procedure and results of the reasonable potential analysis for the parameters listed below:

- Arsenic
- Chlorine, Total Residual
- Chromium
- Color
- Copper
- Cyanide
- Mercury
- Oil & Grease
- pH
- Total Suspended Solids
- Sulfide
- Surfactants
- Temperature
- Turbidity
- Zinc

How to read EPA R2 Reasonable Potential Tool Analysis results:

Terms and Acronyms:

Number of samples: number of samples used to conduct the analysis
Min: value of the lowest sampling result
Max: value of the largest sampling result
WQS – SB: Water Quality Standard for SB waters
WQS – SD: Water Quality Standard for SD waters
RWC: projected Receiving Water Concentration

Evaluating Reasonable Potential:

If the projected RWC is greater than the WQS for the appropriate water body classification, the analysis indicates that the discharge will cause, have the reasonable potential to cause, or contribute to an exceedance of WQS.

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Arsenic, total [as As]

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 4

Min: 0.006 ug/L

Mean: 3.5 ug/L

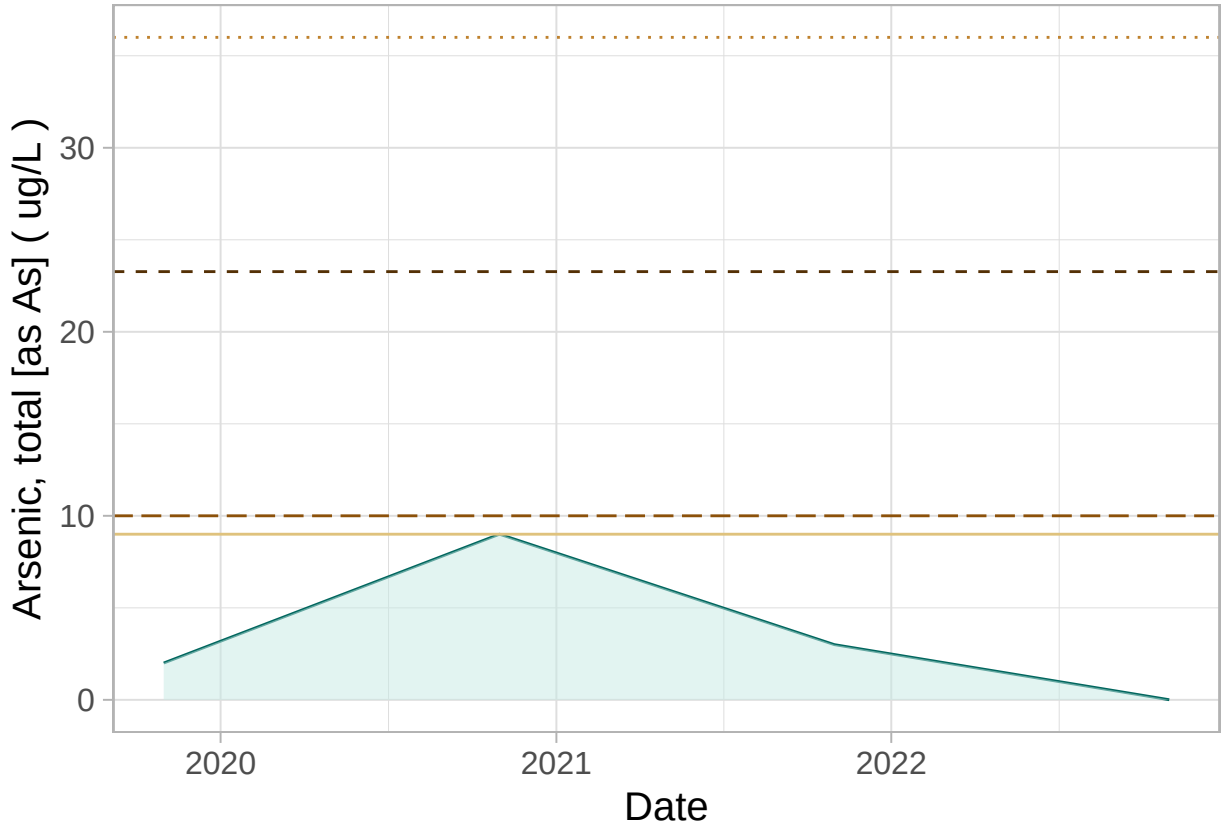
Max: 9 ug/L

WQS - SB: 36 ug/L

WQS - SD: 10 ug/L

RWC: 23.27 ug/L

TIME SERIES



—Max: 9 ug/L

...WQS - SB: 36 ug/L

- - WQS - SD: 10 ug/L

–RWC: 23.27 ug/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 4 \\
max &= 9 \\
DR &= 1 \\
CV &= 0.6 \\
Z_{95} &= 1.645 \\
Z_x &= -0.068
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.6^2)^{0.5} - 0.5\ln(1+0.6^2))}{exp(-0.068\ln(1+0.6^2)^{0.5} - 0.5\ln(1+0.6^2))} \\
&= 2.59
\end{aligned}$$

$$\begin{aligned}
RWC &= 9 * 2.59/1 \\
&= 23.27
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Arsenic, total [as As]	2019-10-31	2.000	ug/L
PR0025984	001	Arsenic, total [as As]	2020-10-31	9.000	ug/L
PR0025984	001	Arsenic, total [as As]	2021-10-31	3.000	ug/L
PR0025984	001	Arsenic, total [as As]	2022-10-31	0.006	ug/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Chlorine, total residual

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 59

Min: 0.01 mg/L

Mean: 0.02 mg/L

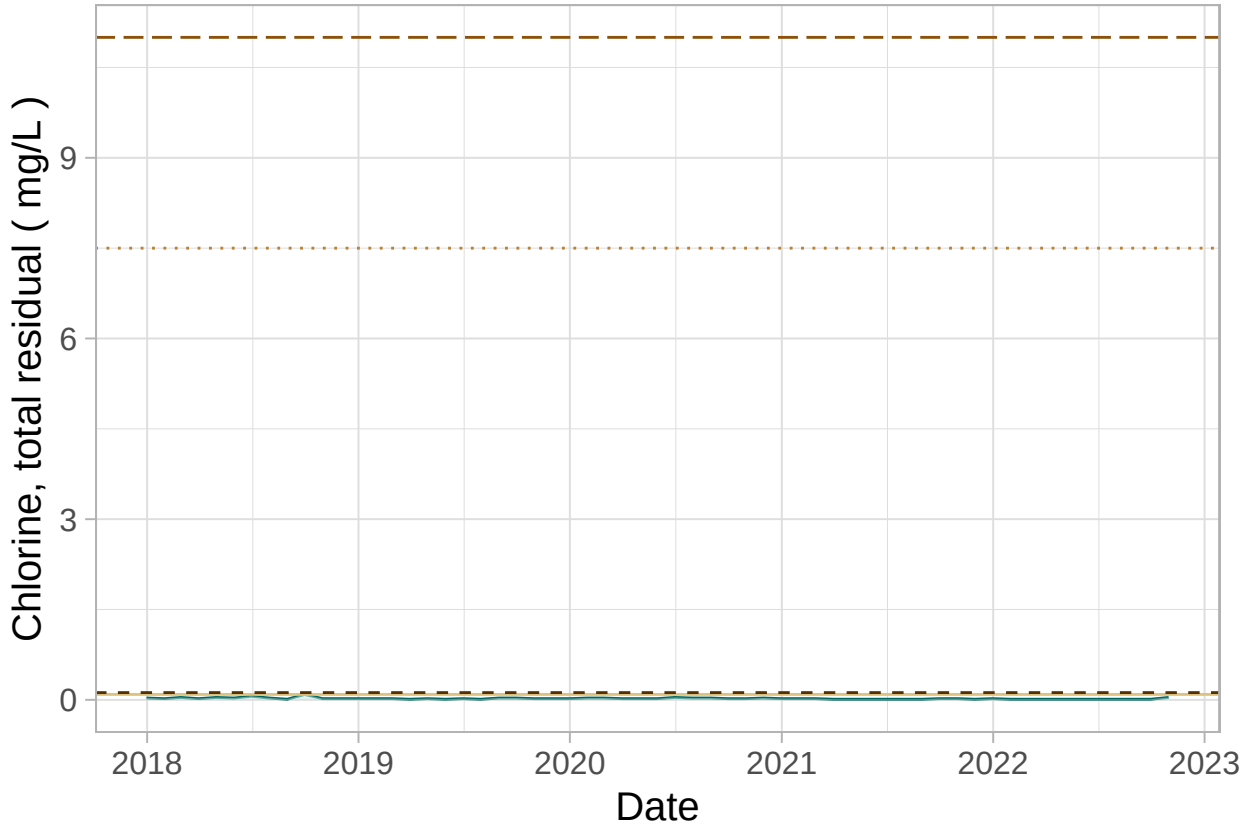
Max: 0.09 mg/L

WQS - SB: 7.5 mg/L

WQS - SD: 11 mg/L

RWC: 0.12 mg/L

TIME SERIES



—Max: 0.09 mg/L

...WQS - SB: 7.5 mg/L

- - WQS - SD: 11 mg/L

–RWC: 0.12 mg/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 59 \\
max &= 0.09 \\
DR &= 1 \\
CV &= 0.64 \\
Z_{95} &= 1.645 \\
Z_x &= 1.084
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.64^2)^{0.5} - 0.5\ln(1+0.64^2))}{exp(1.084\ln(1+0.64^2)^{0.5} - 0.5\ln(1+0.64^2))} \\
&= 1.39
\end{aligned}$$

$$\begin{aligned}
RWC &= 0.09 * 1.39/1 \\
&= 0.12
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Chlorine, total residual	2017-12-31	0.03	mg/L
PR0025984	001	Chlorine, total residual	2018-01-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2018-02-28	0.04	mg/L
PR0025984	001	Chlorine, total residual	2018-03-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2018-04-30	0.04	mg/L
PR0025984	001	Chlorine, total residual	2018-05-31	0.03	mg/L
PR0025984	001	Chlorine, total residual	2018-06-30	0.06	mg/L
PR0025984	001	Chlorine, total residual	2018-07-31	0.03	mg/L
PR0025984	001	Chlorine, total residual	2018-08-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2018-09-30	0.09	mg/L
PR0025984	001	Chlorine, total residual	2018-10-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2018-11-30	0.02	mg/L
PR0025984	001	Chlorine, total residual	2018-12-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2019-01-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2019-02-28	0.02	mg/L
PR0025984	001	Chlorine, total residual	2019-03-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2019-04-30	0.02	mg/L
PR0025984	001	Chlorine, total residual	2019-05-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2019-06-30	0.02	mg/L
PR0025984	001	Chlorine, total residual	2019-07-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2019-08-31	0.03	mg/L
PR0025984	001	Chlorine, total residual	2019-09-30	0.03	mg/L
PR0025984	001	Chlorine, total residual	2019-10-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2019-11-30	0.02	mg/L
PR0025984	001	Chlorine, total residual	2019-12-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2020-01-31	0.03	mg/L
PR0025984	001	Chlorine, total residual	2020-02-29	0.03	mg/L
PR0025984	001	Chlorine, total residual	2020-03-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2020-04-30	0.02	mg/L
PR0025984	001	Chlorine, total residual	2020-05-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2020-06-30	0.04	mg/L
PR0025984	001	Chlorine, total residual	2020-07-31	0.03	mg/L
PR0025984	001	Chlorine, total residual	2020-08-31	0.03	mg/L
PR0025984	001	Chlorine, total residual	2020-09-30	0.02	mg/L
PR0025984	001	Chlorine, total residual	2020-10-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2020-11-30	0.03	mg/L
PR0025984	001	Chlorine, total residual	2020-12-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2021-01-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2021-02-28	0.02	mg/L
PR0025984	001	Chlorine, total residual	2021-03-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2021-04-30	0.01	mg/L
PR0025984	001	Chlorine, total residual	2021-05-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2021-06-30	0.01	mg/L
PR0025984	001	Chlorine, total residual	2021-07-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2021-08-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2021-09-30	0.02	mg/L
PR0025984	001	Chlorine, total residual	2021-10-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2021-11-30	0.01	mg/L
PR0025984	001	Chlorine, total residual	2021-12-31	0.02	mg/L
PR0025984	001	Chlorine, total residual	2022-01-31	0.01	mg/L

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Chlorine, total residual	2022-02-28	0.01	mg/L
PR0025984	001	Chlorine, total residual	2022-03-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2022-04-30	0.01	mg/L
PR0025984	001	Chlorine, total residual	2022-05-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2022-06-30	0.01	mg/L
PR0025984	001	Chlorine, total residual	2022-07-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2022-08-31	0.01	mg/L
PR0025984	001	Chlorine, total residual	2022-09-30	0.01	mg/L
PR0025984	001	Chlorine, total residual	2022-10-31	0.04	mg/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Chromium, total [as Cr]

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 59

Min: 0.01 mg/L

Mean: 0.02 mg/L

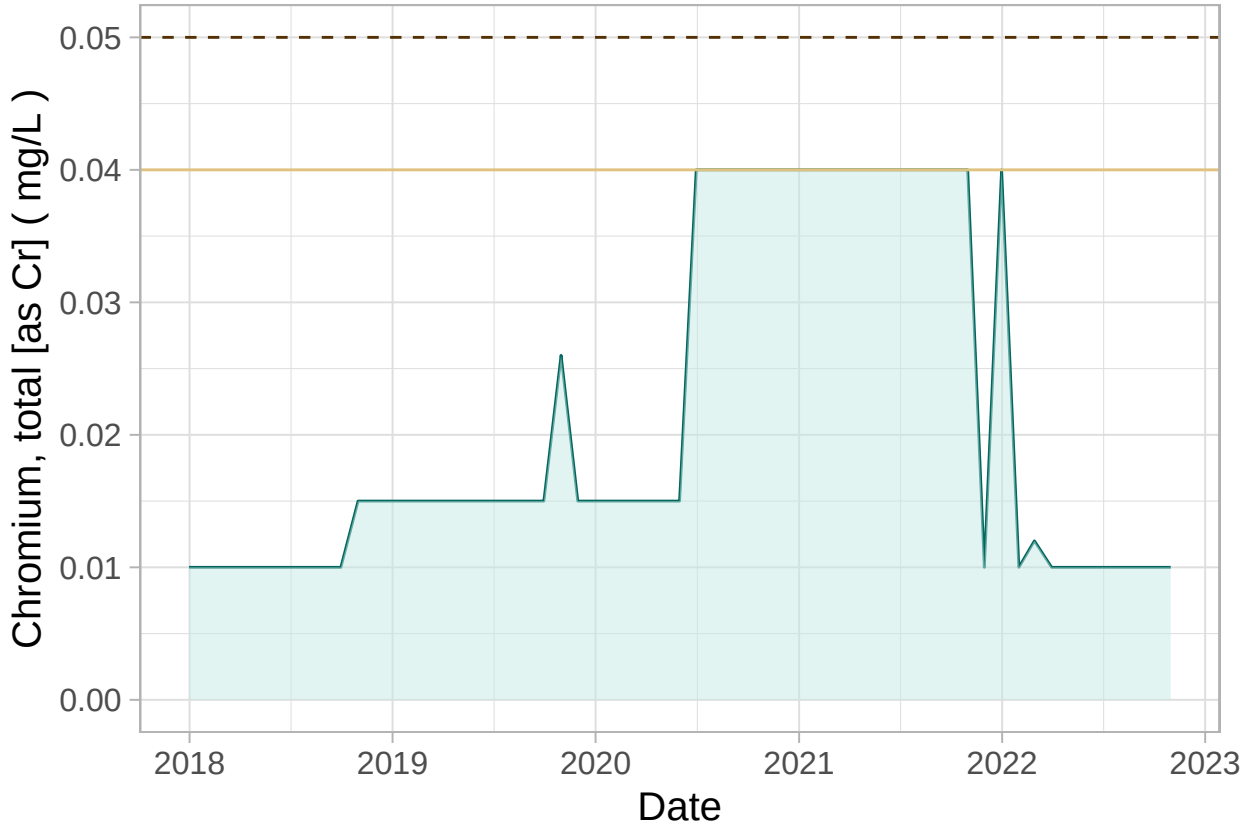
Max: 0.04 mg/L

WQS - SB: NA mg/L

WQS - SD: NA mg/L

RWC: 0.05 mg/L

TIME SERIES



—Max: 0.04 mg/L

...WQS - SB: NA mg/L

- - WQS - SD: NA mg/L

–RWC: 0.05 mg/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 59 \\
max &= 0.04 \\
DR &= 1 \\
CV &= 0.61 \\
Z_{95} &= 1.645 \\
Z_x &= 1.084
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.61^2)^{0.5} - 0.5\ln(1+0.61^2))}{exp(1.084\ln(1+0.61^2)^{0.5} - 0.5\ln(1+0.61^2))} \\
&= 1.37
\end{aligned}$$

$$\begin{aligned}
RWC &= 0.04 * 1.37/1 \\
&= 0.05
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Chromium, total [as Cr]	2017-12-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-01-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-02-28	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-03-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-04-30	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-05-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-06-30	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-07-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-08-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-09-30	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-10-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-11-30	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2018-12-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-01-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-02-28	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-03-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-04-30	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-05-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-06-30	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-07-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-08-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-09-30	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-10-31	0.026	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-11-30	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2019-12-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-01-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-02-29	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-03-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-04-30	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-05-31	0.015	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-06-30	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-07-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-08-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-09-30	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-10-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-11-30	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2020-12-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-01-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-02-28	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-03-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-04-30	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-05-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-06-30	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-07-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-08-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-09-30	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-10-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-11-30	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2021-12-31	0.040	mg/L
PR0025984	001	Chromium, total [as Cr]	2022-01-31	0.010	mg/L

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Chromium, total [as Cr]	2022-02-28	0.012	mg/L
PR0025984	001	Chromium, total [as Cr]	2022-03-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2022-04-30	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2022-05-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2022-06-30	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2022-07-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2022-08-31	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2022-09-30	0.010	mg/L
PR0025984	001	Chromium, total [as Cr]	2022-10-31	0.010	mg/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Color [PT-CO units]

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 59

Min: 5 col unit (pc)

Mean: 5.34 col unit (pc)

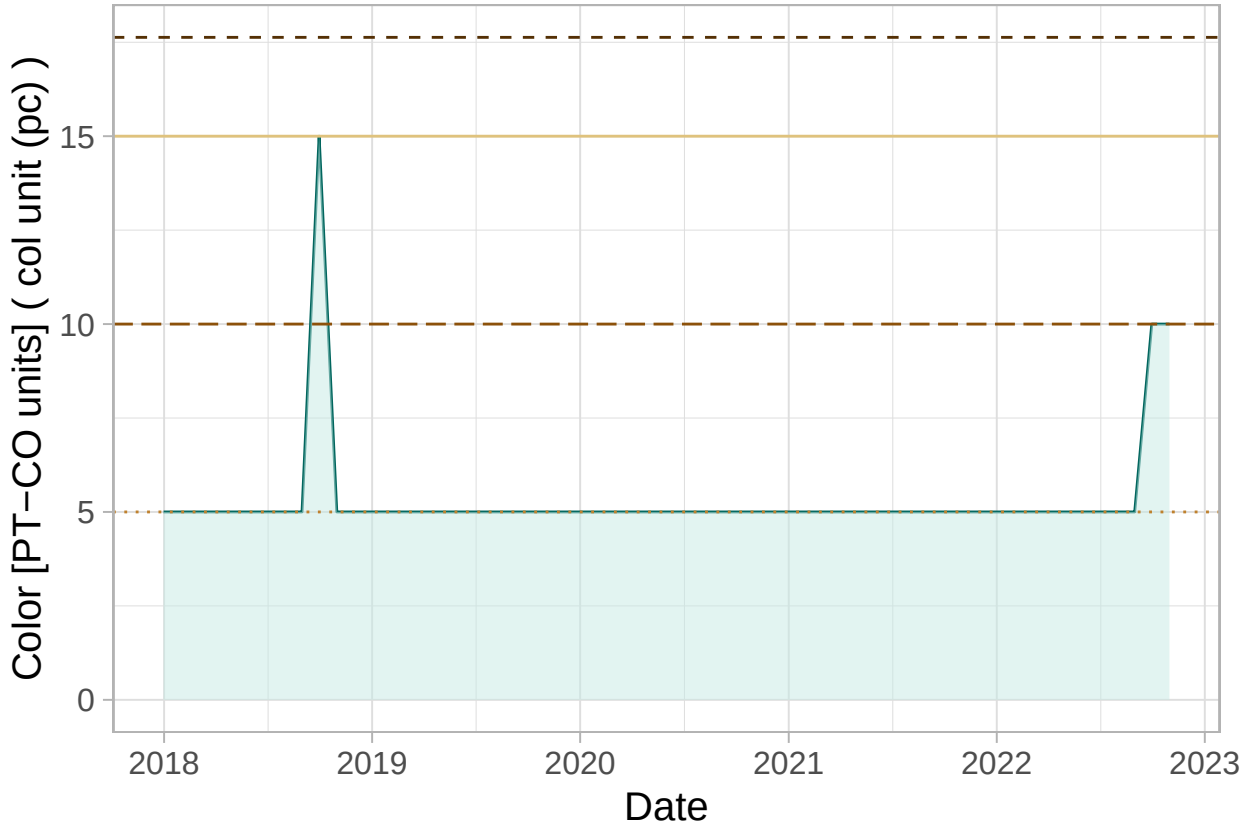
Max: 15 col unit (pc)

WQS - SB: 5 col unit (pc)

WQS - SD: 10 col unit (pc)

RWC: 17.63 col unit (pc)

TIME SERIES



—Max: 15 col unit (pc)

...WQS - SB: 5 col unit (pc)

- - WQS - SD: 10 col unit (pc)

–RWC: 17.63 col unit (pc)

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 59 \\
max &= 15 \\
DR &= 1 \\
CV &= 0.29 \\
Z_{95} &= 1.645 \\
Z_x &= 1.084
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.29^2)^{0.5} - 0.5\ln(1+0.29^2))}{exp(1.084\ln(1+0.29^2)^{0.5} - 0.5\ln(1+0.29^2))} \\
&= 1.18
\end{aligned}$$

$$\begin{aligned}
RWC &= 15 * 1.18/1 \\
&= 17.63
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Color [PT-CO units]	2017-12-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-01-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-02-28	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-03-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-04-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-05-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-06-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-07-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-08-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-09-30	15	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-10-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-11-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2018-12-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-01-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-02-28	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-03-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-04-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-05-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-06-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-07-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-08-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-09-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-10-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-11-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2019-12-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-01-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-02-29	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-03-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-04-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-05-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-06-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-07-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-08-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-09-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-10-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-11-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2020-12-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-01-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-02-28	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-03-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-04-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-05-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-06-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-07-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-08-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-09-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-10-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-11-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2021-12-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2022-01-31	5	col unit (pc)

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Color [PT-CO units]	2022-02-28	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2022-03-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2022-04-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2022-05-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2022-06-30	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2022-07-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2022-08-31	5	col unit (pc)
PR0025984	001	Color [PT-CO units]	2022-09-30	10	col unit (pc)
PR0025984	001	Color [PT-CO units]	2022-10-31	10	col unit (pc)

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Copper, total [as Cu]

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 18

Min: 1 ug/L

Mean: 2.09 ug/L

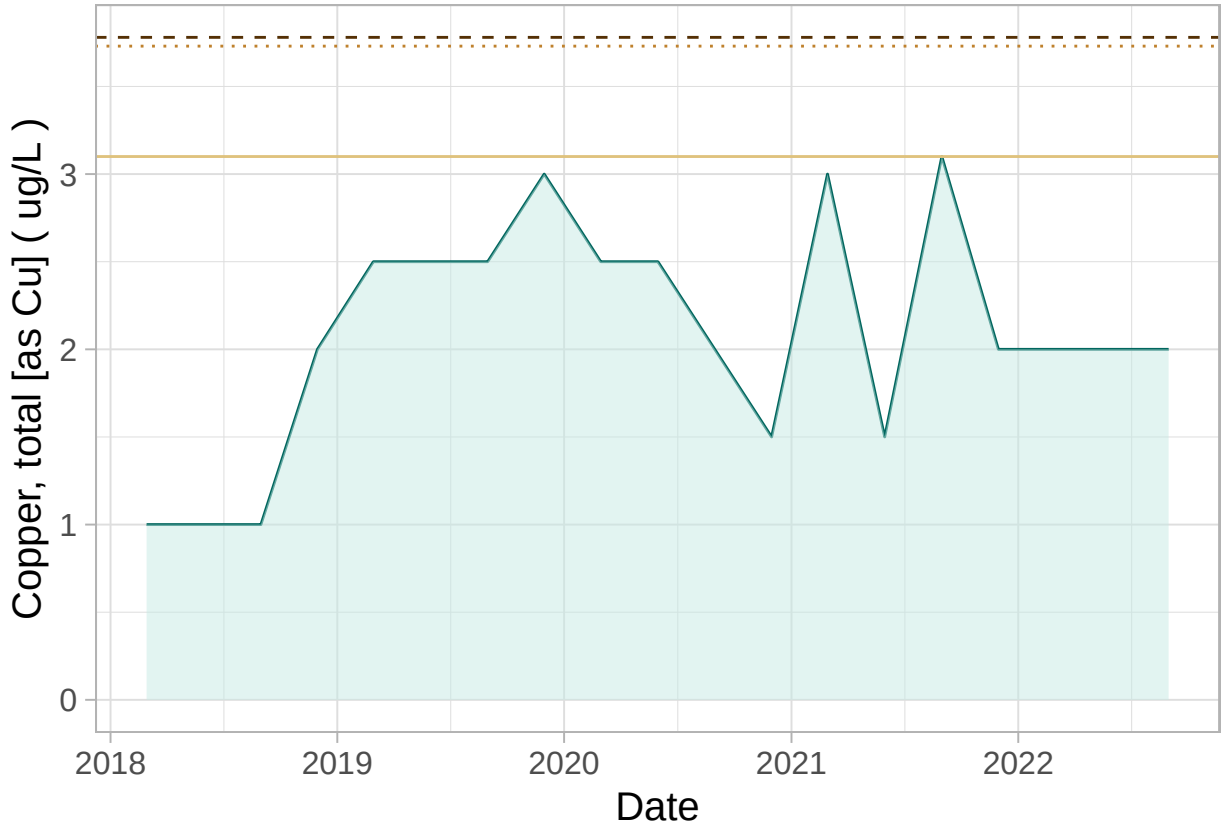
Max: 3.1 ug/L

WQS - SB: 3.73 ug/L

WQS - SD: NA ug/L

RWC: 3.78 ug/L

TIME SERIES



—Max: 3.1 ug/L

...WQS - SB: 3.73 ug/L

- - WQS - SD: NA ug/L

–RWC: 3.78 ug/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 18 \\
max &= 3.1 \\
DR &= 1 \\
CV &= 0.32 \\
Z_{95} &= 1.645 \\
Z_x &= 1.022
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.32^2)^{0.5} - 0.5\ln(1+0.32^2))}{exp(1.022\ln(1+0.32^2)^{0.5} - 0.5\ln(1+0.32^2))} \\
&= 1.22
\end{aligned}$$

$$\begin{aligned}
RWC &= 3.1 * 1.22/1 \\
&= 3.78
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Copper, total [as Cu]	2018-02-28	1.0	ug/L
PR0025984	001	Copper, total [as Cu]	2018-05-31	1.0	ug/L
PR0025984	001	Copper, total [as Cu]	2018-08-31	1.0	ug/L
PR0025984	001	Copper, total [as Cu]	2018-11-30	2.0	ug/L
PR0025984	001	Copper, total [as Cu]	2019-02-28	2.5	ug/L
PR0025984	001	Copper, total [as Cu]	2019-05-31	2.5	ug/L
PR0025984	001	Copper, total [as Cu]	2019-08-31	2.5	ug/L
PR0025984	001	Copper, total [as Cu]	2019-11-30	3.0	ug/L
PR0025984	001	Copper, total [as Cu]	2020-02-29	2.5	ug/L
PR0025984	001	Copper, total [as Cu]	2020-05-31	2.5	ug/L
PR0025984	001	Copper, total [as Cu]	2020-11-30	1.5	ug/L
PR0025984	001	Copper, total [as Cu]	2021-02-28	3.0	ug/L
PR0025984	001	Copper, total [as Cu]	2021-05-31	1.5	ug/L
PR0025984	001	Copper, total [as Cu]	2021-08-31	3.1	ug/L
PR0025984	001	Copper, total [as Cu]	2021-11-30	2.0	ug/L
PR0025984	001	Copper, total [as Cu]	2022-02-28	2.0	ug/L
PR0025984	001	Copper, total [as Cu]	2022-05-31	2.0	ug/L
PR0025984	001	Copper, total [as Cu]	2022-08-31	2.0	ug/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Cyanide, free available

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 59

Min: 0.7 ug/L

Mean: 1.08 ug/L

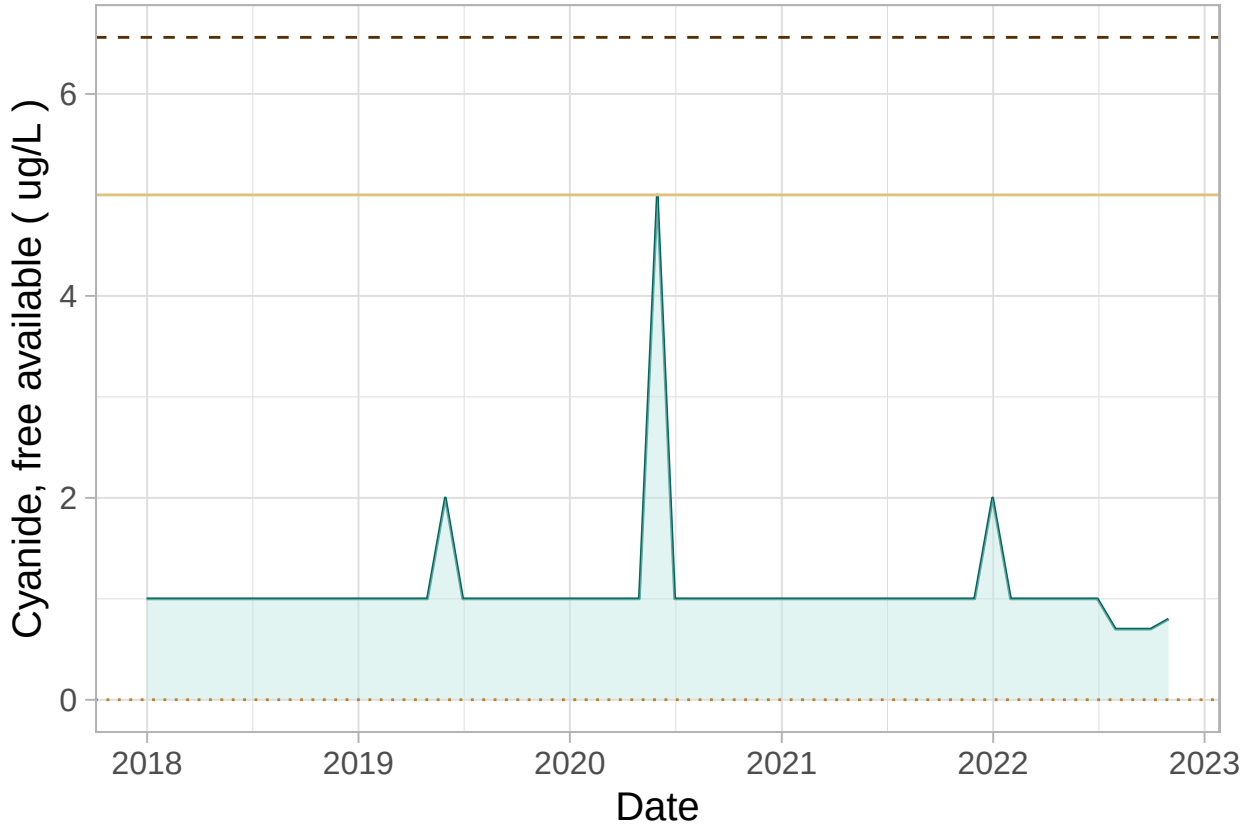
Max: 5 ug/L

WQS - SB: 0.001 ug/L

WQS - SD: NA ug/L

RWC: 6.56 ug/L

TIME SERIES



—Max: 5 ug/L

...WQS - SB: 0.001 ug/L

- - WQS - SD: NA ug/L

–RWC: 6.56 ug/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 59 \\
max &= 5 \\
DR &= 1 \\
CV &= 0.51 \\
Z_{95} &= 1.645 \\
Z_x &= 1.084
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.51^2)^{0.5} - 0.5\ln(1+0.51^2))}{exp(1.084\ln(1+0.51^2)^{0.5} - 0.5\ln(1+0.51^2))} \\
&= 1.31
\end{aligned}$$

$$\begin{aligned}
RWC &= 5 * 1.31/1 \\
&= 6.56
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Cyanide, free available	2017-12-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-01-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-02-28	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-03-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-04-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-05-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-06-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-07-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-08-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-09-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-10-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-11-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2018-12-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-01-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-02-28	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-03-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-04-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-05-31	2.0	ug/L
PR0025984	001	Cyanide, free available	2019-06-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-07-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-08-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-09-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-10-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-11-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2019-12-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-01-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-02-29	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-03-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-04-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-05-31	5.0	ug/L
PR0025984	001	Cyanide, free available	2020-06-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-07-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-08-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-09-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-10-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-11-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2020-12-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-01-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-02-28	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-03-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-04-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-05-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-06-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-07-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-08-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-09-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-10-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-11-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2021-12-31	2.0	ug/L
PR0025984	001	Cyanide, free available	2022-01-31	1.0	ug/L

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Cyanide, free available	2022-02-28	1.0	ug/L
PR0025984	001	Cyanide, free available	2022-03-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2022-04-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2022-05-31	1.0	ug/L
PR0025984	001	Cyanide, free available	2022-06-30	1.0	ug/L
PR0025984	001	Cyanide, free available	2022-07-31	0.7	ug/L
PR0025984	001	Cyanide, free available	2022-08-31	0.7	ug/L
PR0025984	001	Cyanide, free available	2022-09-30	0.7	ug/L
PR0025984	001	Cyanide, free available	2022-10-31	0.8	ug/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Mercury, total [as Hg]

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 18

Min: 0.01 ug/L

Mean: 0.02 ug/L

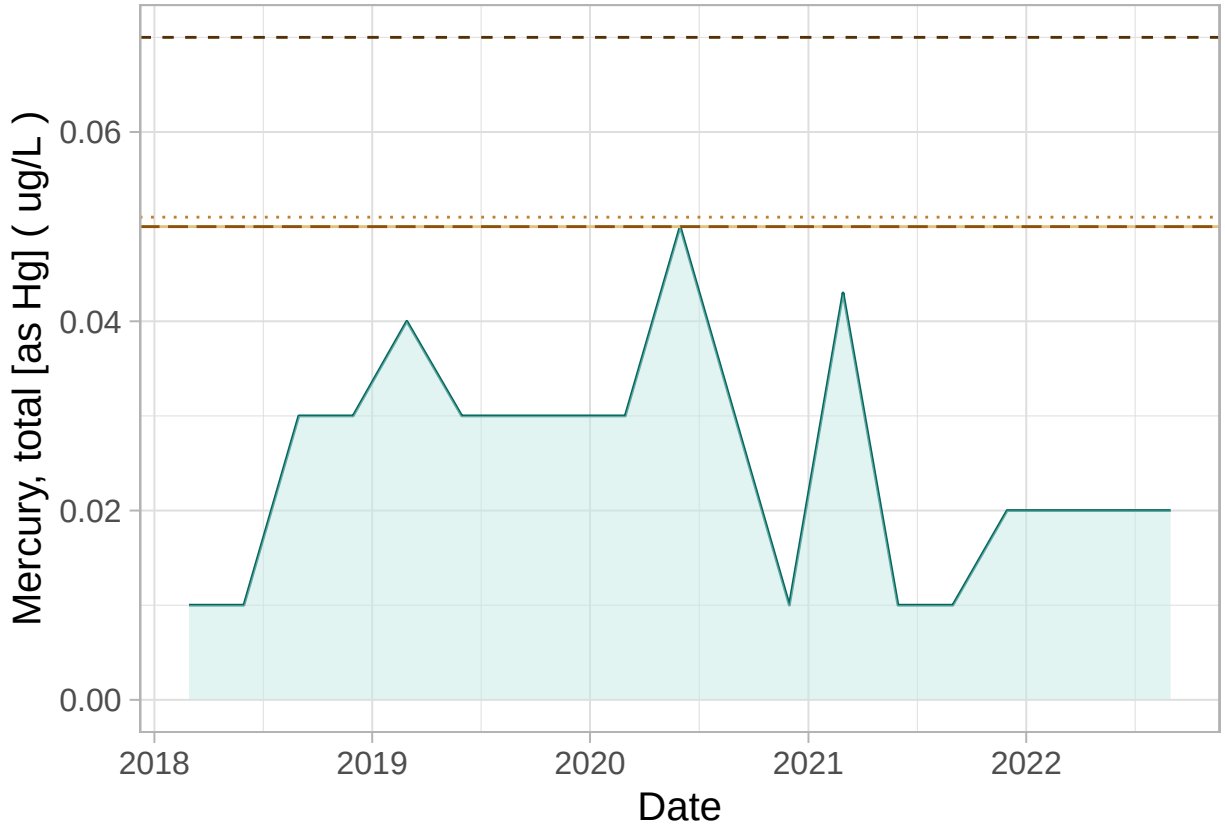
Max: 0.05 ug/L

WQS - SB: 0.051 ug/L

WQS - SD: 0.05 ug/L

RWC: 0.07 ug/L

TIME SERIES



—Max: 0.05 ug/L

...WQS - SB: 0.051 ug/L

- - WQS - SD: 0.05 ug/L

–RWC: 0.07 ug/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 18 \\
max &= 0.05 \\
DR &= 1 \\
CV &= 0.5 \\
Z_{95} &= 1.645 \\
Z_x &= 1.022
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.5^2)^{0.5} - 0.5\ln(1+0.5^2))}{exp(1.022\ln(1+0.5^2)^{0.5} - 0.5\ln(1+0.5^2))} \\
&= 1.34
\end{aligned}$$

$$\begin{aligned}
RWC &= 0.05 * 1.34/1 \\
&= 0.07
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Mercury, total [as Hg]	2018-02-28	0.010	ug/L
PR0025984	001	Mercury, total [as Hg]	2018-05-31	0.010	ug/L
PR0025984	001	Mercury, total [as Hg]	2018-08-31	0.030	ug/L
PR0025984	001	Mercury, total [as Hg]	2018-11-30	0.030	ug/L
PR0025984	001	Mercury, total [as Hg]	2019-02-28	0.040	ug/L
PR0025984	001	Mercury, total [as Hg]	2019-05-31	0.030	ug/L
PR0025984	001	Mercury, total [as Hg]	2019-08-31	0.030	ug/L
PR0025984	001	Mercury, total [as Hg]	2019-11-30	0.030	ug/L
PR0025984	001	Mercury, total [as Hg]	2020-02-29	0.030	ug/L
PR0025984	001	Mercury, total [as Hg]	2020-05-31	0.050	ug/L
PR0025984	001	Mercury, total [as Hg]	2020-11-30	0.010	ug/L
PR0025984	001	Mercury, total [as Hg]	2021-02-28	0.043	ug/L
PR0025984	001	Mercury, total [as Hg]	2021-05-31	0.010	ug/L
PR0025984	001	Mercury, total [as Hg]	2021-08-31	0.010	ug/L
PR0025984	001	Mercury, total [as Hg]	2021-11-30	0.020	ug/L
PR0025984	001	Mercury, total [as Hg]	2022-02-28	0.020	ug/L
PR0025984	001	Mercury, total [as Hg]	2022-05-31	0.020	ug/L
PR0025984	001	Mercury, total [as Hg]	2022-08-31	0.020	ug/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Oil & Grease

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 59

Min: 1.2 mg/L

Mean: 4.1 mg/L

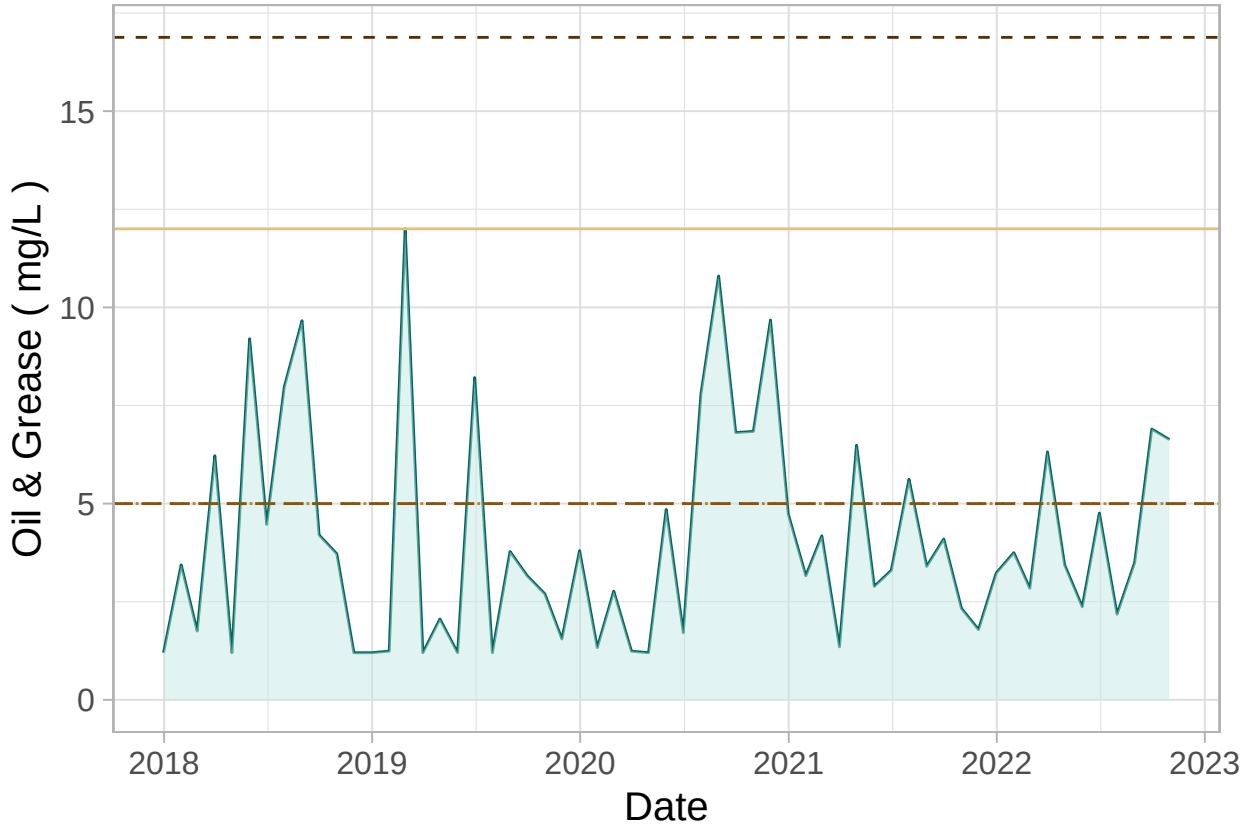
Max: 12 mg/L

WQS - SB: 5 mg/L

WQS - SD: 5 mg/L

RWC: 16.88 mg/L

TIME SERIES



—Max: 12 mg/L

...WQS - SB: 5 mg/L

- - WQS - SD: 5 mg/L

–RWC: 16.88 mg/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 59 \\
max &= 12 \\
DR &= 1 \\
CV &= 0.67 \\
Z_{95} &= 1.645 \\
Z_x &= 1.084
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.67^2)^{0.5} - 0.5\ln(1+0.67^2))}{exp(1.084\ln(1+0.67^2)^{0.5} - 0.5\ln(1+0.67^2))} \\
&= 1.41
\end{aligned}$$

$$\begin{aligned}
RWC &= 12 * 1.41/1 \\
&= 16.88
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Oil & Grease	2017-12-31	1.20	mg/L
PR0025984	001	Oil & Grease	2018-01-31	3.44	mg/L
PR0025984	001	Oil & Grease	2018-02-28	1.75	mg/L
PR0025984	001	Oil & Grease	2018-03-31	6.22	mg/L
PR0025984	001	Oil & Grease	2018-04-30	1.20	mg/L
PR0025984	001	Oil & Grease	2018-05-31	9.20	mg/L
PR0025984	001	Oil & Grease	2018-06-30	4.47	mg/L
PR0025984	001	Oil & Grease	2018-07-31	7.98	mg/L
PR0025984	001	Oil & Grease	2018-08-31	9.66	mg/L
PR0025984	001	Oil & Grease	2018-09-30	4.20	mg/L
PR0025984	001	Oil & Grease	2018-10-31	3.72	mg/L
PR0025984	001	Oil & Grease	2018-11-30	1.20	mg/L
PR0025984	001	Oil & Grease	2018-12-31	1.20	mg/L
PR0025984	001	Oil & Grease	2019-01-31	1.24	mg/L
PR0025984	001	Oil & Grease	2019-02-28	12.00	mg/L
PR0025984	001	Oil & Grease	2019-03-31	1.20	mg/L
PR0025984	001	Oil & Grease	2019-04-30	2.06	mg/L
PR0025984	001	Oil & Grease	2019-05-31	1.20	mg/L
PR0025984	001	Oil & Grease	2019-06-30	8.21	mg/L
PR0025984	001	Oil & Grease	2019-07-31	1.20	mg/L
PR0025984	001	Oil & Grease	2019-08-31	3.78	mg/L
PR0025984	001	Oil & Grease	2019-09-30	3.16	mg/L
PR0025984	001	Oil & Grease	2019-10-31	2.70	mg/L
PR0025984	001	Oil & Grease	2019-11-30	1.55	mg/L
PR0025984	001	Oil & Grease	2019-12-31	3.80	mg/L
PR0025984	001	Oil & Grease	2020-01-31	1.33	mg/L
PR0025984	001	Oil & Grease	2020-02-29	2.77	mg/L
PR0025984	001	Oil & Grease	2020-03-31	1.24	mg/L
PR0025984	001	Oil & Grease	2020-04-30	1.20	mg/L
PR0025984	001	Oil & Grease	2020-05-31	4.85	mg/L
PR0025984	001	Oil & Grease	2020-06-30	1.71	mg/L
PR0025984	001	Oil & Grease	2020-07-31	7.80	mg/L
PR0025984	001	Oil & Grease	2020-08-31	10.80	mg/L
PR0025984	001	Oil & Grease	2020-09-30	6.81	mg/L
PR0025984	001	Oil & Grease	2020-10-31	6.84	mg/L
PR0025984	001	Oil & Grease	2020-11-30	9.68	mg/L
PR0025984	001	Oil & Grease	2020-12-31	4.74	mg/L
PR0025984	001	Oil & Grease	2021-01-31	3.16	mg/L
PR0025984	001	Oil & Grease	2021-02-28	4.18	mg/L
PR0025984	001	Oil & Grease	2021-03-31	1.35	mg/L
PR0025984	001	Oil & Grease	2021-04-30	6.49	mg/L
PR0025984	001	Oil & Grease	2021-05-31	2.89	mg/L
PR0025984	001	Oil & Grease	2021-06-30	3.30	mg/L
PR0025984	001	Oil & Grease	2021-07-31	5.62	mg/L
PR0025984	001	Oil & Grease	2021-08-31	3.40	mg/L
PR0025984	001	Oil & Grease	2021-09-30	4.10	mg/L
PR0025984	001	Oil & Grease	2021-10-31	2.33	mg/L
PR0025984	001	Oil & Grease	2021-11-30	1.79	mg/L
PR0025984	001	Oil & Grease	2021-12-31	3.23	mg/L
PR0025984	001	Oil & Grease	2022-01-31	3.75	mg/L

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Oil & Grease	2022-02-28	2.84	mg/L
PR0025984	001	Oil & Grease	2022-03-31	6.32	mg/L
PR0025984	001	Oil & Grease	2022-04-30	3.44	mg/L
PR0025984	001	Oil & Grease	2022-05-31	2.37	mg/L
PR0025984	001	Oil & Grease	2022-06-30	4.76	mg/L
PR0025984	001	Oil & Grease	2022-07-31	2.18	mg/L
PR0025984	001	Oil & Grease	2022-08-31	3.50	mg/L
PR0025984	001	Oil & Grease	2022-09-30	6.90	mg/L
PR0025984	001	Oil & Grease	2022-10-31	6.63	mg/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : pH

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 59

Min: 8.22 SU

Mean: 8.34 SU

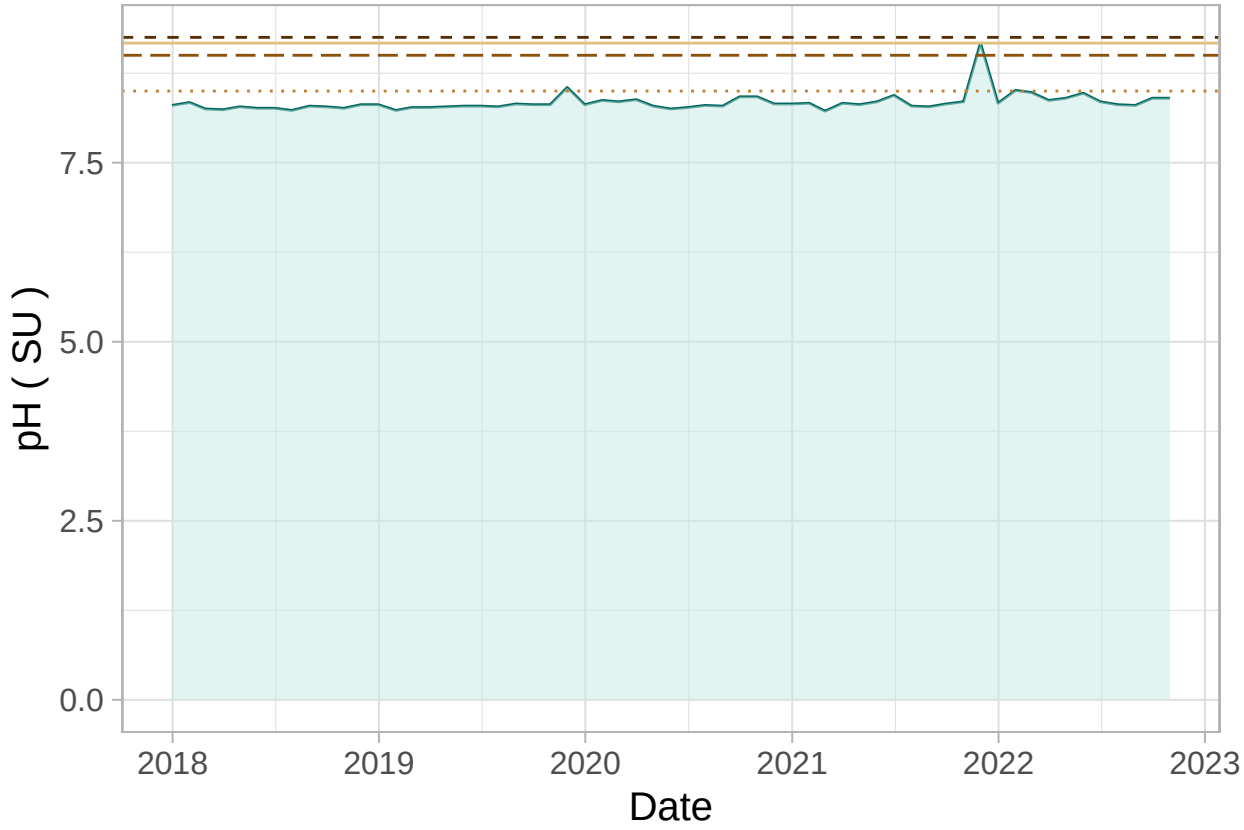
Max: 9.17 SU

WQS - SB: 8.5 SU

WQS - SD: 9 SU

RWC: 9.25 SU

TIME SERIES



—Max: 9.17 SU

...WQS - SB: 8.5 SU

- - WQS - SD: 9 SU

–RWC: 9.25 SU

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 59 \\
max &= 9.17 \\
DR &= 1 \\
CV &= 0.02 \\
Z_{95} &= 1.645 \\
Z_x &= 1.084
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.02^2)^{0.5} - 0.5\ln(1+0.02^2))}{exp(1.084\ln(1+0.02^2)^{0.5} - 0.5\ln(1+0.02^2))} \\
&= 1.01
\end{aligned}$$

$$\begin{aligned}
RWC &= 9.17 * 1.01/1 \\
&= 9.25
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	pH	2017-12-31	8.30	SU
PR0025984	001	pH	2018-01-31	8.34	SU
PR0025984	001	pH	2018-02-28	8.25	SU
PR0025984	001	pH	2018-03-31	8.24	SU
PR0025984	001	pH	2018-04-30	8.28	SU
PR0025984	001	pH	2018-05-31	8.26	SU
PR0025984	001	pH	2018-06-30	8.26	SU
PR0025984	001	pH	2018-07-31	8.23	SU
PR0025984	001	pH	2018-08-31	8.29	SU
PR0025984	001	pH	2018-09-30	8.28	SU
PR0025984	001	pH	2018-10-31	8.26	SU
PR0025984	001	pH	2018-11-30	8.31	SU
PR0025984	001	pH	2018-12-31	8.31	SU
PR0025984	001	pH	2019-01-31	8.23	SU
PR0025984	001	pH	2019-02-28	8.27	SU
PR0025984	001	pH	2019-03-31	8.27	SU
PR0025984	001	pH	2019-04-30	8.28	SU
PR0025984	001	pH	2019-05-31	8.29	SU
PR0025984	001	pH	2019-06-30	8.29	SU
PR0025984	001	pH	2019-07-31	8.28	SU
PR0025984	001	pH	2019-08-31	8.32	SU
PR0025984	001	pH	2019-09-30	8.31	SU
PR0025984	001	pH	2019-10-31	8.31	SU
PR0025984	001	pH	2019-11-30	8.55	SU
PR0025984	001	pH	2019-12-31	8.31	SU
PR0025984	001	pH	2020-01-31	8.37	SU
PR0025984	001	pH	2020-02-29	8.35	SU
PR0025984	001	pH	2020-03-31	8.38	SU
PR0025984	001	pH	2020-04-30	8.29	SU
PR0025984	001	pH	2020-05-31	8.25	SU
PR0025984	001	pH	2020-06-30	8.27	SU
PR0025984	001	pH	2020-07-31	8.30	SU
PR0025984	001	pH	2020-08-31	8.29	SU
PR0025984	001	pH	2020-09-30	8.42	SU
PR0025984	001	pH	2020-10-31	8.42	SU
PR0025984	001	pH	2020-11-30	8.32	SU
PR0025984	001	pH	2020-12-31	8.32	SU
PR0025984	001	pH	2021-01-31	8.33	SU
PR0025984	001	pH	2021-02-28	8.22	SU
PR0025984	001	pH	2021-03-31	8.33	SU
PR0025984	001	pH	2021-04-30	8.31	SU
PR0025984	001	pH	2021-05-31	8.35	SU
PR0025984	001	pH	2021-06-30	8.44	SU
PR0025984	001	pH	2021-07-31	8.29	SU
PR0025984	001	pH	2021-08-31	8.28	SU
PR0025984	001	pH	2021-09-30	8.32	SU
PR0025984	001	pH	2021-10-31	8.35	SU
PR0025984	001	pH	2021-11-30	9.17	SU
PR0025984	001	pH	2021-12-31	8.33	SU
PR0025984	001	pH	2022-01-31	8.51	SU

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	pH	2022-02-28	8.48	SU
PR0025984	001	pH	2022-03-31	8.37	SU
PR0025984	001	pH	2022-04-30	8.40	SU
PR0025984	001	pH	2022-05-31	8.47	SU
PR0025984	001	pH	2022-06-30	8.35	SU
PR0025984	001	pH	2022-07-31	8.31	SU
PR0025984	001	pH	2022-08-31	8.30	SU
PR0025984	001	pH	2022-09-30	8.40	SU
PR0025984	001	pH	2022-10-31	8.40	SU

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Solids, total suspended

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 59

Min: 4 mg/L

Mean: 14.11 mg/L

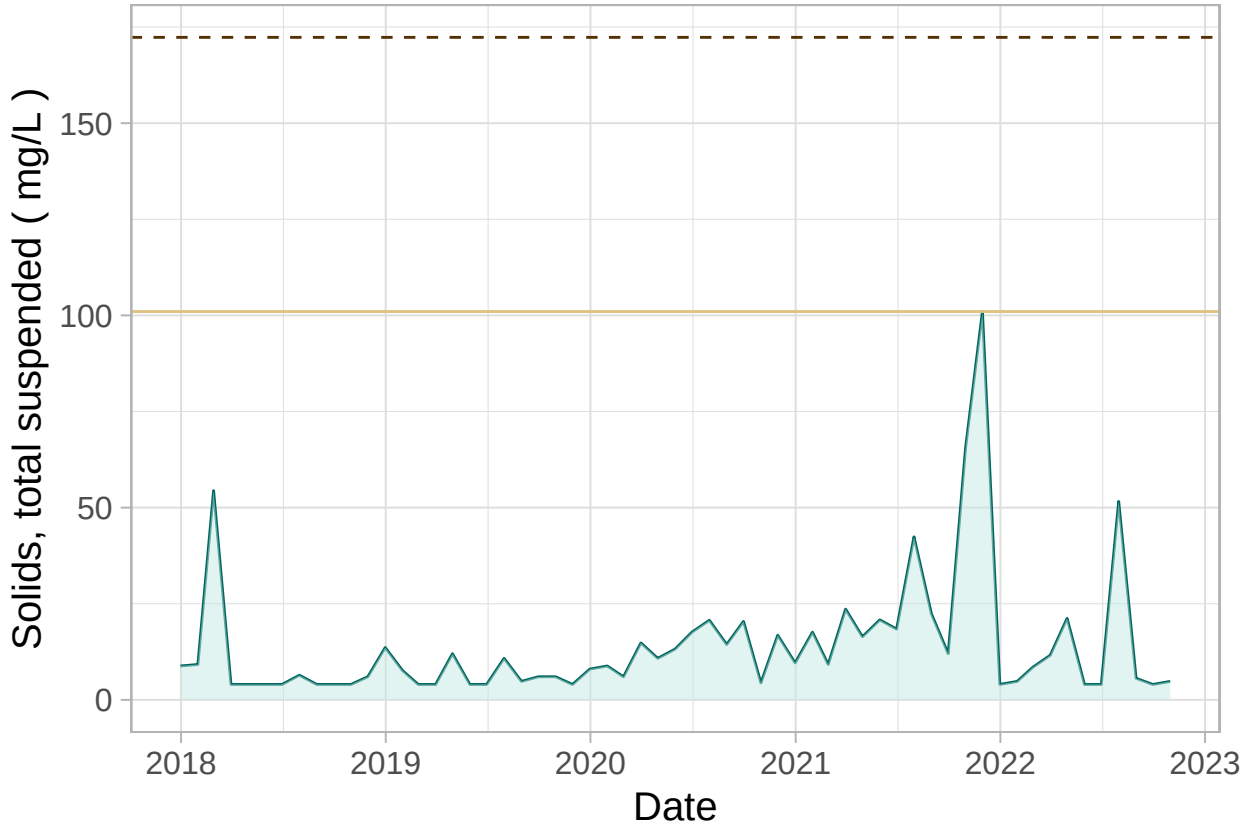
Max: 101 mg/L

WQS - SB: NA mg/L

WQS - SD: NA mg/L

RWC: 172.32 mg/L

TIME SERIES



—Max: 101 mg/L

...WQS - SB: NA mg/L

- - WQS - SD: NA mg/L

–RWC: 172.32 mg/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 59 \\
max &= 101 \\
DR &= 1 \\
CV &= 1.22 \\
Z_{95} &= 1.645 \\
Z_x &= 1.084
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+1.22^2)^{0.5} - 0.5\ln(1+1.22^2))}{exp(1.084\ln(1+1.22^2)^{0.5} - 0.5\ln(1+1.22^2))} \\
&= 1.71
\end{aligned}$$

$$\begin{aligned}
RWC &= 101 * 1.71/1 \\
&= 172.32
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Solids, total suspended	2017-12-31	8.80	mg/L
PR0025984	001	Solids, total suspended	2018-01-31	9.20	mg/L
PR0025984	001	Solids, total suspended	2018-02-28	54.40	mg/L
PR0025984	001	Solids, total suspended	2018-03-31	4.00	mg/L
PR0025984	001	Solids, total suspended	2018-04-30	4.00	mg/L
PR0025984	001	Solids, total suspended	2018-05-31	4.00	mg/L
PR0025984	001	Solids, total suspended	2018-06-30	4.00	mg/L
PR0025984	001	Solids, total suspended	2018-07-31	6.40	mg/L
PR0025984	001	Solids, total suspended	2018-08-31	4.00	mg/L
PR0025984	001	Solids, total suspended	2018-09-30	4.00	mg/L
PR0025984	001	Solids, total suspended	2018-10-31	4.00	mg/L
PR0025984	001	Solids, total suspended	2018-11-30	6.00	mg/L
PR0025984	001	Solids, total suspended	2018-12-31	13.60	mg/L
PR0025984	001	Solids, total suspended	2019-01-31	7.60	mg/L
PR0025984	001	Solids, total suspended	2019-02-28	4.00	mg/L
PR0025984	001	Solids, total suspended	2019-03-31	4.00	mg/L
PR0025984	001	Solids, total suspended	2019-04-30	12.00	mg/L
PR0025984	001	Solids, total suspended	2019-05-31	4.00	mg/L
PR0025984	001	Solids, total suspended	2019-06-30	4.00	mg/L
PR0025984	001	Solids, total suspended	2019-07-31	10.80	mg/L
PR0025984	001	Solids, total suspended	2019-08-31	4.80	mg/L
PR0025984	001	Solids, total suspended	2019-09-30	6.00	mg/L
PR0025984	001	Solids, total suspended	2019-10-31	6.00	mg/L
PR0025984	001	Solids, total suspended	2019-11-30	4.00	mg/L
PR0025984	001	Solids, total suspended	2019-12-31	8.00	mg/L
PR0025984	001	Solids, total suspended	2020-01-31	8.80	mg/L
PR0025984	001	Solids, total suspended	2020-02-29	6.00	mg/L
PR0025984	001	Solids, total suspended	2020-03-31	14.80	mg/L
PR0025984	001	Solids, total suspended	2020-04-30	10.80	mg/L
PR0025984	001	Solids, total suspended	2020-05-31	13.20	mg/L
PR0025984	001	Solids, total suspended	2020-06-30	17.60	mg/L
PR0025984	001	Solids, total suspended	2020-07-31	20.70	mg/L
PR0025984	001	Solids, total suspended	2020-08-31	14.40	mg/L
PR0025984	001	Solids, total suspended	2020-09-30	20.40	mg/L
PR0025984	001	Solids, total suspended	2020-10-31	4.40	mg/L
PR0025984	001	Solids, total suspended	2020-11-30	16.80	mg/L
PR0025984	001	Solids, total suspended	2020-12-31	9.60	mg/L
PR0025984	001	Solids, total suspended	2021-01-31	17.60	mg/L
PR0025984	001	Solids, total suspended	2021-02-28	9.20	mg/L
PR0025984	001	Solids, total suspended	2021-03-31	23.60	mg/L
PR0025984	001	Solids, total suspended	2021-04-30	16.40	mg/L
PR0025984	001	Solids, total suspended	2021-05-31	20.80	mg/L
PR0025984	001	Solids, total suspended	2021-06-30	18.40	mg/L
PR0025984	001	Solids, total suspended	2021-07-31	42.40	mg/L
PR0025984	001	Solids, total suspended	2021-08-31	22.40	mg/L
PR0025984	001	Solids, total suspended	2021-09-30	12.00	mg/L
PR0025984	001	Solids, total suspended	2021-10-31	65.60	mg/L
PR0025984	001	Solids, total suspended	2021-11-30	101.00	mg/L
PR0025984	001	Solids, total suspended	2021-12-31	4.00	mg/L
PR0025984	001	Solids, total suspended	2022-01-31	4.80	mg/L

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Solids, total suspended	2022-02-28	8.48	mg/L
PR0025984	001	Solids, total suspended	2022-03-31	11.60	mg/L
PR0025984	001	Solids, total suspended	2022-04-30	21.20	mg/L
PR0025984	001	Solids, total suspended	2022-05-31	4.00	mg/L
PR0025984	001	Solids, total suspended	2022-06-30	4.00	mg/L
PR0025984	001	Solids, total suspended	2022-07-31	51.60	mg/L
PR0025984	001	Solids, total suspended	2022-08-31	5.60	mg/L
PR0025984	001	Solids, total suspended	2022-09-30	4.00	mg/L
PR0025984	001	Solids, total suspended	2022-10-31	4.80	mg/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Sulfide-hydrogen sulfide [undissociated]

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 4

Min: 0.004 ug/L

Mean: 2.5 ug/L

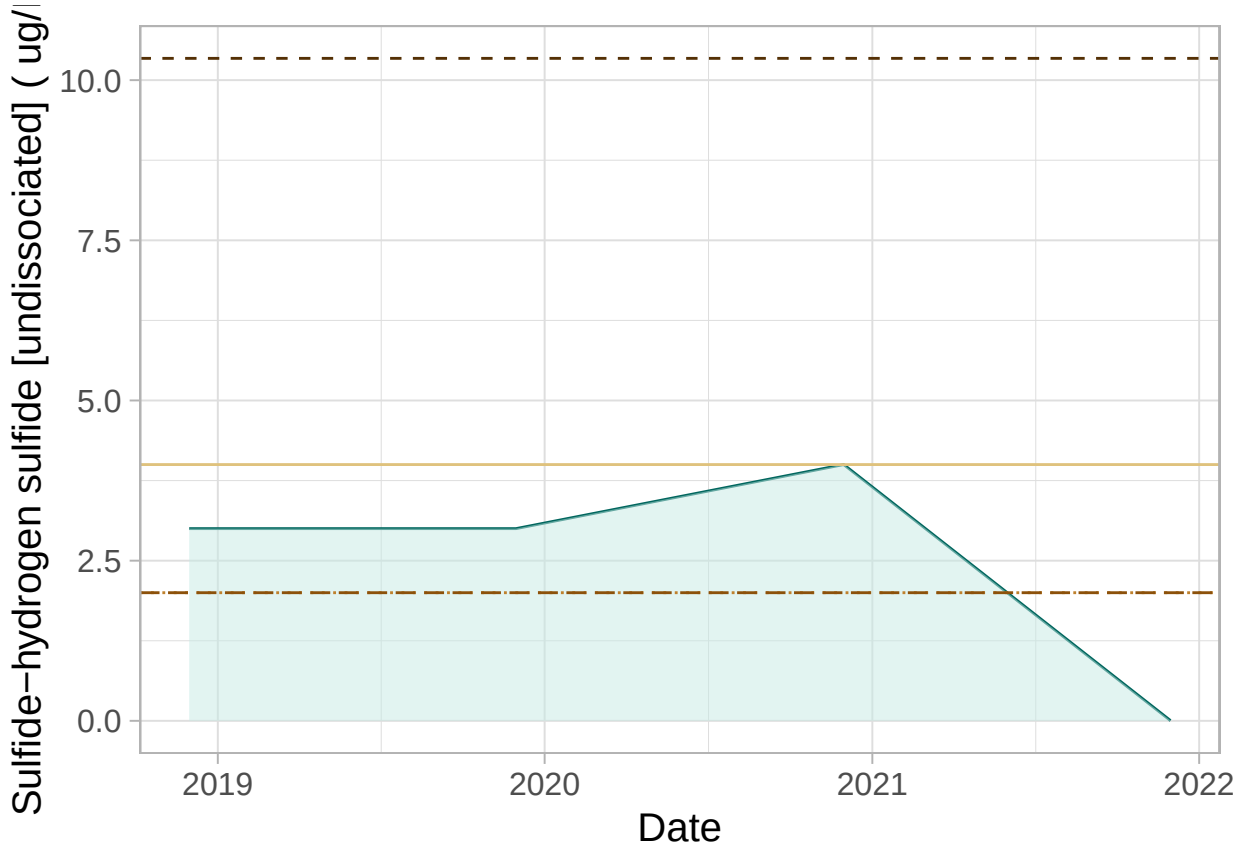
Max: 4 ug/L

WQS - SB: 2 ug/L

WQS - SD: 2 ug/L

RWC: 10.34 ug/L

TIME SERIES



—Max: 4 ug/L

...WQS - SB: 2 ug/L

- - WQS - SD: 2 ug/L

–RWC: 10.34 ug/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 4 \\
max &= 4 \\
DR &= 1 \\
CV &= 0.6 \\
Z_{95} &= 1.645 \\
Z_x &= -0.068
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.6^2)^{0.5} - 0.5\ln(1+0.6^2))}{exp(-0.068\ln(1+0.6^2)^{0.5} - 0.5\ln(1+0.6^2))} \\
&= 2.59
\end{aligned}$$

$$\begin{aligned}
RWC &= 4 * 2.59/1 \\
&= 10.34
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Sulfide-hydrogen sulfide [undissociated]	2018-11-30	3.000	ug/L
PR0025984	001	Sulfide-hydrogen sulfide [undissociated]	2019-11-30	3.000	ug/L
PR0025984	001	Sulfide-hydrogen sulfide [undissociated]	2020-11-30	4.000	ug/L
PR0025984	001	Sulfide-hydrogen sulfide [undissociated]	2021-11-30	0.004	ug/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 15 May, 2023

PR0025984 - 001 : Surfactants [MBAS]

Evaluated from 05/15/2018 to 05/15/2023

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 5

Min: 0.03 ug/L

Mean: 18.21 ug/L

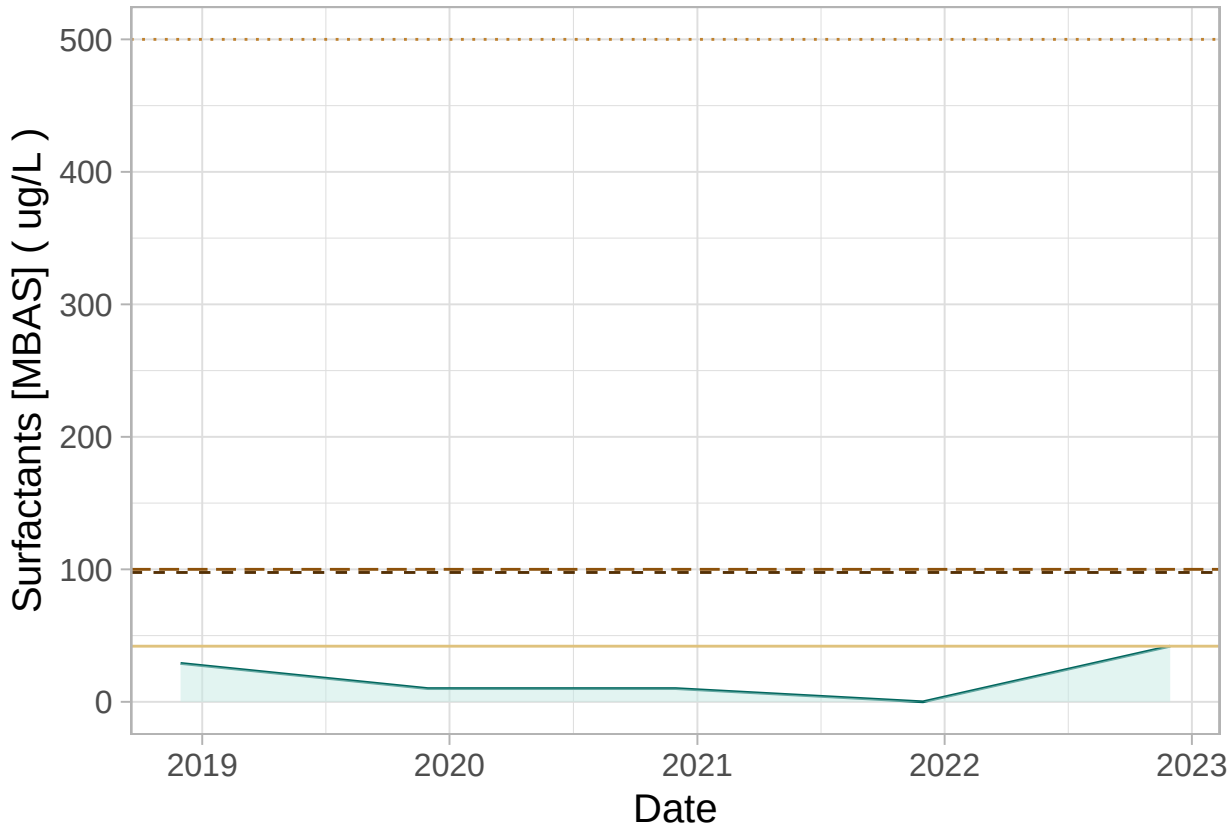
Max: 42 ug/L

WQS - SB: 500 ug/L

WQS - SD: 100 ug/L

RWC: 97.63 ug/L

TIME SERIES



—Max: 42 ug/L

...WQS - SB: 500 ug/L

- - WQS - SD: 100 ug/L

–RWC: 97.63 ug/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 5 \\
max &= 42 \\
DR &= 1 \\
CV &= 0.6 \\
Z_{95} &= 1.645 \\
Z_x &= 0.124
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.6^2)^{0.5} - 0.5\ln(1+0.6^2))}{exp(0.124\ln(1+0.6^2)^{0.5} - 0.5\ln(1+0.6^2))} \\
&= 2.32
\end{aligned}$$

$$\begin{aligned}
RWC &= 42 * 2.32/1 \\
&= 97.63
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Surfactants [MBAS]	2018-11-30	29.00	ug/L
PR0025984	001	Surfactants [MBAS]	2019-11-30	10.00	ug/L
PR0025984	001	Surfactants [MBAS]	2020-11-30	10.00	ug/L
PR0025984	001	Surfactants [MBAS]	2021-11-30	0.03	ug/L
PR0025984	001	Surfactants [MBAS]	2022-11-30	42.00	ug/L

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Temperature, water deg. centigrade

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 59

Min: 27 deg C

Mean: 29.75 deg C

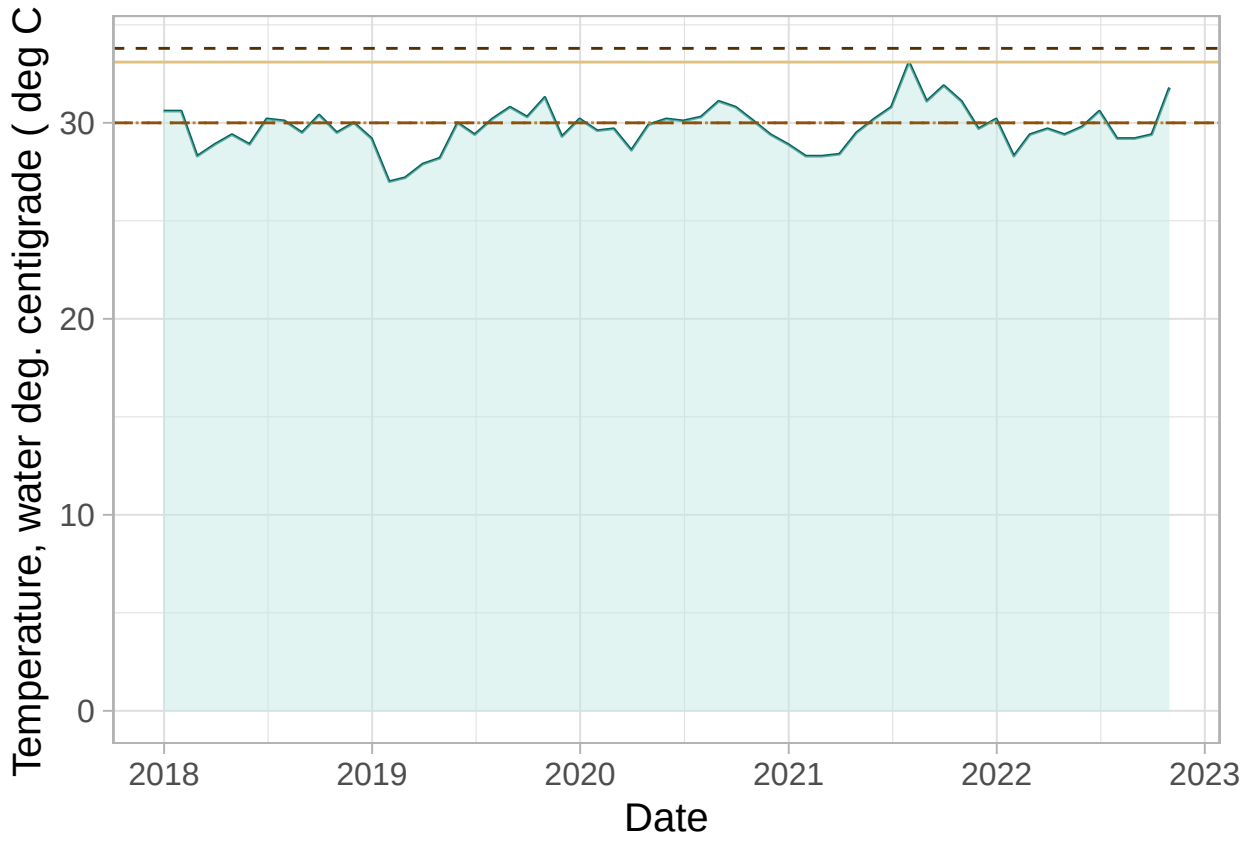
Max: 33.1 deg C

WQS - SB: 30 deg C

WQS - SD: 30 deg C

RWC: 33.8 deg C

TIME SERIES



—Max: 33.1 deg C

...WQS - SB: 30 deg C

- - WQS - SD: 30 deg C

–RWC: 33.8 deg C

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 59 \\
max &= 33.1 \\
DR &= 1 \\
CV &= 0.04 \\
Z_{95} &= 1.645 \\
Z_x &= 1.084
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.04^2)^{0.5} - 0.5\ln(1+0.04^2))}{exp(1.084\ln(1+0.04^2)^{0.5} - 0.5\ln(1+0.04^2))} \\
&= 1.02
\end{aligned}$$

$$\begin{aligned}
RWC &= 33.1 * 1.02/1 \\
&= 33.8
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Temperature, water deg. centigrade	2017-12-31	30.6	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-01-31	30.6	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-02-28	28.3	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-03-31	28.9	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-04-30	29.4	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-05-31	28.9	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-06-30	30.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-07-31	30.1	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-08-31	29.5	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-09-30	30.4	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-10-31	29.5	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-11-30	30.0	deg C
PR0025984	001	Temperature, water deg. centigrade	2018-12-31	29.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-01-31	27.0	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-02-28	27.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-03-31	27.9	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-04-30	28.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-05-31	30.0	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-06-30	29.4	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-07-31	30.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-08-31	30.8	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-09-30	30.3	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-10-31	31.3	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-11-30	29.3	deg C
PR0025984	001	Temperature, water deg. centigrade	2019-12-31	30.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-01-31	29.6	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-02-29	29.7	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-03-31	28.6	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-04-30	29.9	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-05-31	30.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-06-30	30.1	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-07-31	30.3	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-08-31	31.1	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-09-30	30.8	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-10-31	30.1	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-11-30	29.4	deg C
PR0025984	001	Temperature, water deg. centigrade	2020-12-31	28.9	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-01-31	28.3	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-02-28	28.3	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-03-31	28.4	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-04-30	29.5	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-05-31	30.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-06-30	30.8	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-07-31	33.1	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-08-31	31.1	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-09-30	31.9	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-10-31	31.1	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-11-30	29.7	deg C
PR0025984	001	Temperature, water deg. centigrade	2021-12-31	30.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2022-01-31	28.3	deg C

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Temperature, water deg. centigrade	2022-02-28	29.4	deg C
PR0025984	001	Temperature, water deg. centigrade	2022-03-31	29.7	deg C
PR0025984	001	Temperature, water deg. centigrade	2022-04-30	29.4	deg C
PR0025984	001	Temperature, water deg. centigrade	2022-05-31	29.8	deg C
PR0025984	001	Temperature, water deg. centigrade	2022-06-30	30.6	deg C
PR0025984	001	Temperature, water deg. centigrade	2022-07-31	29.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2022-08-31	29.2	deg C
PR0025984	001	Temperature, water deg. centigrade	2022-09-30	29.4	deg C
PR0025984	001	Temperature, water deg. centigrade	2022-10-31	31.8	deg C

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Turbidity

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 59

Min: 0.55 NTU

Mean: 2.74 NTU

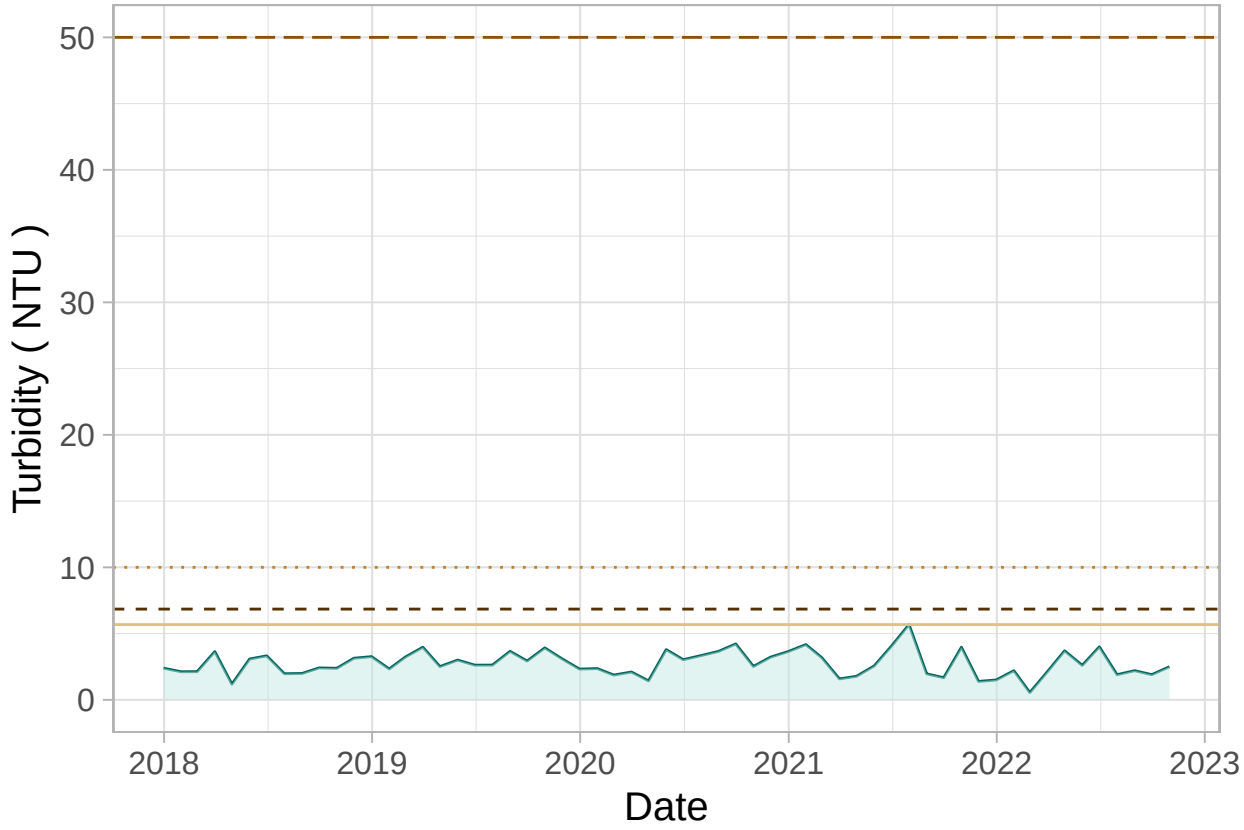
Max: 5.68 NTU

WQS - SB: 10 NTU

WQS - SD: 50 NTU

RWC: 6.85 NTU

TIME SERIES



—Max: 5.68 NTU

...WQS - SB: 10 NTU

- - WQS - SD: 50 NTU

–RWC: 6.85 NTU

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 59 \\
max &= 5.68 \\
DR &= 1 \\
CV &= 0.34 \\
Z_{95} &= 1.645 \\
Z_x &= 1.084
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.34^2)^{0.5} - 0.5\ln(1+0.34^2))}{exp(1.084\ln(1+0.34^2)^{0.5} - 0.5\ln(1+0.34^2))} \\
&= 1.21
\end{aligned}$$

$$\begin{aligned}
RWC &= 5.68 * 1.21/1 \\
&= 6.85
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Turbidity	2017-12-31	2.39	NTU
PR0025984	001	Turbidity	2018-01-31	2.12	NTU
PR0025984	001	Turbidity	2018-02-28	2.13	NTU
PR0025984	001	Turbidity	2018-03-31	3.64	NTU
PR0025984	001	Turbidity	2018-04-30	1.18	NTU
PR0025984	001	Turbidity	2018-05-31	3.08	NTU
PR0025984	001	Turbidity	2018-06-30	3.32	NTU
PR0025984	001	Turbidity	2018-07-31	1.97	NTU
PR0025984	001	Turbidity	2018-08-31	1.99	NTU
PR0025984	001	Turbidity	2018-09-30	2.41	NTU
PR0025984	001	Turbidity	2018-10-31	2.38	NTU
PR0025984	001	Turbidity	2018-11-30	3.14	NTU
PR0025984	001	Turbidity	2018-12-31	3.26	NTU
PR0025984	001	Turbidity	2019-01-31	2.33	NTU
PR0025984	001	Turbidity	2019-02-28	3.22	NTU
PR0025984	001	Turbidity	2019-03-31	3.97	NTU
PR0025984	001	Turbidity	2019-04-30	2.51	NTU
PR0025984	001	Turbidity	2019-05-31	3.00	NTU
PR0025984	001	Turbidity	2019-06-30	2.62	NTU
PR0025984	001	Turbidity	2019-07-31	2.62	NTU
PR0025984	001	Turbidity	2019-08-31	3.66	NTU
PR0025984	001	Turbidity	2019-09-30	2.93	NTU
PR0025984	001	Turbidity	2019-10-31	3.92	NTU
PR0025984	001	Turbidity	2019-11-30	3.10	NTU
PR0025984	001	Turbidity	2019-12-31	2.32	NTU
PR0025984	001	Turbidity	2020-01-31	2.36	NTU
PR0025984	001	Turbidity	2020-02-29	1.87	NTU
PR0025984	001	Turbidity	2020-03-31	2.10	NTU
PR0025984	001	Turbidity	2020-04-30	1.43	NTU
PR0025984	001	Turbidity	2020-05-31	3.79	NTU
PR0025984	001	Turbidity	2020-06-30	3.03	NTU
PR0025984	001	Turbidity	2020-07-31	3.34	NTU
PR0025984	001	Turbidity	2020-08-31	3.66	NTU
PR0025984	001	Turbidity	2020-09-30	4.22	NTU
PR0025984	001	Turbidity	2020-10-31	2.52	NTU
PR0025984	001	Turbidity	2020-11-30	3.22	NTU
PR0025984	001	Turbidity	2020-12-31	3.64	NTU
PR0025984	001	Turbidity	2021-01-31	4.17	NTU
PR0025984	001	Turbidity	2021-02-28	3.18	NTU
PR0025984	001	Turbidity	2021-03-31	1.58	NTU
PR0025984	001	Turbidity	2021-04-30	1.78	NTU
PR0025984	001	Turbidity	2021-05-31	2.56	NTU
PR0025984	001	Turbidity	2021-06-30	4.04	NTU
PR0025984	001	Turbidity	2021-07-31	5.68	NTU
PR0025984	001	Turbidity	2021-08-31	1.96	NTU
PR0025984	001	Turbidity	2021-09-30	1.67	NTU
PR0025984	001	Turbidity	2021-10-31	3.97	NTU
PR0025984	001	Turbidity	2021-11-30	1.39	NTU
PR0025984	001	Turbidity	2021-12-31	1.50	NTU
PR0025984	001	Turbidity	2022-01-31	2.20	NTU

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Turbidity	2022-02-28	0.55	NTU
PR0025984	001	Turbidity	2022-03-31	2.13	NTU
PR0025984	001	Turbidity	2022-04-30	3.70	NTU
PR0025984	001	Turbidity	2022-05-31	2.60	NTU
PR0025984	001	Turbidity	2022-06-30	4.00	NTU
PR0025984	001	Turbidity	2022-07-31	1.90	NTU
PR0025984	001	Turbidity	2022-08-31	2.20	NTU
PR0025984	001	Turbidity	2022-09-30	1.90	NTU
PR0025984	001	Turbidity	2022-10-31	2.50	NTU

R2 Reasonable Potential Tool Parameter Report

Compiled on 20 December, 2022

PR0025984 - 001 : Zinc, total [as Zn]

Evaluated from 12/20/2017 to 12/20/2022

FACILITY INFORMATION:

ECOELECTRICA, L.P.

COGENERATION PROJECT

PENUELAS, PR

WQS Import File: PR2022Standards-RPTool.xlsx

SUMMARY STATISTICS:

Number of Samples: 18

Min: 3 ug/L

Mean: 11.39 ug/L

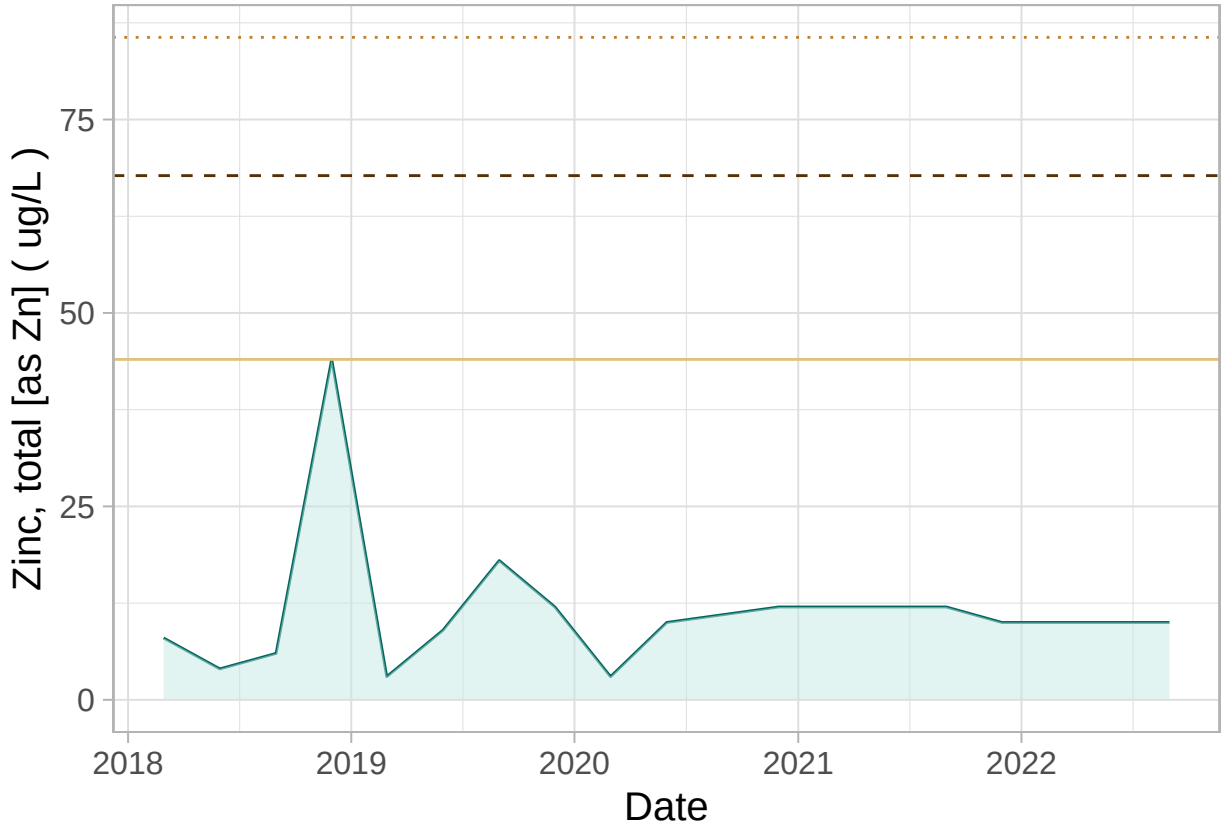
Max: 44 ug/L

WQS - SB: 85.62 ug/L

WQS - SD: NA ug/L

RWC: 67.75 ug/L

TIME SERIES



—Max: 44 ug/L ...WQS - SB: 85.62 ug/L

- - WQS - SD: NA ug/L –RWC: 67.75 ug/L

RECEIVING WATER CONCENTRATION CALCULATIONS

assuming a 95% confidence level and a 95% probability basis
calculations from 1991 Technical Support Document pgs 51-55

$$\begin{aligned}
\text{Number of samples} &= n \\
\text{Maximum effluent concentration} &= max \\
\text{Dilution Ratio} &= DR \\
\text{Coefficient of Variation (CV)} &= S_n/\mu \text{ or } 0.6 \text{ when } n \leq 10 \\
\text{Z-statistic} &= Z_x \\
\text{Reasonable Potential Multiplier (RPM)} &= \frac{exp(Z_{95}\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))}{exp(Z_x\ln(1+CV^2)^{0.5} - 0.5\ln(1+CV^2))} \\
\text{Receiving Water Concentration} &= max * RPM/\text{Dilution Ratio}
\end{aligned}$$

$$\begin{aligned}
n &= 18 \\
max &= 44 \\
DR &= 1 \\
CV &= 0.79 \\
Z_{95} &= 1.645 \\
Z_x &= 1.022
\end{aligned}$$

$$\begin{aligned}
RPM &= \frac{exp(1.645\ln(1+0.79^2)^{0.5} - 0.5\ln(1+0.79^2))}{exp(1.022\ln(1+0.79^2)^{0.5} - 0.5\ln(1+0.79^2))} \\
&= 1.54
\end{aligned}$$

$$\begin{aligned}
RWC &= 44 * 1.54/1 \\
&= 67.75
\end{aligned}$$

DATA TABLE

NPDES ID	Outfall	Parameter	Monitoring Period	Value	Unit
PR0025984	001	Zinc, total [as Zn]	2018-02-28	8	ug/L
PR0025984	001	Zinc, total [as Zn]	2018-05-31	4	ug/L
PR0025984	001	Zinc, total [as Zn]	2018-08-31	6	ug/L
PR0025984	001	Zinc, total [as Zn]	2018-11-30	44	ug/L
PR0025984	001	Zinc, total [as Zn]	2019-02-28	3	ug/L
PR0025984	001	Zinc, total [as Zn]	2019-05-31	9	ug/L
PR0025984	001	Zinc, total [as Zn]	2019-08-31	18	ug/L
PR0025984	001	Zinc, total [as Zn]	2019-11-30	12	ug/L
PR0025984	001	Zinc, total [as Zn]	2020-02-29	3	ug/L
PR0025984	001	Zinc, total [as Zn]	2020-05-31	10	ug/L
PR0025984	001	Zinc, total [as Zn]	2020-11-30	12	ug/L
PR0025984	001	Zinc, total [as Zn]	2021-02-28	12	ug/L
PR0025984	001	Zinc, total [as Zn]	2021-05-31	12	ug/L
PR0025984	001	Zinc, total [as Zn]	2021-08-31	12	ug/L
PR0025984	001	Zinc, total [as Zn]	2021-11-30	10	ug/L
PR0025984	001	Zinc, total [as Zn]	2022-02-28	10	ug/L
PR0025984	001	Zinc, total [as Zn]	2022-05-31	10	ug/L
PR0025984	001	Zinc, total [as Zn]	2022-08-31	10	ug/L