NPDES Compliance Sampling Inspection Report

PREPA - San Juan Power Plant

State Road No.28, San Juan PR 00934

NPDES Permit: PR0000698

September 12-13, 2022

Report Prepared by:

THUAN TRAN Digitally signed by THUAN TRAN Date: 2022.10.31 15:03:25 -04'00'

Thuan Tran, Physical Scientist

Date: ____Tuesday, October 25, 2022____

Report Approved by:

PHILIP COCUZZA Digitally signed by PHILIP COCUZZA Date: 2022.10.31 15:20:57 -04'00'

Phil Cocuzza, Chief
Monitoring Operations Section

Date: _____

1.0 OBJECTIVE

On September 12-13, 2022, at the request of the Caribbean Environmental Protection Division (CEPD), a National Pollutant Discharge Elimination System (NPDES) Compliance Sampling Inspection (CSI) was conducted at the Puerto Rico Electric Power Authority (PREPA) - San Juan Power Plant. The objective of the CSI was to gather information necessary to determine compliance with the requirements and limitations of their NPDES Permit; PR0000698. The permit became effective September 01, 2018 and will expire on August 31, 2023.

2.0 KEY PARTICIPANTS

Listed below are key inspection participants and contact information, grouped by organization.

U.S. Environmental Protection Agency
Thuan Tran, Lead Inspector
732-321-4455 and email: tran.thuan@epa.gov
Jose Rivera, Clean Water Act Team Leader
Jaime Lopez, Senior Enforcement Officer/Physical Scientist

PREPA - San Juan Power Plant
See Attached "Sampling Inspections – EPA" Sign-In Sheet

Puerto Rico Department of Natural and Environmental Resources (PRDNER)
See Attached "Sampling Inspections – EPA" Sign-In Sheet

3.0 FACILITY DESCRIPTION

3.1 General Information

Puerto Rico Electric and Power Authority (PREPA) - San Juan Power Plant is located on the north coast of Puerto Rico at State Road No. 28, Puerto Nuevo, San Juan, Puerto Rico. PREPA - San Juan Power Plant generates electricity and is categorized under Standard Industrial Classification (SIC) 4911 for Electric Services and the North American Industry Classification System (NAICS) 221112 for Fossil Fuel Electric Power Generation

PREPA - San Juan Power Plant consists of six generating units, four (4) 100-megawatts (MW) oil-fired generating units for a total of 400 MW, and two (2) 200-MW combined cycle units for a total of 400 MW. The electricity generating capacity of the plant is 800 MW.

Electricity generated at the PREPA - San Juan Power Plant starts by feeding de-ionized water into the boiler. De-ionized water is converted into steam. The superheated and high-pressure steam flows through the turbine spinning the blades to generate electricity. Electricity travels to the power grid and is redistributed to where it is needed.

3.2 Process Information

Demineralized process wastewater, stormwater, sludge pond supernatant and equipment wash water and boiler blowdown are directed to the On-Site Wastewater Treatment Plant (WWTP) into one of the three equalization (EQ) tanks with one out-of-service. EQ tank #2 receives demineralized wastewater, stormwater, and sludge pond supernatant. EQ tank #3 receives water from equipment maintenance and cleaning, and boiler blowdown. Process wastewater in EQ tank #3 is pH adjusted between 4-5 Standard Units (SU) and a polymer is added before it is pumped into an off-site sludge pond. The supernatant from the sludge pond is pumped to EQ tank #2 where it is mixed with the other process waste streams. The wastewater in EQ tank #2 is homogenized and pH adjusted to approximately 8.0 SU. As the wastewater from EQ tank #2 is pumped to the flocculation/coagulation chamber of the Nautilus Treatment System, a polymer is injected in-line. Mixing is provided to homogenize the wastewater before flowing into the rectangular clarifier chamber for phase separation. The effluent from the rectangular clarifier chamber overflows the weirs into the effluent trough. The discharge from the effluent trough continues to the polishing chamber. Additional retention time is provided before the effluent is pumped into the media filtration system. The filtrate from the filtration system is stored in the final effluent tank. Adjustment to the pH is performed in the final effluent tank before discharging through Internal Outfall 605.

The effluent from the On-Site Wastewater Treatment Plant combines with other waste streams to discharge into San Juan Bay via Outfall 002.

Backwash from the media filtration system is performed every day. The backwash is pumped to EQ tank #2. The sludge slurry from the rectangular clarifier chamber is pumped into the off-site sludge pond. The sludge from the sludge pond is removed approximately twice per year and is disposed of at an industrial landfill.

3.3 Facility Self-Monitoring Information

Compliance samples are collected by facility's personnel from the designated monitoring locations for all permitted outfalls. Samples collected are analyzed by EQ Laboratories, Inc., in Bayamon, Puerto Rico for Total Suspended Solids (TSS), Color, Turbidity, Cyanide (CN), Polychlorinated Biphenyls (PCBs), Oil and Grease (O&G), Sulfate, Sulfide, and Metals.

4.0 EPA SAMPLING/INSPECTION ACTIVITIES

4.1 Sampling Activities

Samples were collected from the monitoring locations for Outfalls 001, 002 and 003, and Internal Outfalls 603, 604 and 605. For Outfall 001, grab samples were collected and analyzed for color, zinc, turbidity, enterococci, O&G, and sulfate (SO_4). For Outfall 002, grab samples were collected and analyzed for color, metals (Cu, Pb, Hg, Ni, Se & Zn), enterococci, O&G, and cyanide. For Outfall 003, grab samples were collected and analyzed

for color, metals (Cu, Pb, Ni & Zn), turbidity, enterococci, and O&G. From Internal Outfalls 603, 604 & 605, grab samples were collected and analyzed for TSS, O&G, and PCBs. On-site grab samples were collected and analyzed from the outfalls for pH, Temperature, Settleable Solids (SS), Total Residual Chlorine, and Dissolved Oxygen (DO). In addition, temperature was collected and analyzed from Intake 7/8 and Intake 9/10.

All sample containers, preservation techniques and holding times were in accordance with US EPA requirements specified in 40 CFR Part 136. All samples were packaged and shipped through United Parcel Service (UPS) to the USEPA Laboratory in Edison, New Jersey for analysis. Due to the short holding time, enterococci samples were analyzed by Puerto Rico Department of Natural and Environmental Resources (PRDNER) Laboratory in Rio Piedras, Puerto Rico. Chain of custody was maintained for all samples. USEPA and PRDNER Laboratory Analytical Data Packages are attached with the report.

Flow meters were calibrated on February 27, 2020, by INSECO Inc.

Split samples were collected and given to the facility representative.

4.2 Inspection Activities

A NPDES Compliance Sampling Inspection (CSI) at the PREPA - San Juan Power Plant was conducted on September 12-13, 2022. Inspector's credential was presented, and business card was provided during the opening conference. It was explained that the purpose of the CSI with supporting on-site activities was to determine if the facility is in compliance with their NPDES Permit, PR0000698.

The supporting on-site activities consist of observing and confirming the outfalls on the permit (Outfalls 001, 002 and 003, as well as, Internal Outfalls 601, 602, 603, 604 & 605), sampling outfalls that discharged during the inspection (Outfalls 001, 002, and 003, as well as Internal Outfalls 603, 604, and 605), and a tour of the On-Site WWTP.

A brief closing conference was conducted in the field. Split samples were provided to the facility representatives. The inspection activities were briefed to the participants throughout the inspection and during the brief closing conference. On-site sample results and concerns discovered and/or observed during the inspection were communicated to the facility representatives.

4.3 Deviations and/or Environmental Conditions

During the tour of the On-Site WWTP, one of the two Nautilus Treatment Systems was out-of-service. The one in-service did not appear to be operating. No flow movement was observed. The mixer in the flocculation/coagulation chamber was not working. The weir plates around the rectangular clarifier chamber were rusted and corroded. No flow was observed flowing over the corroded weir plates. The rectangular clarifier chamber effluent trough was filled with sand and crushed shells as well as the polishing chamber. In addition to the sand and crushed shells, the polishing chamber had very little volume.

Dissolved Oxygen (DO) from Outfall 002 and Settleable Solids (SS) from Outfall 003 were not collected nor analyzed due to time constraint.

5.0 ANALYTICAL RESULTS

San Juan Power Plant – Outfall 001
September 12-13, 2022

Parameter	Units	Permit Limit	EPA Result
Color	Pt-Co Units	Shall not be altered by other than natural phenomena.	5.0
Dissolved Oxygen (DO)	mg/l	Shall not contain less than 4.0	5.0 R1 5.1 R2
Enterococci*	colonies/ 100 mg/l	Monitoring/Reporting (Monthly Average)	1,255
Grab #1			1,262.3
Grab #2			1,251.8
Grab #3			1,257.8
Grab #4			1,251.3
Grab #5			1,251.8
Flow, Influent	MGD	748.8 (Daily Maximum)	Out-of-Service
Oil & Grease	mg/l	The waters of Puerto Rico shall be substantially free from floating non-petroleum oils and greases as well as petroleum derived oils and greases.	U
pH	SU	Shall remain between 7.3 – 8.5	7.87
Solids and Other Matter	----	The waters of Puerto Rico shall not contain floating debris, scum or other floating materials attributable to the discharge in amount sufficient to be unsightly or deleterious to the existing or designated uses of the water body.	Did Not Observe
Sulfates (SO_4)	mg/l	2,800 (Daily Maximum)	2940
Suspended, Colloidal or Settleable Solids	ml/l	Solids from wastewater sources shall not cause deposition in or be deleterious to the existing or designated uses of the water body.	Zero
Temperature	°F (°C)	No more than four days per year the discharge will exceed 103°F (39.4°C)	39.5°C
Temperature, Difference b/t Intake & Discharge	°F (°C)	Shall not exceed 18°F (10°C)	9.0°C
Turbidity	NTU	10 (Daily Maximum)	2.38
Zinc	ug/l	85.62 (Daily Maximum)	UJ

Notes: R1= DO result obtained on the first run.
R2= DO result obtained on the second run.
U = analyte was not detected at or above the reporting limit.
J = Estimate value
Intake 7/8 Temperature: 30.5°C
Intake 9/10 Temperature: 31.5°C
Enterococci*: result is a geometric mean of 5 consecutive grab samples.

San Juan Power Plant – Outfall 002
September 12-13, 2022

Parameter	Units	Permit Limit	EPA Result
Color	Pt-Co Units	Shall not be altered by other than natural phenomena	10
Copper (Cu)	ug/l	3.73 (Daily Maximum)	14.4
Cyanide, Free (CN)	ug/l	1.0 (Daily Maximum)	U
Dissolved Oxygen (DO)	mg/l	Shall not contain less than 4.0	Did Not Collect
Enterococci*	colonies/ 100 mg/l	Monitoring/Reporting (Monthly Average)	137.5
Grab #1			161.4
Grab #2			135.4
Grab #3			144.1
Grab #4			104.8
Grab #5			148.8
Flow	MGD	0.89 (Daily Maximum)	0.189
Lead (Pb)	ug/l	8.52 (Daily Maximum)	U
Mercury (Hg)	ug/l	0.051 (Daily Maximum)	0.068
Nickel (Ni)	ug/l	8.28 (Daily Maximum)	**82.0**
Oil and Grease	mg/l	The waters of Puerto Rico shall be substantially free from floating non-petroleum oils and greases as well as petroleum derived oils and greases.	U
pH	SU	Shall remain between 7.3 – 8.5	6.99
Selenium (Se)	ug/l	71.1 (Daily Maximum)	U
Solids and Other Matter	----	The waters of Puerto Rico shall not contain floating debris, scum or other floating materials attributable to the discharge in amounts sufficient to be unsightly or deleterious to the existing or designated uses of the water body.	Did Not Observe
Suspended, Colloidal or Settleable Solids	ml/l	Solids from wastewater source shall not cause deposition in or be deleterious to the existing or designated uses of the water body.	Trace
Temperature	°F (°C)	Except by natural causes, no heat may be added to the waters of Puerto Rico, which would cause the temperature of any site to exceed 90°F (32.2°C)	30°C
Zinc (Zn)	ug/l	85.62 (Daily Maximum)	58.4

Notes: U = analyte was not detected at or above the reporting limit.
Enterococci*: result is a geometric mean of 5 consecutive grab samples.

San Juan Power Plant – Outfall 003
September 12-13, 2022

Parameter	Units	Permit Limit	EPA Result
Color	Pt-Co Units	Shall not be altered by other than natural phenomena	10
Copper (Cu)	ug/l	3.73 (Daily Maximum)	U
Dissolved Oxygen (DO)	mg/l	Shall not contain less than 4.0	4.5 R1 4.5 R2
Enterococci*	colonies/ 100 mg/l	Monitoring/Reporting (Monthly Average)	229.7
Grab #1			205.7
Grab #2			208.6
Grab #3			251.0
Grab #4			268.9
Grab #5			220.9
Flow	MGD	0.51 (Daily Maximum)	No Meter
Lead (Pb)	ug/l	8.52 (Daily Maximum)	U
Nickel (Ni)	ug/l	8.28 (Daily Maximum)	U
Oil and Grease	mg/l	The waters of Puerto Rico shall be substantially free from floating non-petroleum oils and greases as well as petroleum derived oils and greases.	U
pH	SU	Shall remain between 7.3 – 8.5	7.00
Solids and Other Matter	----	The waters of Puerto Rico shall not contain floating debris, scum or other floating materials attributable to the discharge in amount sufficient to be unsightly or deleterious to the existing or designated uses of the water body.	Did Not Observe
Suspended, Colloidal or Settleable Solids	ml/L	Solids from wastewater sources shall not cause deposition in or be deleterious to the designated uses of the waters.	Did Not Collect
Temperature	°F (°C)	Except by natural causes, no heat may be added to the waters of Puerto Rico, which would cause the temperature of any site to exceed 90°F (32.2°C)	30°C
Turbidity	NTU	10 (Daily Maximum)	1.04
Zinc (Zn)	ug/l	85.62 (Daily Maximum)	U

Notes: U = analyte was not detected at or above the reporting limit.
R1= DO result obtained on the first run.
R2= DO result obtained on the second run.
Enterococci*: result is a geometric mean of 5 consecutive grab samples

San Juan Power Plant – Internal Outfall 603
September 12-13, 2022

Parameter	Units	Permit Limit	EPA Result
Oil and Grease	mg/l	Daily maximum of 20.0 Daily average of 15.0	U
Total Suspended Solids	mg/l	Daily maximum of 50.0 Daily average of 30.0	U
PCBs	ug/l	No discharge of PCBs	U
pH	SU	Shall remain between 6.0 – 9.0	8.03

Note: U = analyte was not detected at or above the reporting limit.

San Juan Power Plant – Internal Outfall 604
September 12-13, 2022

Parameter	Units	Permit Limit	EPA Result
Oil and Grease	mg/l	Daily maximum of 20.0 Daily average of 15.0	U
Total Suspended Solids	mg/l	Daily maximum of 50.0 Daily average of 30.0	U
PCBs	ug/l	No discharge of PCBs	U
pH	SU	Shall remain between 6.0 – 9.0	7.61

Note: U = analyte was not detected at or above the reporting limit.

San Juan Power Plant – Internal Outfall 605
September 12-13, 2022

Parameter	Units	Permit Limit	EPA Result
Oil and Grease	mg/l	Daily maximum of 20.0 Daily average of 15.0	U
Total Suspended Solids	mg/l	Daily maximum of 50.0 Daily average of 30.0	U
PCBs	ug/l	No discharge of PCBs	U
pH	SU	Shall remain between 6.0 – 9.0	Did Not Collect

Note: U = analyte was not detected at or above the reporting limit.

6.0 FINDINGS

6.1 Sampling Result Findings

The EPA analytical results obtained during this inspection show the following parameter(s) as being outside of the acceptable limits:

6.1.1 According to the NPDES Permit for Outfall 001, Sulfates (SO_4) has an effluent daily maximum limitation of 2,800 milligrams per liter (mg/l). The analytical result was determined to be 2,940 mg/l.

6.1.2 According to the NPDES Permit for Outfall 001, Temperature has an effluent limitation of, *"No More than four days per year the discharge will exceed 103°F (39.4°C)."* The on-site analytical result was determined to be 39.5°C.

6.1.3 According to the NPDES Permit for Outfall 002, Copper (Cu) has an effluent daily maximum limitation of 3.73 micrograms per liter (ug/l). The analytical result was determined to be 14.4 ug/l.

6.1.4 According to the NPDES Permit for Outfall 002, Nickel (Ni) has an effluent daily maximum limitation of 8.28 micrograms per liter (ug/l). The analytical result was determined to be 82.0 ug/l.

6.2 Inspection Findings

In addition to the analytical data, a review of the permitted outfalls was observed/confirmed as discussed in Section 4.2. During the inspection, the following observation was noted which may contravene the requirements of the permit or the applicable regulations:

6.2.1 During the tour of the On-site Wastewater Treatment Plant, issues were observed (refer to Section 4.3 Deviations and/or Environmental Conditions). According to 40 CFR Part 122.41 (e) Proper Operation and Maintenance of Subpart C – Permit Conditions, it states, "*The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control and related appurtenances) which are installed or used by the permitted to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems which are installed by a permitted only when the operation is necessary to achieve compliance with the conditions of the permit."*

7.0 ATTACHMENTS

Attachment #1: "Sampling Inspections – EPA" Sign-In Sheet

Attachment #2: PREPA - San Juan Power Plant On-Site WWTP Flow Diagram

Attachment #3: USEPA Chain of Custody for Samples to the PRDNER Laboratory

Attachment #4: PRDNER Laboratory Analytical Data Package

Attachment #5: USEPA Chain of Custody for Samples to the EPA Edison Laboratory

Attachment #6: USEPA Laboratory Analytical Data Package

8.0 PHOTOGRAPHS

Photo #1. Samples were collected from Outfall 001 discharge point.

Photo #2. Samples were collected from Outfall 002 monitoring location.

Photo #3. Samples were collected from Outfall 003 monitoring location.

Photo #4. Samples were collected from Internal Outfall 603 monitoring location.

Photo #5. Samples were collected from Internal Outfall 604 monitoring location.

Photo #6. Samples were collected from Internal Outfall 605 sampling tap.

Photo #7. A sample for temperature was collected from Intake 7/8 sampling point.

Photo #8. A sample for temperature was collected from Intake 9/10 sampling point.

7.0 Attachments

8.0 Photographs

Photo #1. Samples were collected from Outfall 001 discharge point.

Photo #2. Samples were collected from Outfall 002 monitoring location.

Photo #3. Samples were collected from Outfall 003 monitoring location.

Photo #4. Samples were collected from Internal Outfall 603 monitoring location.

Photo #5. Samples were collected from Internal Outfall 604 monitoring location.

Photo #6. Samples were collected from Internal Outfall 605 monitoring location.

Photo #7. A sample for temperature was collected from Intake 7/8 monitoring location.

Photo #8. A sample for temperature was collected from Intake 9/10 monitoring location.

GOBIERNO DE PUERTO RICO
AUTORIDAD DE ENERGÍA ELÉCTRICA

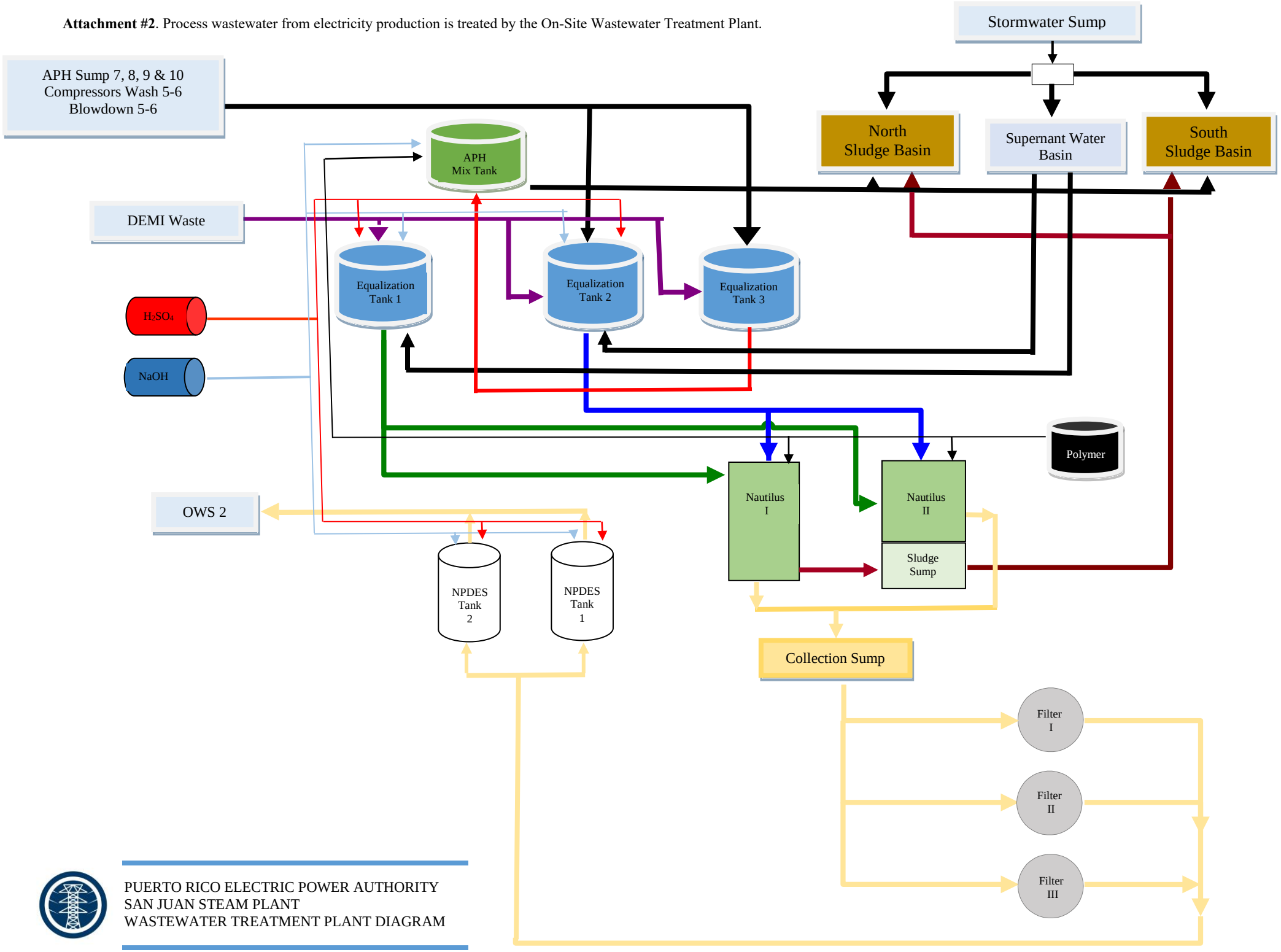
Attachment #1. Participants signed in during the Opening and Closing Conferences of the inspection.

Sampling Inspections – EPA

San Juan Power Plant
September 12, 2022

Name	Position/Area	Email	Signature
Yaritza Acevedo	Oficial de Programa	yaritza.acevedo@prepa.com	
Zaidmar Molina Torres	Oficial Protección Ambiental	zaidmar.molina@prepa.com	
Jessia Butter Quiara	Químico supervisor	jessia.butter@prepa.com	JBQ
Zulma Matos Maldonado	Administrador	Zulma.Matos@PREPA	
José A. Rivera	Lead Env. Engineer	rivera.jose@epa.gov	
Juan Tejada	Physical Scientist	Tejada.juan@epa.gov	
Marco Orizondo	Intern ORISE	orizondo.lugo.marco@epa.gov	

Attachment #2. Process wastewater from electricity production is treated by the On-Site Wastewater Treatment Plant.



PUERTO RICO ELECTRIC POWER AUTHORITY
SAN JUAN STEAM PLANT
WASTEWATER TREATMENT PLANT DIAGRAM

Attachment #3. Microbiology samples were analyzed by PRDNER Laboratory.

US EPA REGION 2 LABORATORY

CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY ___ PREPA-San Juan Power Plant

PROGRAM: SF ☐ : SITE ID _____ OPERABLE UNIT _____ PROJECT LEADER _____ Thuan Tran

PROGRAM RESULTS CODE _____

Decision Unit Code Y206 | RCRA ☐ D210 | RCRA ENF ☐ D307 | NPDES ☐ X B304 | SDWA ☐ C215 | AM ☐ B224 | CAA ☐ A305 | TSCA ☐ L306 | OD ☐ B253 | FIFRA ☐ | CRIMINAL ENF ☐

Permit #: PR0000698

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS,	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Outfall 001 - Grab #1	5	B	☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	04		4:01p	9/12/2022
Outfall 001 - Grab #2			☐	1, 290ml sterilized plastic bottle: Enterococci	☐	04		4:17p	9/12/2022
Outfall 001 - Grab #3			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	04		4:32p	9/12/2022
Outfall 001 - Grab #4			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	04		4:49p	9/12/2022
Outfall 001 - Grab #5			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	04		5:04p	9/12/2022
Outfall 002 - Grab #1	5	B	☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	04		1:17p	9/12/2022
Outfall 002 - Grab #2			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	04		2pm	9/12/2022
Outfall 002 - Grab #3			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	04		2:29p	9/12/2022
Outfall 002 - Grab #4			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	04		2:51p	9/12/2022
Outfall 002 - Grab #5			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	04		3:07p	9/12/2022

COMMENTS & SPECIAL REQUIREMENTS:

Outfall 001: 0.02 mg/L = TRC
Outfall 002: 0.03 mg/L = "
Outfall 002: 0.12 mg/L = "

Preservative Added & Checked

0=ice
1=H2SO4 pH<2
2=HNO3 pH<2
3=HCl pH<2
4=Na2S2O3
5=NaOH pH>9
6=Ascorbic Acid
7=FAS
8=ZnAc
9=NaOH pH>12
10=NH4Cl

Matrix:

A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☐ N ☑

		Time	Date
Relinquished By:	Person Assuming Responsibility for Sample(s):	5:04	9/12/22
Relinquished By:	Received By:	5:04	9/12/2022
Relinquished By:	Received By:	5:38	9/12/22
Relinquished By:	Received By:		

revised 10/25/2004

US EPA REGION 2 LABORATORY

CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY ___ PREPA-San Juan Power Plant

PROJECT LEADER _____ Thuan Tran

PROGRAM: SF ☐ : SITE ID _____ OPERABLE UNIT _____ PROGRAM RESULTS CODE _____

Decision	RCRA ☐	RCRA ENF ☐	NPDES ☐ X	SDWA ☐	AM ☐	CAA ☐	TSCA ☐	OD ☐	FIFRA ☐	CRIMINAL ENF ☐
Unit Code Y206	D210	D307	B304	C215	B224	A305	L306	B253		

Permit #: _____PR0000698_____

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS,	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Outfall 003 - Grab #1	5	B	☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	0 4		1.24p	9/12/2022
Outfall 003 - Grab #2		↓	☐	1, 290ml sterilized plastic bottle: Enterococci	☐	0 4		2.15p	9/12/2022
Outfall 003 - Grab #3			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	0 4		2.43p	9/12/2022
Outfall 003 - Grab #4			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	0 4		3pm	9/12/2022
Outfall 003 - Grab #5			☐	1, 290-ml sterilized plastic bottle: Enterococci	☐	0 4		3.16pm	9/12/2022
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			

COMMENTS & SPECIAL REQUIREMENTS:

Preservative Added & Checked

0=ice
1=H2SO4 pH<2
2=HNO3 pH<2
3=HCl pH<2
4=Na2S2O3
5=NaOH pH>9
6=Ascorbic Acid
7=FAS
8=ZnAc
9=NaOH pH>12
10=NH4Cl

Matrix:

A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☐ N ☑

		Time	Date
Relinquished By:	Person Assuming Responsibility for Sample(s):	5:04	9/12/22
Relinquished By:	Received By:	5:04	9/12/22
Relinquished By:	Received By: F	5:38	9/12/22
	Received By:		

revised 10/25/2004

Attachment #4. Analytical Data for Enterococci samples collected from PREPA - San Juan Power Plant Outfalls.

GOBIERNO DE PUERTO RICO
DEPARTAMENTO DE RECURSOS NATURALES Y AMBIENTALES

Microbiology Section Results Form

Estudio EPA

Route/Municipalities: PREPA-San Juan Power Plant

COC No.:

	Enterolert	Time Received:	1738
Parameter:	Enterococcus	Time Analyzed:	1827
Date Received:	9 septiembre 2022	Date Reported:	11 septiembre 2022

Station Number	Enterococci Colonies/100mL	Observations
CI	0	Initial Control
Outfall-001#1	1,262.3	Promedio Dilution(100ml+10ml/2)
Outfall-001#2	1,251.8	Promedio Dilution(100ml+10ml/2)
Outfall-001#3	1,257.8	Promedio Dilution(100ml+10ml/2)
Outfall-001#4	1,251.3	Promedio Dilution(100ml+10ml/2)
Outfall-001#5	1,251.8	Promedio Dilution(100ml+10ml/2)
Outfall-002#1	161.4	Promedio Dilution(100ml+10ml/2)
Outfall-002#2	135.4	Promedio Dilution(100ml+10ml/2)
Outfall-002#3	144.1	Promedio Dilution(100ml+10ml/2)
Outfall-002#4	104.8	Promedio Dilution(100ml+10ml/2)
Outfall-002#5	148.8	Promedio Dilution(100ml+10ml/2)
Outfall-003#1	205.7	Promedio Dilution(100ml+10ml/2)
Outfall-003#2	208.6	Promedio Dilution(100ml+10ml/2)
Outfall-003#3	251.0	Promedio Dilution(100ml+10ml/2)
Outfall-003#4	268.9	Promedio Dilution(100ml+10ml/2)
Outfall-003#5	220.9	Promedio Dilution(100ml+10ml/2)

Comments: *Notice that, QA/QC sterility check is required whenever a new lot of Enterolert is received. Control Strain are only used to perform the QA/QC sterility check.

Signature: José J. Matos

Supervisor Signature: Eileen C Villafañe

Attachment #5. Samples were shipped to USEPA Region 2 Laboratory in Edison, New Jersey.

US EPA REGION 2 LABORATORY

CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY ___ PREPA-San Juan Power Plant

PROJECT LEADER _____ Thuan Tran

PROGRAM: SF ☐ : SITE ID _____ OPERABLE UNIT _____ PROGRAM RESULTS CODE _____

Decision	RCRA ☐	RCRA ENF ☐	NPDES ☐ X	SDWA ☐	AM ☐	CAA ☐	TSCA ☐	OD ☐	FIFRA ☐	CRIMINAL ENF ☐
Unit Code	Y206	D210	D307	B304	C215	B224	A305	L306	B253	

Permit #: _____PR0000698_____

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS,	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Outfall 001	5	A	☐	1, 125-ml plastic bottle: Color	☐	0		2:00PM	9/13/2022
		A	☐	1, 250ml plastic bottle: Metal (Zinc)	☐	02		2:00PM	9/13/2022
		A	☐	1, 250-ml plastic bottle: Turbidity	☐	0		2:00PM	9/13/2022
		A	☐	1, 1-L clear WM jar: O&G	☐	03		2:00PM	9/13/2022
		A	☐	1, 125-ml plastic bottle: Sulfates (SO4)	☐	0		2:00PM	9/13/2022
Outfall 002	7	B	☐	1, 125-ml plastic bottle: Color	☐	0		2:55Pm	9/13/2022
		B	☐	1, 125-ml plastic bottle: Metals*	☐	02		2:55PM	9/13/2022
		B	☐	1, 250-ml plastic bottle: Mercury	☐	02		2:55PM	9/13/2022
		B	☐	1, 125-ml plastic bottle: Cyanide, Free	☐	045		2:55PM	9/13/2022
		B	☐	3, 1-L clear WM jars: O&G	☐	03		2:55PM	9/13/2022

COMMENTS & SPECIAL REQUIREMENTS:

Notes: Metals*: Cu, Pb, Ni, Se & Zn.

Preservative Added & Checked

0=ice
1=H2SO4 pH<2
2=HNO3 pH<2
3=HCl pH<2
4=Na2S2O3
5=NaOH pH>9
6=Ascorbic Acid
7=FAS
8=ZnAc
9=NaOH pH>12
10=NH4Cl

	Time	Date
Person Assuming Responsibility for Sample(s): Thuan Tran	9:37PM	9/13/2022
Relinquished By: Thuan Tran / Received By:	10:50	9/14/22
Relinquished By: / Received By:		
Relinquished By: / Received By:		

Matrix:

A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☐ N ☐

Temp = 0.3°C on ICE @ 9/14/22

US EPA REGION 2 LABORATORY

CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY ___ PREPA-San Juan Power Plant

PROJECT LEADER _____ Thuan Tran

PROGRAM: SF ☐ :

SITE ID _____

OPERABLE UNIT _____

PROGRAM RESULTS CODE _____

Decision	RCRA ☐	RCRA ENF ☐	NPDES ☐ X	SDWA ☐	AM ☐	CAA ☐	TSCA ☐	OD ☐	FIFRA ☐	CRIMINAL ENF ☐
Unit Code Y206	D210	D307	B304	C215	B224	A305	L306	B253		

Permit #: _____PR0000698_____

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS,	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	Collection Time (24hr clock) End	Collection Date mm/dd/yy
Outfall 003	4	B	☐	1, 125-ml plastic bottle: Color	☐	0	3:21PM		9/13/2022
		B	☐	1, 125-ml plastic bottle: Metal (Zinc)	☐	02	3:21PM		9/13/2022
		B	☐	1, 125-ml plastic bottle: Turbidity	☐	0	3:21PM		9/13/2022
		B	☐	1, 1-L clear WM jar: O&G	☐	03	3:21PM		9/13/2022
Internal Outfall 603	3	B	☐	1, 1-L clear WM jar: O&G	☐	03	2:35PM		9/13/2022
		B	☐	1, 250-ml plastic bottle: TSS	☐	0	2:35PM		9/13/2022
		B	☐	1, 1-L amber glass: PCBs	☐	04	2:35PM		9/13/2022
Internal Outfall 604	3	B	☐	1, 1-L clear WM jar: O&G	☐	03	12:21PM		9/13/2022
		B	☐	1, 250-ml plastic bottle: TSS	☐	0	12:21PM		9/13/2022
		B	☐	1, 1-L amber glass: PCBs	☐	04	12:21PM		9/13/2022

COMMENTS & SPECIAL REQUIREMENTS:

Preservative Added & Checked

0=ice
1=H2SO4 pH<2
2=HNO3 pH<2
3=HCl pH<2
4=Na2S2O3
5=NaOH pH>9
6=Ascorbic Acid
7=FAS
8=ZnAc
9=NaOH pH>12
10=NH4Cl

	Time	Date
Person Assuming Responsibility for Sample(s): Thuan Tran	9:37PM	9/13/2022
Relinquished By: Thuan Tran / Received By:	10:50	9/14/22
Relinquished By: / Received By:		
Relinquished By: / Received By:		

Matrix:

A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☐ N ☐

revised 10/25/2004

US EPA REGION 2 LABORATORY

CHAIN OF CUSTODY/ FIELD DATA FORM

SURVEY NAME & LOCALITY ____ PREPA-San Juan Power Plant

PROJECT LEADER ______ Thuan Tran

PROGRAM: SF ☐ : SITE ID ______ OPERABLE UNIT ________ PROGRAM RESULTS CODE ________

Decision Unit Code	RCRA ☐	RCRA ENF ☐	NPDES ☒	SDWA ☐	AM ☐	CAA ☐	TSCA ☐	OD ☐	FIFRA ☐	CRIMINAL ENF ☐
Y206	D210	D307	B304	C215	B224	A305	L306	B253		

Permit #: _____PR0000698________

LAB ID/ FIELD ID	# OF CONTERS	MATRIX	CHECK IF SPLIT SAMPLE	DESCRIPTION & INSTRUCTIONS INCLUDING LOCATION, ESTIMATED CONCENTRATIONS, SPECIAL REPORTING LIMITS,	Res CL Checked	Preservative (circle)	Collection Time (24hr clock) Begin	End	Collection Date mm/dd/yy
Internal Outfall 605	3	B	☐	1, 1-L clear WM jar: O&G	☐	0 3		11:39AM	9/13/2022
		B	☐	1, 500-ml plastic bottle: TSS	☐	0		11:39AM	9/13/2022
	*	B	☐	1, 1-L amber glass: PCBs	☐	0 4		11:39AM	9/13/2022
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			
			☐		☐	0 1 2 3 4 5 6 7 8 9 10			

COMMENTS & SPECIAL REQUIREMENTS:

* 2-additional Bottles recv'd at 9/14/22

Preservative Added & Checked
0=ice
1=H2SO4 pH<2
2=HNO3 pH<2
3=HCl pH<2
4=Na2S2O3
5=NaOH pH>9
6=Ascorbic Acid
7=FAS
8=ZnAc
9=NaOH pH>12
10=NH4Cl

		Time	Date
	Person Assuming Responsibility for Sample(s): Thuan Tran	9:37PM	9/13/2022
Relinquished By: Thuan Tran	Received By: [signature]	10:50	9/14/22
Relinquished By:	Received By:		
Relinquished By:	Received By:		

Matrix:
A=aqueous
B=aqueous (chlorinated)
C=soil
D=sediment
E=sludge
F=multiphasic
G=solvent
H=biota
I=oil
J=other

Survey Complete? Y ☐ N ☐

Attachment #6. Analytical data for samples collected from PREPA - San Juan Power Plant inspection.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory
2890 Woodbridge Avenue
Edison , New Jersey 08837
732-906-6886 Phone
732-906-6165 Fax

October 05, 2022

Philip Cocuzza
Monitoring & Assessment Branch
LSASD/MAB
Edison, NJ 08837

RE: PREPA San Juan Power Plant - 2209016

Enclosed are the results of analyses for samples received by the laboratory on 09/14/2022. The signature below reflects the laboratory's approval of the reported results. If you have any questions concerning this report, please refer to Project Number 2209016 and contact the laboratory.

Sincerely,

John R. Bourbon
Chief, LSASD/LB

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Project Narrative:

The National Environmental Laboratory Accreditation Conference Institute (TNI) is a voluntary environmental laboratory accreditation association of State and Federal agencies. TNI established and promoted a National Environmental Laboratory Accreditation Program (NELAP) that provides a uniform set of standards for the generation of environmental data that are of known and defensible quality. The EPA Region 2 Laboratory is NELAP accredited. The Laboratory tests that are accredited have met all the requirements established under the TNI Standards.

Condition Comments

None

Comment(s):

The "Sample Analysis Date and Time" is included in the results section for any analyte with a prescribed holding time of 72 hours or less.

The results for Color are reported as "Apparent Color". The pH of the sample was confrimed between 4 and 8, therfore no pH adjustments necessary prior to Color measurement.

October 5, 2022 - Client requested additional analytes on sample 2209016-03, outfall 003. Three metals; Cu, Pb and Ni were reported from existing data.

Data Qualifier(s):

U- The analyte was not detected at or above the Reporting Limit.
J- The identification of the analyte is acceptable; the reported value is an estimate.
K- The identification of the analyte is acceptable; the reported value may be biased high.
L- The identification of the analyte is acceptable; the reported value may be biased low.
NJ- There is presumptive evidence that the analyte is present; the analyte is reported as a tentative identification. The reported value is an estimate.

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Reporting Limit(s):

The Laboratory was able to achieve the appropriate limit for each analyte requested.

SUMMARY REPORT FOR SAMPLES

Field ID	Laboratory ID	Matrix	Date Sampled	Date Received
Outfall 001	2209016-01	Aqueous	09/13/2022 14:00	09/14/2022 10:50
Outfall 002	2209016-02	Aqueous	09/13/2022 14:55	09/14/2022 10:50
Outfall 003	2209016-03	Aqueous	09/13/2022 15:21	09/14/2022 10:50
Internal Outfall 603	2209016-04	Aqueous	09/13/2022 14:35	09/14/2022 10:50
Internal Outfall 604	2209016-05	Aqueous	09/13/2022 12:21	09/14/2022 10:50
Internal Outfall 605	2209016-06	Aqueous	09/13/2022 11:39	09/14/2022 10:50

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
Region 2 Laboratory

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

SUMMARY REPORT FOR METHODS

Analysis	Method	Certification	Matrix
608.3 PCB Aroclors NPDES	EPA 608.3 SOP C-91 Rev 4.3	NELAP	Aqueous
Color	SM 2120 SOP C-47 Rev 3.6	NELAP	Aqueous
Weak Acid Dissociable [Free] Cyanide	EPA 335.4 SOP C-28 Rev 2.7		Aqueous
Mercury	EPA 245.1 SOP C-110 Rev 2.7	NELAP	Aqueous
Metals ICP TAL NPDES/DW	EPA 200.7 SOP C-109 Rev 3.6	NELAP	Aqueous
Oil & Grease	EPA 1664A SOP C-126 Rev 1.6	NELAP	Aqueous
Sulfate	EPA 300.0 SOP C-94 Rev 2.7	NELAP	Aqueous
Residue, Non-Filterable	SM 2540D SOP C-33 Rev 3.7	NELAP	Aqueous
Turbidity	EPA 180.1 SOP C-81 Rev 2.7	NELAP	Aqueous

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Outfall 001			**Sample ID: 2209016-01**			
GC - Sanitary						
Oil & Grease	---	U	6.30	mg/L	B209121	
Metals ICP						
Zinc	---	U J	20.0	ug/L	B209117	
Sanitary						
Color	5.00		5.00	Color Units	B209078	09/14/2022 11:55
Sulfate	2940		100	mg/L	B209063	
Turbidity	2.38		0.100	NTU	B209081	09/14/2022 13:50
Field ID: Outfall 002			**Sample ID: 2209016-02**			
GC - Sanitary						
Oil & Grease	---	U	5.70	mg/L	B209121	
Metals ICP						
Copper	14.4		10.0	ug/L	B209117	
Lead	---	U	8.00	ug/L	B209117	
Nickel	82.0		20.0	ug/L	B209117	
Selenium	---	U	20.0	ug/L	B209117	
Zinc	58.4		20.0	ug/L	B209117	
Mercury CVAA						
Mercury	0.068		0.050	ug/L	B209111	
Sanitary						
Color	10.0		5.00	Color Units	B209078	09/14/2022 11:55
Weak Acid Dissociable [Free] Cyanide	---	U	10.0	ug/L	B209088	
Field ID: Outfall 003			**Sample ID: 2209016-03**			
GC - Sanitary						
Oil & Grease	---	U	5.70	mg/L	B209121	
Metals ICP						
Copper	---	U	10.0	ug/L	B209117	
Lead	---	U	8.00	ug/L	B209117	

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Outfall 003			**Sample ID: 2209016-03**			
Metals ICP						
Nickel	---	U	20.0	ug/L	B209117	
Zinc	---	U	20.0	ug/L	B209117	
Sanitary						
Color	10.0		5.00	Color Units	B209078	09/14/2022 11:55
Turbidity	1.04		0.100	NTU	B209081	09/14/2022 13:50
Field ID: Internal Outfall 603			**Sample ID: 2209016-04**			
PCB Aroclors GC						
Aroclor 1016	---	U	0.030	ug/L	B209085	
Aroclor 1221	---	U	0.060	ug/L	B209085	
Aroclor 1232	---	U	0.030	ug/L	B209085	
Aroclor 1242	---	U	0.030	ug/L	B209085	
Aroclor 1248	---	U	0.030	ug/L	B209085	
Aroclor 1254	---	U	0.030	ug/L	B209085	
Aroclor 1260	---	U	0.030	ug/L	B209085	
GC - Sanitary						
Oil & Grease	---	U	5.70	mg/L	B209121	
Sanitary						
Total Suspended Solids	---	U	10.0	mg/L	B209083	
Field ID: Internal Outfall 604			**Sample ID: 2209016-05**			
PCB Aroclors GC						
Aroclor 1016	---	U	0.030	ug/L	B209085	
Aroclor 1221	---	U	0.061	ug/L	B209085	
Aroclor 1232	---	U	0.030	ug/L	B209085	
Aroclor 1242	---	U	0.030	ug/L	B209085	
Aroclor 1248	---	U	0.030	ug/L	B209085	
Aroclor 1254	---	U	0.030	ug/L	B209085	
Aroclor 1260	---	U	0.030	ug/L	B209085	
GC - Sanitary						

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Analyte	Result	Qualifier	Reporting Limit	Units	Batch	Date and Time of Analysis*
Field ID: Internal Outfall 604				**Sample ID: 2209016-05**		
GC - Sanitary						
Oil & Grease	---	U	6.00	mg/L	B209121	
Sanitary						
Total Suspended Solids	---	U	10.0	mg/L	B209083	
Field ID: Internal Outfall 605				**Sample ID: 2209016-06**		
PCB Aroclors GC						
Aroclor 1016	---	U	0.030	ug/L	B209085	
Aroclor 1221	---	U	0.060	ug/L	B209085	
Aroclor 1232	---	U	0.030	ug/L	B209085	
Aroclor 1242	---	U	0.030	ug/L	B209085	
Aroclor 1248	---	U	0.030	ug/L	B209085	
Aroclor 1254	---	U	0.030	ug/L	B209085	
Aroclor 1260	---	U	0.030	ug/L	B209085	
GC - Sanitary						
Oil & Grease	---	U	6.00	mg/L	B209121	
Sanitary						
Total Suspended Solids	---	U	10.0	mg/L	B209083	

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

PCB Aroclors GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209085									
Blank (B209085-BLK1)									
Aroclor 1016	--- U	0.031	ug/L						
Aroclor 1221	--- U	0.062	ug/L						
Aroclor 1232	--- U	0.031	ug/L						
Aroclor 1242	--- U	0.031	ug/L						
Aroclor 1248	--- U	0.031	ug/L						
Aroclor 1254	--- U	0.031	ug/L						
Aroclor 1260	--- U	0.031	ug/L						
Surrogate: TCMX	*ND*		ug/L	*0.06000*		*54.8*	*23-101*		
Surrogate: TCMX [2C]	*ND*		ug/L	*0.06000*		*54.4*	*23-101*		
Surrogate: DCB	*ND*		ug/L	*0.06000*		*46.6*	*25-107*		
Surrogate: DCB [2C]	*ND*		ug/L	*0.06000*		*43.8*	*25-107*		
LCS (B209085-BS1)									
Aroclor 1016	0.251	0.031	ug/L	0.2500		100	50-140		
Aroclor 1016 [2C]	0.276	0.031	ug/L	0.2500		110	50-140		
Aroclor 1260	0.232	0.031	ug/L	0.2500		92.8	8-140		
Aroclor 1260 [2C]	0.217	0.031	ug/L	0.2500		86.8	8-140		
Surrogate: TCMX	*0.0437*		ug/L	*0.06000*		*72.8*	*23-101*		
Surrogate: TCMX [2C]	*0.0433*		ug/L	*0.06000*		*72.1*	*23-101*		
Surrogate: DCB	*0.0280*		ug/L	*0.06000*		*46.6*	*25-107*		
Surrogate: DCB [2C]	*0.0266*		ug/L	*0.06000*		*44.4*	*25-107*		
LCS Dup (B209085-BSD1)									
Aroclor 1016	0.259	0.031	ug/L	0.2500		104	50-140	3.19	36
Aroclor 1016 [2C]	0.281	0.031	ug/L	0.2500		112	50-140	1.84	36
Aroclor 1260	0.226	0.031	ug/L	0.2500		90.2	8-140	2.77	38
Aroclor 1260 [2C]	0.219	0.031	ug/L	0.2500		87.6	8-140	0.932	38
Surrogate: TCMX	*0.0431*		ug/L	*0.06000*		*71.9*	*23-101*		
Surrogate: TCMX [2C]	*0.0439*		ug/L	*0.06000*		*73.1*	*23-101*		
Surrogate: DCB	*0.0324*		ug/L	*0.06000*		*54.0*	*25-107*		
Surrogate: DCB [2C]	*0.0300*		ug/L	*0.06000*		*50.0*	*25-107*		

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

PCB Aroclors GC - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209085									
Matrix Spike (B209085-MS1)	**Source: 2209016-06**								
Aroclor 1016	0.204	0.031	ug/L	0.2451	ND	83.1	50-140		
Aroclor 1016 [2C]	0.224	0.031	ug/L	0.2451	ND	91.6	50-140		
Aroclor 1260	0.264	0.031	ug/L	0.2451	ND	108	8-140		
Aroclor 1260 [2C]	0.171	0.031	ug/L	0.2451	ND	69.8	8-140		
Surrogate: TCMX	*0.0361*		ug/L	*0.05882*		*61.4*	*23-101*		
Surrogate: TCMX [2C]	*0.0402*		ug/L	*0.05882*		*68.3*	*23-101*		
Surrogate: DCB	*0.0446*		ug/L	*0.05882*		*75.8*	*25-107*		
Surrogate: DCB [2C]	*0.0437*		ug/L	*0.05882*		*74.2*	*25-107*		
Matrix Spike (B209085-MS2)	**Source: 2209014-01**								
Aroclor 1016	0.274	0.031	ug/L	0.2463	ND	111	50-140		
Aroclor 1016 [2C]	0.262	0.031	ug/L	0.2463	ND	106	50-140		
Aroclor 1260	0.250	0.031	ug/L	0.2463	ND	102	8-140		
Aroclor 1260 [2C]	0.160	0.031	ug/L	0.2463	ND	64.9	8-140		
Surrogate: TCMX	*0.0324*		ug/L	*0.05911*		*54.8*	*23-101*		
Surrogate: TCMX [2C]	*0.0315*		ug/L	*0.05911*		*53.3*	*23-101*		
Surrogate: DCB	*0.0481*		ug/L	*0.05911*		*81.4*	*25-107*		
Surrogate: DCB [2C]	*0.0387*		ug/L	*0.05911*		*65.5*	*25-107*		
Matrix Spike Dup (B209085-MSD1)	**Source: 2209016-06**								
Aroclor 1016	0.271	0.031	ug/L	0.2463	ND	110	50-140	28.4	36
Aroclor 1016 [2C]	0.254	0.031	ug/L	0.2463	ND	103	50-140	12.2	36
Aroclor 1260	0.218	0.031	ug/L	0.2463	ND	88.6	8-140	18.9	38
Aroclor 1260 [2C]	0.162	0.031	ug/L	0.2463	ND	65.7	8-140	5.67	38
Surrogate: TCMX	*0.0354*		ug/L	*0.05911*		*59.9*	*23-101*		
Surrogate: TCMX [2C]	*0.0357*		ug/L	*0.05911*		*60.4*	*23-101*		
Surrogate: DCB	*0.0438*		ug/L	*0.05911*		*74.2*	*25-107*		
Surrogate: DCB [2C]	*0.0393*		ug/L	*0.05911*		*66.4*	*25-107*		

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

GC - Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209121									
Blank (B209121-BLK1)									
Oil & Grease	--- U	5.00	mg/L						
LCS (B209121-BS1)									
Oil & Grease	34.4	5.00	mg/L	40.00		86	78-114		
LCS Dup (B209121-BSD1)									
Oil & Grease	37.3	5.00	mg/L	40.00		93	78-114	8	20
Matrix Spike (B209121-MS1)	**Source: 2209013-02**								
Oil & Grease	41.8	5.00	mg/L	51.28	ND	82	78-114		
Matrix Spike (B209121-MS2)	**Source: 2209014-01**								
Oil & Grease	42.2	5.00	mg/L	51.28	ND	82	78-114		
Matrix Spike (B209121-MS3)	**Source: 2209015-04**								
Oil & Grease	39.1	5.00	mg/L	45.98	ND	85	78-114		
Matrix Spike (B209121-MS4)	**Source: 2209016-02**								
Oil & Grease	42.2	5.00	mg/L	48.78	ND	87	78-114		

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Metals ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209117									
Blank (B209117-BLK1)									
Antimony	--- U	20.0	ug/L						
Arsenic	--- U	8.00	ug/L						
Beryllium	--- U	3.00	ug/L						
Cadmium	--- U	3.00	ug/L						
Chromium	--- U	5.00	ug/L						
Copper	--- U	10.0	ug/L						
Iron	--- U	50.0	ug/L						
Lead	--- U	8.00	ug/L						
Nickel	--- U	20.0	ug/L						
Selenium	--- U	20.0	ug/L						
Silver	--- U	5.00	ug/L						
Thallium	--- U	20.0	ug/L						
Zinc	--- U	20.0	ug/L						
LCS (B209117-BS1)									
Antimony	188	20.0	ug/L	200.0		94.2	85-115		
Arsenic	185	8.00	ug/L	200.0		92.7	85-115		
Beryllium	190	3.00	ug/L	200.0		95.1	85-115		
Cadmium	190	3.00	ug/L	200.0		95.0	85-115		
Chromium	192	5.00	ug/L	200.0		95.9	85-115		
Copper	190	10.0	ug/L	200.0		94.9	85-115		
Iron	4770	50.0	ug/L	5000		95.5	85-115		
Lead	191	8.00	ug/L	200.0		95.6	85-115		
Nickel	191	20.0	ug/L	200.0		95.5	85-115		
Selenium	183	20.0	ug/L	200.0		91.4	85-115		
Silver	191	5.00	ug/L	200.0		95.4	85-115		
Thallium	187	20.0	ug/L	200.0		93.6	85-115		
Zinc	188	20.0	ug/L	200.0		94.2	85-115		

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Metals ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209117									
LCS Dup (B209117-BSD1)									
Antimony	191	20.0	ug/L	200.0		95.3	85-115	1.17	20
Arsenic	186	8.00	ug/L	200.0		93.2	85-115	0.527	20
Beryllium	196	3.00	ug/L	200.0		98.1	85-115	3.12	20
Cadmium	192	3.00	ug/L	200.0		95.8	85-115	0.755	20
Chromium	194	5.00	ug/L	200.0		96.8	85-115	0.944	20
Copper	192	10.0	ug/L	200.0		95.9	85-115	1.05	20
Iron	4920	50.0	ug/L	5000		98.5	85-115	3.12	20
Lead	194	8.00	ug/L	200.0		96.9	85-115	1.29	20
Nickel	192	20.0	ug/L	200.0		96.1	85-115	0.668	20
Selenium	188	20.0	ug/L	200.0		94.1	85-115	2.90	20
Silver	192	5.00	ug/L	200.0		96.1	85-115	0.783	20
Thallium	190	20.0	ug/L	200.0		94.8	85-115	1.37	20
Zinc	190	20.0	ug/L	200.0		95.0	85-115	0.830	20
Matrix Spike (B209117-MS1)	**Source: 2209013-02**								
Cadmium	166	3.00	ug/L	200.0	ND	82.8	80-120		
Lead	175	8.00	ug/L	200.0	2.40	86.4	80-120		
Nickel	193	20.0	ug/L	200.0	19.0	87.2	80-120		
Thallium	169	20.0	ug/L	200.0	7.03	81.1	80-120		
Matrix Spike (B209117-MS2)	**Source: 2209014-01**								
Arsenic	196	8.00	ug/L	200.0	3.57	96.0	80-120		
Cadmium	178	3.00	ug/L	200.0	ND	88.8	80-120		
Copper	213	10.0	ug/L	200.0	3.06	105	80-120		
Nickel	188	20.0	ug/L	200.0	8.85	89.6	80-120		
Silver	201	5.00	ug/L	200.0	ND	101	80-120		
Thallium	170	20.0	ug/L	200.0	7.07	81.4	80-120		

NOTE: The results recorded in this report relate only to the samples as received on the date and at the time noted

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Metals ICP - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209117									
Matrix Spike (B209117-MS3)	**Source: 2209015-01**								
Copper	289	10.0	ug/L	200.0	ND	145	80-120		
Zinc	146	20.0	ug/L	200.0	ND	72.9	80-120		
Matrix Spike (B209117-MS4)	**Source: 2209016-01**								
Zinc	137	20.0	ug/L	200.0	1.99	67.5	80-120		
Matrix Spike Dup (B209117-MSD1)	**Source: 2209013-02**								
Cadmium	184	15.0	ug/L	200.0	ND	91.9	80-120	10.4	10
Lead	194	40.0	ug/L	200.0	ND	97.1	80-120	10.3	10
Nickel	216	100	ug/L	200.0	19.0	98.8	80-120	11.3	10
Thallium	200	100	ug/L	200.0	ND	99.8	80-120	16.5	10
Matrix Spike Dup (B209117-MSD2)	**Source: 2209014-01**								
Arsenic	187	40.0	ug/L	200.0	ND	93.4	80-120	4.55	10
Cadmium	183	15.0	ug/L	200.0	ND	91.4	80-120	2.84	10
Copper	204	50.0	ug/L	200.0	ND	102	80-120	4.63	10
Nickel	190	100	ug/L	200.0	ND	95.0	80-120	1.08	10
Silver	187	25.0	ug/L	200.0	ND	93.4	80-120	7.48	10
Thallium	198	100	ug/L	200.0	ND	98.8	80-120	15.1	10
Matrix Spike Dup (B209117-MSD3)	**Source: 2209015-01**								
Copper	248	50.0	ug/L	200.0	ND	124	80-120	15.4	10
Zinc	190	100	ug/L	200.0	ND	94.8	80-120	26.2	10
Matrix Spike Dup (B209117-MSD4)	**Source: 2209016-01**								
Zinc	182	100	ug/L	200.0	ND	91.0	80-120	28.3	10

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Mercury CVAA - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209111									
Blank (B209111-BLK1)									
Mercury	--- U	0.050	ug/L						
LCS (B209111-BS1)									
Mercury	0.971	0.050	ug/L	1.000		97.1	85-115		
LCS Dup (B209111-BSD1)									
Mercury	0.931	0.050	ug/L	1.000		93.1	85-115	4.21	20
Matrix Spike (B209111-MS2)	**Source: 2209013-04**								
Mercury	0.928	0.050	ug/L	1.000	ND	92.8	80-120		
Matrix Spike (B209111-MS3)	**Source: 2209014-01**								
Mercury	0.902	0.050	ug/L	1.000	ND	90.2	80-120		
Matrix Spike (B209111-MS4)	**Source: 2209016-02**								
Mercury	0.990	0.050	ug/L	1.000	0.068	92.2	80-120		

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209063									
LCS (B209063-BS1)									
Sulfate	12.8	2.00	mg/L	12.50		102	90-110		
LCS Dup (B209063-BSD1)									
Sulfate	12.8	2.00	mg/L	12.50		102	90-110	0	20
Matrix Spike (B209063-MS1)	**Source: 2209018-02**								
Sulfate	20.8	1.00	mg/L	20.00	0.0369	104	90-110		
Matrix Spike (B209063-MS3)	**Source: 2209016-01**								
Sulfate	2900	100	mg/L	20.00	2940	NR	90-110		
Batch B209078									
Blank (B209078-BLK1)									
Color	<5	5.00	Color Units						
LCS (B209078-BS1)									
Color	40.0	10.0	Color Units	40.00		100	85-115		
LCS Dup (B209078-BSD1)									
Color	40.0	10.0	Color Units	40.00		100	85-115	0.00	20
Duplicate (B209078-DUP1)	**Source: 2209016-01**								
Color	5.00	5.00	Color Units		5.00			0.00	20
Batch B209081									
LCS (B209081-BS1)									
Turbidity	19.3	0.100	NTU	19.90		97.0	90-110		

NOTE: The results recorded in this report relate only to the samples as received on the date and at the time noted

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209081									
LCS Dup (B209081-BSD1)									
Turbidity	19.3	0.100	NTU	19.90		97.0	90-110	0.00	20
Duplicate (B209081-DUP1)	**Source: 2209014-01**								
Turbidity	0.735	0.100	NTU		0.773			5.04	20
Batch B209083									
Blank (B209083-BLK1)									
Residue, Non-Filterable	--- U	10.0	mg/L						
LCS (B209083-BS1)									
Residue, Non-Filterable	55.0	10.0	mg/L	55.10		99.8	85-115		
LCS Dup (B209083-BSD1)									
Residue, Non-Filterable	55.0	10.0	mg/L	55.10		99.8	85-115	0.00	20
Duplicate (B209083-DUP1)	**Source: 2209014-04**								
Residue, Non-Filterable	4.00	10.0	mg/L		7.00			54.5	20
Batch B209088									
Blank (B209088-BLK1)									
Weak Acid Dissociable [Free] Cyanide	--- U	10.0	ug/L						
Blank (B209088-BLK2)									
Weak Acid Dissociable [Free] Cyanide	--- U	10.0	ug/L						

Final Report

Project: PREPA San Juan Power Plant - 2209016

Project Number: 2209016

Sanitary - Quality Control

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch B209088									
LCS (B209088-BS1)									
Cyanide, Total	477	10.0	ug/L	440.0		108	85-115		
LCS Dup (B209088-BSD1)									
Cyanide, Total	474	10.0	ug/L	440.0		108	85-115	0.6	20
Matrix Spike (B209088-MS1)	**Source: 2209014-01**								
Cyanide, Total	484	10.0	ug/L	500.0	0.747	97	80-120		
Matrix Spike (B209088-MS2)	**Source: 2209016-02**								
Cyanide, Total	482	10.0	ug/L	500.0	0.304	96	80-120		