

March 25, 2021

White Paper on Environmental Compliance Issues at Puerto Rico Electric Power Authority Generation Facilities



MEMORANDUM

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TO Puerto Rico Electric Power Authority

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DATE March 25, 2021

SUBJECT White Paper on Environmental Compliance Issues at Puerto Rico Electric Power Authority Generation Facilities

I. INTRODUCTION

This white paper is intended to provide a high-level overview of environmental compliance issues and programs affecting Puerto Rico Electric Power Authority's ("PREPA") generation facilities, which are the subject of a request for proposals ("RFP") process to manage, operate, maintain, administer the asset management of, and decommission, where applicable, certain base-load generation plants and gas turbine peaking plants. This white paper reflects the status of environmental issues at PREPA's generation facilities to the best of our knowledge at the time of drafting. Documents referred to in this white paper are generally located in the "Environmental Reports and Regulatory Matters" and "Permits and Approvals" folders in the Generation section of the electronic Data Room created in connection with the RFP (the "Data Room"). Supplements to this white paper may be provided should additional relevant information become available.

This white paper discusses environmental requirements and compliance at PREPA's generation facilities under various federal and state laws and regulations, as well as under the 1999 consent decree between PREPA and the United States. Note that this white paper is not intended to identify all instances of potential noncompliance. The environmental compliance programs covered include those related to: Clean Air Act compliance and air quality; Clean Water Act compliance and water quality; spill prevention, control, and countermeasure planning; underground injection control facilities; Safe Drinking Water Act compliance; Emergency Planning and Community Right-to-Know Act reporting; hazardous waste regulated under the Resource Conservation and Recovery Act; underground storage tanks; used oil; biomedical waste; polychlorinated biphenyls regulated under the Toxic Substances Control Act; asbestos abatement; lead mitigation; issues related to contamination and the Comprehensive Environmental Response, Compensation, and Liability Act; recycling; control of erosion and prevention of sedimentation; and prior PREPA due diligence. This white paper does not cover environmental issues associated with the use of federal funds, e.g., funds received from the Federal Emergency Management Agency ("FEMA") for disaster recovery efforts. This white paper also highlights various permits held by PREPA. For information regarding the transferability of these permits, we recommend consulting the terms of the permit and requirements of the appropriate statute and regulations.

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This white paper may not be construed as giving legal advice and any statement made within the document may not be used against PREPA, the Puerto Rico Public-Private Partnerships Authority, the Government of Puerto Rico's Central Office of Recovery, Reconstruction and Resiliency, any other agency or instrumentality of the Government of Puerto Rico, Hogan Lovells US LLP and Hogan Lovells International LLP, and/or the authors. Each party participating in the RFP ("Private Party") is encouraged to seek legal advice regarding the topics in this white paper. In the event that there are inconsistencies between this white paper and the Partnership Contract (as defined in the RFP), the provisions of the Partnership Contract will control.

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I. 1999 Consent Decree and 2004 Modification

A. Background and Overview of Consent Decree Provisions

On October 27, 1993, the United States of America (“United States”), through the United States Department of Justice (“DOJ”) and the United States Environmental Protection Agency (“EPA”), filed a complaint against PREPA in the United States District Court for the District of Puerto Rico (the “court”) (Civil Action No. 93-2527 CCC). The complaint alleged environmental violations by PREPA under multiple federal environmental statutes, including those relating to air, water, hazardous substances, and waste at the Palo Seco, San Juan, Aguirre, and Costa Sur baseload generation facilities, and the non-generation facility known as the Monacillos Transmission Center.

On March 19, 1999, the court entered a consent decree in the case (“1999 Consent Decree”), which resolved the claims alleged in the complaint. The 1999 Consent Decree required PREPA to implement detailed compliance programs, including:

- Ten different Clean Air Act (“CAA”) compliance programs related to PREPA’s operation and maintenance of its baseload oil-fired power units;
- A Clean Water Act compliance program;
- An Oil Pollution Prevention compliance program;
- An Emergency Planning and Community Right-to-Know Act (“EPCRA”) compliance program;
- A Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”) Section 103 and EPCRA Section 304 compliance program;
- An Underground Storage Tank compliance program;
- An Environmental Review Contractor program;
- An Independent Air Compliance Auditor program; and
- Programs to implement additional environmental projects, including a Land Acquisition Project and a Fire Department Hazmat Training Program.

On September 9, 2004, the court entered a Consent Decree modification (“2004 Modification”). The 2004 Modification established additional air emissions and fuel-related requirements for PREPA’s generation facilities, imposed civil penalties, and required PREPA to pay additional funds into the Environmental Review Contractor Program and Land Acquisition Project fund. The 2004 Modification included provisions requiring a new Nitrogen Oxide (“NOx”) Emission Reduction Program at PREPA’s baseload facilities, as well as provisions requiring the use of lower sulfur fuels, among other things. The Consent Decree has not been modified since the 2004 Modification. Both the 1999 Consent Decree and the 2004 Modification (together, “Consent Decree”) are in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→1999 Consent Decree Folder in the Data Room.

While most of the Consent Decree programs primarily apply to PREPA’s four steam baseload generation plants (San Juan, Palo Seco, Aguirre, Costa Sur), there are certain limited exceptions. For instance, the 2004 Modification requires PREPA to apply a specific EPA interpretation regarding Method 9 Opacity readings to residual (i.e., #4, 5, or 6) fuel oil-fired generating units, including units not subject to the Consent Decree. In addition, certain programs apply to the Monacillos Transmission Center.

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The Consent Decree requires that, if PREPA proposes to sell or transfer some or all of the real property or operations subject to the Consent Decree to a purchaser or transferee in interest (for instance, potentially, the Private Party), PREPA must provide at least 30 days' advance notice to DOJ and EPA Region 2 of such purchaser or transferee in interest prior to the sale or transfer. PREPA is also required to provide a copy of the Consent Decree to any person or entity to whom PREPA intends to make any such conveyance at least 30 days prior to the conveyance and is required to condition such conveyance upon agreement by the purchaser or transferee to be subject to the obligations of the Consent Decree and the jurisdiction of the court. PREPA must concurrently verify to DOJ and EPA Region 2 that such notice has been given. The Private Party should review the terms of the 1999 Consent Decree and the 2004 Modification for additional information. In addition to complying with the provisions noted above, the Private Party's acquisition of real property or operations subject to the Consent Decree would likely need to be approved by the court, and the Private Party must have the technical and financial wherewithal to complete the obligations undertaken pursuant to the Consent Decree.

Among other things, the Consent Decree contains a number of monitoring and operation and maintenance requirements with which the Private Party will be required to abide, including environmental outage requirements. In terms of outages, the Consent Decree requires that each subject unit be taken out of service for environmental outage and water washing at least once every 18 months. The Consent Decree also contains a number of reporting requirements and employee training requirements, and requires that any PREPA contractors or subcontractors, and thus any contractors or subcontractors of the Private Party, abide by the terms of the Consent Decree.

B. Renegotiation of the Consent Decree and Expected Substance of Draft Modified Consent Decree

PREPA has successfully implemented many of the compliance programs required by the Consent Decree. Accordingly, PREPA has sought the United States' agreement that PREPA has fully implemented those programs and that they can be terminated. PREPA documented its completion of those programs in a request to EPA for partial termination. PREPA's 2014 request for partial termination is included in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→1999 Consent Decree Folder in the Data Room.

PREPA's requests for partial termination spurred negotiations with the United States regarding the Consent Decree to eliminate provisions PREPA has already completed and to streamline remaining Consent Decree provisions. Based on the current status of the negotiations, PREPA expects that a draft of the renegotiated Consent Decree (the "Modified Consent Decree") would retain only Clean Air Act programs, and that the scope of those programs would be significantly reduced and simplified. The only non-Clean Air Act program that PREPA expects to be retained in a draft Modified Consent Decree is the Land Acquisition Project. The Land Acquisition Project is not directly associated with either generation or non-generation facilities, and is an additional environmental project designed to acquire and restore land in the Las Cucharillas marsh area.

C. Status of Negotiations with the United States, Next Steps, and Procedure for Approval

The United States and PREPA have exchanged proposals for the draft Modified Consent Decree and are close to reaching agreement with very few issues remaining.

PREPA anticipates that a meeting with the United States (DOJ and EPA) to negotiate and resolve these remaining issues will likely occur sometime in 2021. Once agreement is reached on the remaining issues, PREPA and the United States are expected to begin discussions with the intervenor in the case, Comunidades Unidas Contra la Contaminación (“CUCCo”), regarding the proposed modifications to the Consent Decree. Such negotiations may result in additional changes to the draft Modified Consent Decree.

After these discussions are completed, the United States is expected to lodge the Modified Consent Decree with the court pending public notice and comment. In accordance with DOJ policy,¹ the DOJ would publish in the *Federal Register* a notice of the lodging of the Modified Consent Decree, which publication would initiate a 30-day public comment period. Before the United States can seek entry of the Modified Consent Decree, DOJ must consider any written comments it receives related to the proposed settlement and determine whether the proposed settlement is in the public interest in light of those comments.² When the original 1999 Consent Decree was filed, five entities submitted public comments, the most substantive of which were submitted by CUCCo and the United States Fish and Wildlife Service. As the intervenor, CUCCo may submit objections to the court regarding various provisions in the Modified Consent Decree. Other interested parties may also submit comments and may also try to intervene.

After the public comment period, should the United States continue to view the Modified Consent Decree as in the public interest, it would seek the court’s approval of the settlement. If the public comments cause it to think changes to the Modified Consent Decree are warranted, the United States and PREPA would renegotiate the affected provisions of the Modified Consent Decree, lodge the renegotiated Modified Consent Decree with the court, and seek its entry.

Following the procedures identified above, the court will make a decision on whether to approve the Modified Consent Decree. It is possible that a hearing could be scheduled if the court determines that fairness requires it; however, such a hearing is within the court’s discretion and is not required. The court did not require such a hearing when the 1999 Consent Decree was originally approved.

Note that the Consent Decree can only be modified by the written agreement of both the United States and PREPA (or their successors or assigns) and the approval of the court.

¹ 28 C.F.R. § 50.7.

² 28 C.F.R. § 50.7(b).

D. Noncompliance with the Consent Decree

a. Stipulated Penalties Paid Under Clean Air Act and Clean Water Act Compliance Programs

In general, noncompliance under the Consent Decree is covered by stipulated penalties. The Consent Decree describes the amount of penalty for various events of noncompliance. PREPA is required to self-assess and pay stipulated penalties to the United States without prior demand for payment. If PREPA makes timely payment, PREPA benefits from a 50% discount off the applicable stipulated penalty.

i. Clean Air Act Compliance Program

While PREPA has completed most of the Consent Decree requirements, PREPA continues to have deviations associated with certain elements of the Clean Air Act Compliance Programs, particularly opacity deviations. These deviations primarily occur with start-up and shutdown processes. For instance, PREPA paid \$5,900, \$9,750, \$10,350, and \$3,900 in stipulated penalties for Q1, Q2, Q3, and Q4 of 2020, respectively, for deviations under the air portion of the Consent Decree. These payments correspond to 96 deviations in Q1, 183 deviations in Q2, 175 deviations in Q3, and 74 deviations in Q4. In 2019 and 2018, PREPA paid a total of \$26,150 and \$16,900 in stipulated penalties under the air program, respectively. The reports to EPA summarizing the deviations and stipulated penalties paid for each plant are included in the Generation→ Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→ 1999 Consent Decree Folder in the Data Room.

Note that the EPA Caribbean Environmental Protection Division conducts quarterly inspections to evaluate compliance with the Clean Air Act provisions in the Consent Decree, which include fuel sampling tests and visible emissions/opacity readings. The reports for these inspections are located in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→ Regulatory Matters→ Air Compliance→ EPA Inspection Reports Folders in the Data Room.

ii. Clean Water Act Compliance Program

PREPA also has paid stipulated penalties under the Clean Water Act Compliance Program in the last several years. For instance, PREPA paid \$2,400, \$4,437.50, and \$4,362.50 in stipulated penalties for Q1, Q2, and Q3 of 2020, respectively, for deviations under the water portion of the Consent Decree, as described below. These payments correspond to 12 deviations in Q1, 19 deviations in Q2, and 19 deviations in Q3. In 2019 and 2018, PREPA paid a total of \$13,750 and \$27,725 in stipulated penalties under the water program, respectively. These payments corresponded to 61 deviations in 2019³ and 95 deviations in 2018.

Of the 190 deviations in this time frame (Q1 2018 – Q3 2020), 124 were associated with the San Juan Power Plant. According to the quarterly reports submitted to EPA under the Clean Water

³ Note that for Q3 of 2019, the stipulated penalties report states that there are 0 deviations, but that \$3,675 in stipulated penalties was paid for San Juan. In fact, there were 16 deviations for San Juan during that period, and the stipulated penalties report was in error.

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Act Compliance Program, the San Juan exceedances were primarily related to fecal coliform, temperature, copper, nickel, pH, and dissolved oxygen, although additional exceedances related to additional pollutants. Outfalls 002 and 003⁴ at San Juan were primarily responsible for these deviations, but Outfall 001 experienced several deviations as well.

Palo Seco, Aguirre, and Costa Sur experienced significantly fewer deviations, with 31 deviations, 33 deviations, and 2 deviations, respectively, during this timeframe. More details regarding the exceedances experienced by each plant are provided in the Consent Decree Clean Water Act Compliance Program quarterly reports submitted by PREPA to EPA, which are in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→1999 Consent Decree Folder in the Data Room.

b. Testing Required under NOx Emission Reduction Program

The NOx Emission Reduction Program applies to certain units at Costa Sur, Aguirre, and Palo Seco, but does not apply to the San Juan Power Plant. Due to a number of factors, over the last five years, PREPA has been unable to consistently conduct NOx testing on an annual basis as required by the 2004 Modification. At a high level, a combination of plant outages and limitations, natural disasters, and testing contracting difficulties have prevented PREPA from conducting these tests. Because the testing must be completed at high loads (75%, 85%, and baseload), if PREPA's units are operating at limited loads, the testing cannot be completed.

In July 2020, the EPA requested that PREPA provide a summary of when PREPA performed the last two annual NOx tests under the Consent Decree, explain why PREPA could not complete the tests where applicable, and provide a schedule for when the tests will be completed.

In response, on October 8, 2020, PREPA provided information summarizing the testing status of the units to EPA:

⁴ Generally speaking, outfalls are points at which discharges to bodies of water occur.

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Plant / Unit	Date of Most Recent NOx Test	Date of Penultimate NOx Test	Schedule NOx Tests (as reported to EPA on October 8, 2020)	Information on testing as of March 2021
Costa Sur Unit 5	Aug. 18-19, 2016	March 1, 2015	Week of Oct. 13, 2020	Unable to complete testing in October 2020 as planned due to availability restrictions at Aguirre. PREPA is working to line up a contractor for testing in Q2 of 2021.
Costa Sur Unit 6	March 14, 2017	September 7-8, 2016	N/A (Out-of-Service)	Costa Sur Unit 6 returned to service on February 12, 2021. PREPA is working to line up a contractor for testing in Q2 of 2021.
Aguirre Unit 1	March 20, 23-24, 2017	December 7, 2016	Week of Oct. 5, 2020	Testing conducted at 75% and 85% load, but unable to complete testing in October 2020 as planned due to unit trip and limited load. PREPA is working to line up a contractor for testing in Q2 of 2021; however, Aguirre 1 went out-of-service for an environmental outage January 31, 2021, and so completion of testing may not be possible until a later date.
Aguirre Unit 2	March 28, 2017*	April 7-9, 2015	Week of Oct. 5, 2020	Unable to complete testing in October 2020 as planned due to unit trip and limited load. PREPA is working to line up a contractor for testing in Q2 of 2021.
Palo Seco Unit 1	April 21, 2016	December 21-22, 2015	N/A (Out-of-Service)	N/A (Out-of-Service) ⁵
Palo Seco Unit 2	April 20, 2016	January 28-29, 2015	N/A (Out-of-Service)	N/A (Out-of-Service) ⁶
Palo Seco Unit 3	Aug. 9, 2016	December 9, 2015	Environmental Outage	Unit is undergoing an environmental outage. ⁷ PREPA is hoping to be able to line up a contractor for testing in Q2 of 2021.
Palo Seco Unit 4	Jan. 26, 2015	April 25, 2013	Week of Oct. 19, 2020	Unable to complete testing in October 2020 as planned due to load limitations at the unit. Unit underwent environmental outage, and returned to service on February 2, 2021. PREPA is working to line up a contractor for testing in Q2 of 2021.
Note: *Aguirre Unit 2 was tested on this date; however, the testing was only conducted at 75% load because the unit tripped.				

⁵ Palo Seco Unit 1 has been out-of-service since August 1, 2020 due to a generator failure, and is not expected to return to service until sometime in 2021.

⁶ Palo Seco Unit 2 has been out-of-service since December 12, 2016.

⁷ Palo Seco Unit 3 was taken out-of-service as of September 19, 2020 for a mandatory environmental outage, and is expect to be out-of-service until approximately mid-March 2021.

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The NOx reports for the testing noted above are provided in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→1999 Consent Decree Folder in the Data Room. As can be seen in the above table, NOx testing was not completed for any of the units in 2018, 2019 or 2020, and for many of the units it was not completed for 2017. While PREPA attempted to complete NOx testing in October 2020, load limitations and trip at Aguirre prevented that testing from being completed. With such limitations at Aguirre, PREPA could not switch Costa Sur Unit 5 to fuel oil for the purpose of testing, as doing so would risk a unit trip. Load limitations at Palo Seco Unit 4 also prevented completion of testing. PREPA was unable to reschedule this testing before the end of 2020. As noted above, PREPA is currently in the process of lining up a contractor to conduct the testing in Q1 or Q2 of 2021.

In its October 8, 2020 response to EPA, PREPA identified the following factors as contributing to its inability to conduct the annual NOx testing up until that point:

“PREPA has experienced various delays in completing the NOx testing beginning in 2017-2018 with Hurricanes Irma and Maria, which struck in September 2017. In October 2017, following the hurricanes, PREPA claimed *force majeure* under the 1999 Consent Decree with regards to the NOx testing requirement. As recognized by EPA in granting PREPA a series of no-action assurances extending into the summer of 2018, it took nearly a year to restore PREPA’s core infrastructure. Even following completion of much of the repair work, PREPA faced a very large backlog of testing and reporting requirements further complicated by a cyberattack on PREPA’s system. In 2019 and beyond, these challenges were compounded by difficulties in securing a contractor to conduct the required testing. In 2020, PREPA has experienced additional challenges, including catastrophic earthquakes that rendered inoperable the Costa Sur Power Plant units. As noted below, Costa Sur Unit 5 just recently came back online in August 2020. Costa Sur Unit 6 is currently anticipated to return to service by approximately December 18, 2020.

PREPA’s other units have also experienced outages and limitations that have prevented NOx testing from being conducted in certain years. For instance, Aguirre Unit 2 was out-of-service during 2016, and was again out-of-service for over a year for the majority of 2019 and into 2020. And in 2018, both of the Aguirre Units were able to operate only at limited loads for much of the year due to the hurricanes.

The Palo Seco units have also experienced significant outages since 2017 that have prevented or complicated the scheduling of NOx testing. As EPA may recall, even prior to the hurricanes, Palo Seco experienced structural issues and the units were taken out-of-service for a period of time. Following the hurricanes, PREPA worked to bring the various units back online to meet demand, but with the exception of Palo Seco 3, the units have experienced significant mechanical issues and forced outages in recent years. Palo Seco Unit 4 was also out-of-service in 2016, which explains why NOx testing was not conducted in that year for that unit.”⁸

By email dated February 2, 2021, EPA requested that PREPA confirm that the NOx tests that PREPA had expected to complete in October 2020 had in fact been conducted, and to provide

⁸ Although PREPA had anticipated in its response to EPA that Costa Sur Unit 6 would return to service in December 2020, the unit did not in fact return to service until February 12, 2021.

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the associated testing report. If the testing had not been conducted, EPA requested that PREPA provide the status of the testing efforts.

On March 10, 2021, PREPA informed EPA that the NOx test schedule had not been completed as planned, and replied with the following status for each unit:

- Aguirre Unit 1: NOx test performed at 75% and 85% load, but remaining test run at 100% load could not be completed due to a sudden unit trip. PREPA has not received the draft report from the contractor at this time.
- Aguirre Unit 2: NOx test was not performed due to a sudden unit trip.
- Palo Seco Unit 3: NOx test not performed due to unit being on environmental outage.
- Palo Seco Unit 4: NOx test not performed due to load limitations. Unit limited to ~60% capacity and runs are required to be conducted at 75%, 85%, and 100% capacity.
- Costa Sur Unit 5: NOx test was not performed, because PREPA was unable to conduct fuel switching to Bunker C fuel due to a high risk of unit trip and instability on the system.
- Costa Sur Unit 6: NOx test was not performed because the unit was out of service until mid-February 2021 due to repairs from earthquake damage and environmental outage.

PREPA further explained that it was experiencing significant delays in rescheduling testing, and that PREPA's status as a governmental entity with an intricate procurement system has limited its ability to secure a testing contractor within the desired timeframe. PREPA noted that it was continuing its efforts to complete the testing as soon as possible.

c. **Force Majeure Claims**

PREPA has submitted multiple force majeure claims over the last 5 years. These include force majeure claims following the 2017 hurricanes and the 2020 earthquakes, but also multiple instances in which PREPA claimed force majeure with respect to the environmental outage and water-washing requirements of the Consent Decree due to the fact that it did not have enough reserve power in order to take the subject units out of service. The Consent Decree currently requires PREPA to take the subject units out of service at least once every 18 months for environmental outage and water washing. These outages typically last from 6-12 weeks. The documentation for these force majeure claims are in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→1999 Consent Decree folder in the Data Room.

The most expansive of the force majeure requests related to the 2017 hurricanes. On October 5, 2017, PREPA claimed force majeure under the Consent Decree due to the impacts of the hurricanes. PREPA indicated in the force majeure notification that it may not be able to comply with the Consent Decree for at least several months. On October 25, 2017, EPA responded to PREPA's notification. EPA recognized the historic and catastrophic damage caused by the hurricanes. However, EPA claimed that PREPA's force majeure notice did not identify any specific delay in complying with any particular provision of the Consent Decree, and thus no response from the United States was required under the Consent Decree (i.e., a response stating whether the United States agreed with the force majeure and providing the length of any extension). The letter stated that PREPA should provide more specific notifications in the future, and that the United States would respond to them on a case-by-case basis. PREPA responded on November 3, 2017, stressing the degree of damage to its system, explaining that it was claiming force majeure with respect to the

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Consent Decree in its entirety, and providing an extensive list of specific provisions for which it was claiming force majeure, including the provisions related to reporting and NO_x testing. PREPA reiterated its statement that PREPA would be unable to comply with the Consent Decree for at least several months. However, the United States did not respond to the November 3, 2017 notification, and thus neither granted nor denied PREPA's force majeure request. For the Clean Air Act Compliance Programs, PREPA did not pay any stipulated penalties for Q4 2017, and noted that this was due to the hurricanes.

PREPA submitted its force majeure requests in parallel to a request for no action assurance ("NAA") from EPA covering a variety of Clean Air Act requirements (see below for a more detailed discussion). EPA granted the NAA to PREPA for various requirements from October 6, 2017 through July 31, 2018. The deadlines for some of the reporting obligations extended beyond July 31, 2018, with a few not due until October 1, 2018.

The United States would be hard pressed to suggest that the hurricanes do not qualify as a force majeure event, and it would also be difficult to argue that the period for force majeure should be of shorter duration than that for the NAA. Thus, while the force majeure request was not affirmatively granted by the government, it is unlikely that the government will seek penalties for the period for which PREPA was covered by the NAA.

On January 14, 2020, PREPA again claimed force majeure under the Consent Decree due to the impacts of a series of large earthquakes, including a very large earthquake that rendered the Costa Sur Power Plant inoperable for months. EPA asked PREPA several follow-up questions regarding the force majeure request, following which PREPA narrowed the scope of its force majeure claim. By letter dated February 26, 2021, EPA granted PREPA's narrowed force majeure claim.

PREPA's force majeure communications with EPA are located in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→1999 Consent Decree folder in the Data Room.

II. Clean Air Act

This section of the white paper discusses regulatory requirements and potential noncompliance related to air quality and the Clean Air Act. It first discusses the NAA granted to PREPA by EPA related to air noncompliance resulting from Hurricanes Irma and Maria (the "Hurricane NAA"). It then discusses other potential PREPA noncompliance and regulatory requirements associated with other major Clean Air Act programs, including the Mercury and Air Toxics Standard ("MATS"), the sulfur dioxide ("SO₂") National Ambient Air Quality Standard ("NAAQS"), greenhouse gas regulations, Prevention of Significant Deterioration ("PSD") program requirements, and Title V permitting requirements, among other things.

A. No Action Assurance Related to Hurricanes Irma and Maria

Hurricanes Irma and Maria struck Puerto Rico on September 6 and 20, 2017, respectively, wreaking devastation and destruction across the island, including to PREPA's system. EPA granted PREPA the Hurricane NAA for certain Clean Air Act requirements for deviations caused by the

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hurricanes. The Hurricane NAA provided assurance that EPA would not enforce against certain air noncompliance related to Hurricanes Irma and Maria, including noncompliance related to:

- Emission limits (including but not limited to opacity limits) from operating PREPA's electric generating units at high or low load output levels necessitated by the circumstances;
- Operation in excess of operating hours and fuel restrictions;
- Unit and/or control equipment malfunctions, shutdowns, and restarts;
- Disruptions in fuel or material supplies (e.g., demineralized water for steam injection);
- Certain fuel-related issues;
- Compliance with MATS, including MATS heat input limits;
- Shutdown or bypass of control equipment to shed parasitic load;
- Inoperable or damaged process, production, control, or monitoring equipment;
- Temporary operation of mobile diesel generators to restore power and start units and auxiliary equipment; and
- Reporting requirements.

PREPA's request for the Hurricane NAA (and requests for extensions of the Hurricane NAA), as well as the Hurricane NAA (and associated extensions) issued by EPA in response to PREPA's requests, are included in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→No Action Assurances folder in the Data Room.

The original Hurricane NAA was issued on October 6, 2017, and it was subsequently modified and extended a number of times. In general, with each extension, PREPA requested a Hurricane NAA that covered a narrower scope of compliance issues than the prior Hurricane NAA to reflect improving system conditions as the recovery effort was underway. The Private Party should thus look to the terms of each Hurricane NAA extension to identify the applicable expiration dates for specific Clean Air Act requirements. The final Hurricane NAA extension was issued by EPA on June 29, 2018. This final Hurricane NAA extension expired on July 31, 2018, but established a few deadlines for PREPA compliance after July 31, 2018. For instance, most of PREPA's overdue reports were due 30 days following the expiration of the Hurricane NAA (i.e., they were due on August 30, 2018). And, for certain limited reporting requirements, the deadline to submit the report was 60 days after testing for the relevant generating unit was completed, but no later than October 1, 2018.⁹ In addition, the Hurricane NAA was extended for MATS testing deadlines at Aguirre Unit 2 until August 31, 2018.

While the Hurricane NAA covers much of PREPA's Clean Air Act noncompliance in the months following the hurricanes, there are still potential issues not covered by the Hurricane NAA, including:

MATS testing not conducted by deadlines in the Hurricane NAA:

Most of the MATS testing requirements covered by the Hurricane NAA were due by July 31, 2018. The exception was for MATS testing at Aguirre Unit 2, for which the Hurricane NAA was extended until August 31, 2018. However, PREPA did not conduct much of this MATS testing until November 2018 or later—after the Hurricane NAA coverage had expired. Testing that occurred in

⁹ On September 22, 2017, EPA issued another no action assurance that covered certain mobile power generators used for hurricane recovery efforts in Puerto Rico. EPA issued an amended version of this no action assurance on September 27, 2017.

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November-December 2018 included the Quarterly Performance Testing for Aguirre Units 1-2, and the Relative Correlation Audit (“RCA”) and Relative Accuracy Test Audit (“RATA”) for O₂ for Costa Sur Units 5-6 and Palo Seco Unit 3.

However, there were certain technical issues that occurred during some of the testing for the units, including the RCAs for Costa Sur Units 5-6 and Palo Seco Unit 3. For the Costa Sur RCAs, the contractor determined that they needed to do more runs in order to establish a new correlation curve, because the units were not passing the RCA. For Palo Seco Unit 3, PREPA was not able to complete the testing due to load limitations. PREPA will need to complete more testing runs on these units in order to finish the audit. As a result, the reports from this testing remain in draft form. PREPA had intended to re-conduct some of the audits in October 2020; however, Costa Sur Unit 5 was unable to be switched to fuel oil for the purposes of conducting the testing due to generation availability limitations and reliability concerns. At that time, Costa Sur Unit 6 was still out-of-service due to damage from the earthquakes, and Palo Seco Unit 3 had been out-of-service for an environmental outage starting in mid-September 2020, and is expected to remain so until March 2021.

The Hurricane NAA also covered MATS testing deadlines for San Juan Unit 9, including the RCA for Unit 9. However, San Juan Unit 9 had a transformer failure and was out-of-service until January 12, 2020. RCA testing on the unit occurred in October 2020, and the report is in the process of being finalized.

Reports not submitted by deadlines in Hurricane NAA:

Most of the reports covered by the Hurricane NAA were due by July 30, 2018 or August 30, 2018. However, a few reports related to testing were due no later than 60 days after the testing for the relevant unit was completed, but no later than October 1, 2018. PREPA did not meet a number of the Hurricane NAA report submission deadlines, including:

- For instance, the deadline for submitting the MATS RCA reports described above was October 1, 2018, while the deadline for submitting the MATS RATA reports noted above was August 30, 2018. However, the MATS testing required for many of these reports did not occur until November 2018 or later, and certain of the tests needed to be repeated due to technical difficulties. The testing for San Juan Unit 9 occurred in July 2020 due to the fact that the unit was out-of-service for a significant period of time, and the report was submitted to EPA in September 2020.
- MATS excess emissions reports were also not submitted on time. For instance, the MATS Quarterly Excess Emissions Reports for Q3-Q4 2017 were due by July 30, 2018. The MATS Quarterly Excess Emissions Reports for Q1-Q2 2018 were due by August 30, 2018. PREPA submitted the Q3 2017 - Q2 2018 reports for Costa Sur in June 2019, and submitted these reports for San Juan in January 2020.
- Moreover, PREPA also did not meet reporting deadlines for various other non-MATS reports, including the Title V Annual Compliance Certification Report for 2017 and the Title V Semi-Annual Reports for the Second Half of 2017. The Hurricane NAA excused the late submission of these reports until July 30, 2018, but PREPA did not submit them until March 13, 2019 and March 11, 2019, respectively.

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- Additional reports that were not submitted in accordance with the timeline in the Hurricane NAA include the annual RATA reports required by the PSD permits for the San Juan and Cambalache plants.

Certain other reports were not covered by the Hurricane NAA; however, due to the backlog in reporting PREPA experienced in the aftermath of the hurricanes, these additional reports were also not timely submitted. For instance, the Title V Semi-Annual Reports for the First Half of 2018 were not submitted until February 4, 2019, and the MATS quarterly excess emissions reports for the second half of 2018 were not submitted until June 2019 for Costa Sur and January 2020 for San Juan.

B. No Action Assurance Related to January 2020 Earthquakes

In late 2019 and early 2020, a series of large earthquakes struck Puerto Rico, including a very large earthquake on January 7, 2020 that wrought heavy damage on the Costa Sur Power Plant, rendering it inoperable for months. Costa Sur Unit 5 was not able to return to service until August 2020, and Costa Sur Unit 6 was unable to return to service until February 12, 2021. In addition, two of the Mayaguez combustion turbines (54 MW each) experienced damage caused by the earthquakes (turbine bearing failures) were out of service for a period of time. The unavailability of these units, particularly the 820 MW associated with Costa Sur Units 5-6, left PREPA with a significant reserve deficit.

On January 14, 2020, PREPA requested that EPA exercise its discretion not to enforce various requirements of the Clean Air Act for noncompliance resulting from the earthquakes. In response, on January 31, 2020, EPA issued two NAAs to PREPA, which covered fuel quality testing and fuel consumption limits at various PREPA power plants (“Fuel NAA”), as well as the operation of various internal combustion engines (“ICE”) at PREPA power plants (“ICE NAA”). On February 13, 2020, EPA issued a third NAA to PREPA covering compliance with MATS (“MATS NAA”). Among other things, the MATS NAA covered compliance with the MATS PM limit for Aguirre Units 1-2, Palo Seco Units 3-4, and San Juan Unit 9; the MATS limited-use restrictions for San Juan Units 7-8 and Palo Seco Unit 1; and certain requirements related to performance testing and work practice standards. Collectively the three NAAs are referred to as the “Earthquake NAAs.” The Earthquake NAAs were initially in effect until April 30, 2020.

On April 29, 2020, PREPA requested an extension of limited aspects of the Fuel NAA and the MATS NAA, requesting coverage of a narrower scope of compliance issues. PREPA did not request an extension of the ICE NAA. For the Fuel NAA, PREPA requested an extension for fuel consumption limits, but did not request an extension for fuel quality testing requirements. For the MATS NAA, PREPA requested an extension of the MATS PM limits for Aguirre Units 1-2, Palo Seco Units 3-4, and San Juan Unit 9; the MATS limited-use requirements for San Juan Unit 7 and Palo Seco Unit 1 (but not San Juan Unit 8); and certain work-practice standard requirements. PREPA did not request an extension for MATS performance testing requirements.

On May 18, 2020, EPA granted the requested extension until August 14, 2020, and also expanded the Earthquake NAAs to cover certain Costa Sur reporting requirements.

PREPA’s request for the Earthquake NAAs (and requests for extensions of the Earthquake NAAs), as well as the Earthquake NAAs (and associated extensions) issued by EPA in response to

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PREPA's requests, are included in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→No Action Assurances folder in the Data Room.

C. Mercury and Air Toxics Standard

On February 16, 2012, EPA promulgated the Mercury and Air Toxics Standard, which regulates air emissions of mercury and acid gases from oil-fired steam electric generating units ("EGUs").¹⁰ The MATS rule imposes stringent emission limitations for particulate matter ("PM") (a surrogate for mercury and metal toxics), as well as emission limits for acid gases (hydrogen chloride ("HCl") and hydrogen fluoride ("HF")). The MATS rule also imposes work practice standards on subject units. At a high level, the major MATS requirements include:

- PM emissions limit of 0.030 lb/MMBTU;
- Emissions limits or fuel moisture content requirements to control acid gases; and
- Work practice standards that require tune-up of burner and combustion controls every 36 calendar months and impose standards applicable during start-up and shutdown of the power plant.

The MATS rule also allows a utility to designate some oil-fired power plants as "limited use units" if they meet a maximum 8% heat input limit, averaged over a 24-month block period.¹¹ "Limited use units" are subject to significantly less stringent requirements under MATS. While these units must comply with the tune-up work practice standard, they are not subject to emissions limits for PM, HCl or HF, or the start-up/shutdown work practice standards.

MATS requires utilities to demonstrate compliance with the PM emissions limit by either conducting quarterly performance testing or installing an emissions monitoring device, such as a PM Continuous Emission Monitoring System ("CEMS"). For units with PM CEMS, a source is also required to conduct various audits of the CEMS, including RCA, Relative Response Audits ("RRA"), and RATA. RATA must be conducted on an annual basis, RCAs must be conducted on a tri-annual basis, and RRAs must occur annually in the years in which an RCA is not conducted.

PREPA has four power plants subject to the MATS requirements: Palo Seco (Units 1-4), San Juan (Units 7-10), Aguirre (Units 1-2), and Costa Sur (Units 3-6). Of these, the following six units have been designated by PREPA as limited use units: San Juan Units 7-8, Palo Seco Units 1-2, and Costa Sur Units 3-4.¹²

The MATS initial compliance date was April 16, 2015; however, PREPA obtained a one-year extension for Aguirre Units 1-2 until April 16, 2016. The Aguirre units were thus not required to

¹⁰ See *National Emission Standards for Hazardous Air Pollutants From Coal- and Oil-Fired Electric Utility Steam Generating Units*, 77 Fed. Reg. 9,304 (Feb. 16, 2012).

¹¹ See 40 C.F.R. § 63.10042.

¹² Costa Sur Units 3-4 have not operated since 2016, and are likely to be decommissioned.

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comply with MATS until that date. PREPA also sought an extension for units at Palo Seco and San Juan, but the extension was not granted.

Aguirre Units 1-2 utilize quarterly performance testing to demonstrate MATS compliance with the PM emission limits, while PM CEMS have been installed on Costa Sur Units 5-6, Palo Seco Units 3-4, and San Juan Unit 9.¹³ However, as described above, PREPA has not conducted quarterly performance testing for Aguirre or performance audits of its PM CEMS for its other units on a timely basis. As a result, PREPA has also been overdue on submitting reports associated with this testing.

Moreover, while the Costa Sur units have generally been in compliance with MATS (with the exception of the testing and reporting delays noted above), various noncompliance has occurred at Aguirre, San Juan, and Palo Seco. A high level overview of compliance status is as follows:

- San Juan Unit 9 and Palo Seco Unit 3 have been unable to consistently meet the MATS PM emission limit.
- Palo Seco Unit 4 was also out-of-service for most of the time that MATS has been in effect. Palo Seco Unit 4 briefly reentered service in 2019; however, on June 21, 2019, Unit 4 was damaged due to an emergency transformer protection failure that resulted in a lubrication failure of the unit, which damaged several bearings. The unit again came back in service on October 6, 2019. Since then, PREPA has been having technical issues, including calibration difficulties, with the CEMS on Unit 4, Stack A, despite multiple attempts to correct the issue with the assistance of the original equipment manufacturer (“OEM”). PREPA is still in the process of determining next steps. The CEMS on Unit 4, Stack B is operational. However, PREPA cannot determine its compliance with the limit without the information from both stacks (which must be summed together). PREPA is thus uncertain of PM emission levels from Unit 4, but expects that there may have been exceedances. Because of the CEMS difficulties, PREPA conducted a Method 5 test for PM (the same type of test used to demonstrate compliance at Aguirre) in October 2020.
- San Juan Units 7-8 and Palo Seco Units 1-2 were designated by PREPA as limited-use units, but did not meet the 8% heat-input limit during the first 24-month block period (May 2015-April 2017). San Juan Units 7-8 and Palo Seco Unit 1 also exceeded the 8% heat input limit during the second 24-month block period (May 2017-April 2019); however, a significant portion of this time period was covered by the Hurricane NAA with EPA. Taking into account the amount of fuel burned during the Hurricane NAA time period, San Juan Units 7-8 did not exceed the heat input limit. Palo Seco Unit 2 did not exceed the heat input limit. For the third 24-month block period, Palo Seco Unit 1 and San Juan Units 7-8 have exceeded the heat-input limit. However, a significant portion of this time period was covered by the MATS NAA with EPA. Taking into account the amount of fuel burned during the MATS NAA time period, Palo Seco Unit 1 and San Juan Unit 8 did not exceed the heat input limit. Palo Seco Unit 2 did not exceed the heat input limit.
- Although the compliance date for Aguirre Units 1-2 was April 16, 2016, the units did not perform quarterly performance testing for the first time until November 2018. Two quarterly

¹³ San Juan Unit 10 has been out-of-service for a significant period of time—since prior to when MATS went into effect.

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performance tests have been performed for Aguirre Unit 1 on November 26, 2018 and on April 9, 2019, while only one test has been performed at Aguirre Unit 2 on November 14, 2018. The two testing reports for Aguirre Unit 1 show PM emissions levels below the MATS PM emission limit of 0.03 lb/MMBtu, while the testing for Aguirre Unit 2 shows PM emissions levels slightly above that limit. PREPA attempted to conduct additional quarterly tests in October 2020; however, PREPA was not able to complete that testing due to load limitations (units need to be at higher loads to conduct the testing), and because one of the units tripped during the testing attempt. As noted above, PREPA is attempting to line up a contractor to conduct the testing for Q1 2021. However, Aguirre Unit 1 commenced an environmental outage on January 31, 2021, and so testing of that unit will likely not occur until Q2 2021.

Power Plant / Units	Date of Most Recent PM Test	Date of Penultimate PM Test
Aguirre Unit 1	April 9, 2019 Stack 1-A: Avg. 0.0248 lb/MMBtu Stack 1-B: Avg. 0.0268 lb/MMBtu	Nov. 26, 2018 Stack 1-A: Avg. 0.0293 lb/MMBtu Stack 1-B: Avg. 0.0296 lb/MMBtu
Aguirre Unit 2	Nov. 14, 2018 Stack 2-A: Avg. 0.0313 lb/MMBtu Stack 2-B: Avg. 0.0332 lb/MMBtu	—

- PREPA has not timely conducted yearly MATS audits on PM CEMS at Costa Sur Units 5-6, Palo Seco Unit 3-4, and San Juan Unit 9. RCAs must be conducted tri-annually, and RRAs are conducted in the years in which an RCA is not conducted. RATA of O2 for the PM CEMS at these units also must be conducted annually. Part of the time period during which PREPA did not conduct these audits was covered by the Hurricane NAA described above. However, the Hurricane NAA for this audit testing expired prior to when PREPA conducted the RCAs for Costa Sur Units 5-6 and Palo Seco Unit 3 in November 2018. Moreover, due to technical problems with the RCA testing, PREPA must re-conduct this testing, as described in more detail above. Thus, a valid RCA has yet to be completed for these units and, since 2016, various RRAs have also not been completed. PREPA conducted the first RCA for San Juan Unit 9 in October 2020. However, this was the first RCA that has been conducted on the unit since MATS went into effect. As noted above, a large portion of the time period was covered by the Hurricane NAA, and then Unit 9 was out-of-service for a significant period of time following expiration of the Hurricane NAA.

By email dated February 2, 2021, EPA requested the most recent PM CEMS O2 RATA conducted for San Juan, Palo Seco and Costa Sur. On March 10, 2021, PREPA responded that the 2020 San Juan Unit 9 PM CEMS O2 RATA had been completed, and provided a copy of the report (dated September 2020). PREPA explained that the PM CEMS O2 RATA for Palo Seco Unit 4 and Costa Sur Unit 5 had been completed, but that the draft reports had not yet been received from the testing contractor. PREPA noted that the RATA had not been performed at Palo Seco Unit 3, as the unit was out-of-service for environmental outage, and had not been performed at Costa Sur Unit 6, which was out-of-service until mid-February 2021 due to the earthquake damage.

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PREPA has been negotiating with the United States to enter into a consent decree to address its noncompliance with MATS since 2015. However, in September 2016, negotiations were put on hold when the Puerto Rico Energy Commission (“PREC”) disapproved of core elements of PREPA’s Integrated Resource Plan (“IRP”)—which had been anticipated to form the basis of PREPA’s MATS compliance plan. The negotiations continued to largely be on hold as the second round of the IRP process took place. On February 12, 2019, PREPA submitted a draft of the IRP to the Puerto Rico Energy Bureau (“PREB”) (the agency that replaced the PREC).¹⁴ The draft IRP contained a discussion of MATS requirements and compliance, and PREPA’s future plans for retiring various units.

On August 24, 2020, the PREB issued its final resolution and order on the IRP, approving in part and disapproving in part PREPA’s proposed IRP.¹⁵ PREPA did not seek reconsideration of PREB’s order. PREPA is still analyzing the implications of that order on its generation fleet, and what it means for the timing of retirements of existing units and potential replacement generation resources.

A potential future MATS consent decree with the United States is expected to include civil penalties for PREPA’s noncompliance with MATS. This will likely include a negotiated amount of penalties. While the potential maximum statutory penalties are significant,¹⁶ EPA has discretion in determining a penalty amount and often settles for significantly less than the statutory maximum amounts. In a settlement context, EPA typically applies its “Clean Air Act Stationary Source Civil Penalty Policy,” October 25, 1991, to determine the amount of penalty to assess. In so doing, EPA calculates the avoided cost of compliance and assesses the gravity of the violations, among other things. PREPA’s financial situation and ability to pay is also likely to influence the final penalty amount.

Note that on March 16, 2020, the United States and PREPA executed a tolling agreement for claims related to alleged violations of MATS (“MATS Tolling Agreement”) in order to facilitate settlement negotiations. The MATS Tolling Agreement states that the United States “contends that it has civil causes of action against the Puerto Rico Electric Power Authority (“PREPA”), pursuant to the Clean Air Act (“Act”), 42 U.S.C. §§ 7401-7431, relating to alleged violations of 40 CFR Part 63, Subpart UUUUU, the National Emission Standards for Hazardous Air Pollutants from Coal- and Oil-fired Electric Steam Generating Units,” at PREPA’s Aguirre Power Plant, Costa Sur Power Plant, Palo Seco Power Plant, and San Juan Power Plant (the “Tolled Claims”). Under the Tolling Agreement, the period commencing on March 20, 2020, and ending on March 19, 2021, inclusive (the “Tolling Period”), shall not be included in computing the running of any statute of limitations

¹⁴ See Puerto Rico Integrated Resources Plan 2018-2019, Draft for Review of the Puerto Rico Energy Bureau, Siemens PTI Report Number: RPT-015-19 (Feb. 12, 2019), <http://energia.pr.gov/wp-content/uploads/2019/02/PREPA-Ex.-1.0-IRP-2019-PREPA-IRP-Report.pdf>.

¹⁵ In Re: Review of the Puerto Rico Electric Power Authority Integrated Resource Plan, Case No. CEPR-AP-2018-0001, Final Resolution and Order on the Puerto Rico Electric Power Authority’s Integrated Resource Plan (Aug. 24, 2020), <https://energia.pr.gov/wp-content/uploads/sites/7/2020/08/AP20180001-IRP-Final-Resolution-and-Order.pdf>.

¹⁶ Under the Clean Air Act, EPA could bring a civil action for permanent or temporary injunction, or to assess and recover a civil penalty of up to approximately \$101,439 per violation, per day. 42 U.S.C. § 7413(b); 40 C.F.R. § 19.4. The Administrator can also issue an administrative order against any person assessing a civil administrative penalty of up to approximately \$48,192 per day of violation. 42 U.S.C. § 7413(d)(1); 40 C.F.R. § 19.4.

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potentially applicable to any action brought by the United States on the Tolled Claims.” PREPA expects that the United States will request an extension of the Tolling Agreement as the March 19, 2021 date approaches. The Tolling Agreement is in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Air Documents Folder in the Data Room.

D. Non-Attainment Designation for SO₂ NAAQS

In early 2018, EPA designated the San Juan and Guayama-Salinas areas of Puerto Rico as non-attainment areas for the SO₂ NAAQS.¹⁷ The non-attainment designations took effect on April 9, 2018. PREPA’s power plants affected by the non-attainment designation are San Juan, Palo Seco, and Aguirre. Under the Clean Air Act, the Puerto Rico Department of Natural and Environmental Resources (“DNER”) was required to submit a state implementation plan (“SIP”) to EPA by October 2019.¹⁸ The SIP is required to demonstrate how the affected areas would meet the NAAQS as expeditiously as practicable, but no later than April 9, 2023.¹⁹

Since the non-attainment designations were promulgated in early 2018, PREPA has engaged with EPA and DNER on this issue, and has pursued avenues to spur EPA to reconsider its non-attainment designations. On December 31, 2018, Hogan Lovells, on behalf of PREPA, submitted a Technical Memorandum that provided an “Independent Review of Sulfur Dioxide Dispersion Modeling Performed to Support Non-attainment Designations in Puerto Rico” to EPA and DNER. The Technical Memorandum identified significant flaws in the modeling and underlying data used to support the non-attainment designations, including flaws in the SO₂ emissions data, meteorological data, stack parameters and physical layout of PREPA facilities, and background concentrations used in conducting the modeling. In addition, PREPA directed an independent preliminary screening modeling to assess the potential impacts of using more representative data. This analysis is in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Air Documents→SO₂ NAAQS Folder in the Data Room.

On February 28, 2019, PREPA met with EPA to discuss the flaws in DNER’s modeling analysis and to identify a potential path forward to rectifying such flaws. Among other things, PREPA asked for EPA and DNER to reconsider and withdraw the SO₂ NAAQS non-attainment designations; deploy ambient SO₂ monitoring stations for at least one year to assess the impacts of the PREPA power plants; collect at least one year of onsite meteorological data that corresponds to the updated emissions data; and rerun the dispersion modeling with the new data. However, following the meeting, EPA and DNER did not act on the recommendations contained in the Technical Memorandum.

¹⁷ See *Air Quality Designations for the 2010 Sulfur Dioxide (SO₂) Primary National Ambient Air Quality Standard – Round 3*, 83 Fed. Reg. 1098 (Jan. 9, 2018).

¹⁸ See 42 U.S.C. § 7514(a).

¹⁹ *Findings of Failure To Submit State Implementation Plans Required for Attainment of the 2010 1-Hour Primary Sulfur Dioxide (SO₂) National Ambient Air Quality Standard (NAAQS)*, 85 Fed. Reg. 69,504 (Nov. 3, 2020).

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In addition to its correspondence with EPA, PREPA has also had discussions with DNER regarding the need to tie development of the SIP to the outcome of the IRP process. Tying the SIP to the results of the IRP process would help to ensure that any PREPA investments required by the SIP are part of an orderly planning process and are not inconsistent with PREPA's IRP. DNER acknowledged the benefits of this approach and the development of the SIP was largely delayed pending the IRP results.

On November 3, 2020, EPA published a Finding of Failure to Submit ("FFS") the SIP for SO₂ for Puerto Rico, and it became effective on December 3, 2020. "Such a finding triggers an obligation under CAA section 110(c) for the EPA to promulgate a FIP [Federal Implementation Plan] no later than 2 years after the finding of failure to submit if the affected state or territory has not submitted, and the EPA has not approved, the required SIP submittal."²⁰ The FFS also triggers CAA deadlines for EPA to impose sanctions if EPA has not determined that Puerto Rico made a complete SIP submittal. Should EPA not make such a determination, on June 3, 2022, 18 months after the effective date of the FFS, a 2-to-1 offset ratio under the nonattainment New Source Review ("NSR") permitting program would go into effect, such that for every unit of SO₂ emissions a new or modified source contributes to the nonattainment area, two units must be reduced. In addition, six months after the date of offset sanctions, the Clean Air Act would require federal highway sanctions. As stated above, sanctions and a FIP are not required if EPA determines that Puerto Rico has submitted a complete SIP by the relevant deadlines.

On December 22, 2020, EPA, DNER, PREB, PREPA, and a number of other stakeholders convened a meeting to discuss the significance of the above findings and the necessary actions to avoid sanctions. EPA and DNER each gave presentations, which are included in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→Air Documents→SO₂ NAAQS Folder in the Data Room. Among other things, the entities discussed DNER's modeling efforts.

Over the course of several months (September 2020-January 2021), PREPA responded to information requests from DNER to assist it with its modeling. These responses are also provided in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→Air Documents→SO₂ NAAQS Folder in the Data Room.

PREPA has requested, and received, information regarding DNER's modeling efforts for the SIP, and is participating in a technical work group to discuss modeling and other issues related to SIP development. PREPA is working to ensure that these modeling efforts utilize best available data and proper methodologies.

²⁰ Findings of Failure To Submit State Implementation Plans Required for Attainment of the 2010 1-Hour Primary Sulfur Dioxide (SO₂) National Ambient Air Quality Standard (NAAQS), 85 Fed. Reg. 69,504 (Nov. 3, 2020).

E. Greenhouse Gas (“GHG”) Standards Under Section 111 of the Clean Air Act

1. New Source Performance Standards for GHGs Under Section 111(b)

In October 2015, EPA issued New Source Performance Standards (“NSPS”) for GHGs for fossil-fuel fired EGUs under Section 111(b) of the Clean Air Act.²¹ The NSPS applies to new, reconstructed, or modified steam EGUs and to new or reconstructed natural gas combustion turbines. To the extent new power plants are built, or existing plants are reconstructed or modified, the NSPS may apply.

In December 2018, EPA issued a proposed rule to amend the Section 111(b) standards for GHGs.²² The main feature of this proposal is that it would change the best system of emission reduction (“BSER”) and emissions standards for steam EGUs. EPA is not proposing to change the NSPS for newly constructed or reconstructed natural gas stationary combustion turbines. However, EPA left open the possibility of follow-up regulatory action through a separate proposal to address issues related to stationary combustion turbines. These revisions to the BSER have not been finalized as of the time of drafting, and will likely not be finalized given the change in Administration.²³

2. Emissions Guidelines for GHGs under Section 111(d)

In October 2015, EPA issued emissions guidelines for GHGs for existing fossil fuel-fired EGUs under Section 111(d) of the Clean Air Act.²⁴ In response to the emission guidelines promulgated by EPA, each state was required to submit a plan that “establishes standards of performance” for existing sources subject to the guidelines. This regulatory program was known as the Clean Power Plan. Puerto Rico was excluded under the Clean Power Plan; EPA did not establish emissions performance goals for Puerto Rico, which was not required to submit a plan to EPA. EPA’s rationale for not finalizing emission performance goals for Puerto Rico was that EPA did “not possess all of the information or analytical tools needed to quantify the BSER” for Puerto Rico.²⁵ However, EPA left open the possibility of establishing requirements for Puerto Rico in the future.²⁶

²¹ See *Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units; Final Rule*, 80 Fed. Reg. 64,510 (Oct. 23, 2015).

²² See *Review of Standards of Performance for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units*, 83 Fed. Reg. 65,424 (Dec. 20, 2018).

²³ On January 13, 2021, EPA issued a framework for determining when standards are appropriate for GHG emissions from stationary source categories under Section 111(b), and reaffirmed that EGUs remain a listed source category. EPA did not take final action to revise the BSER. See *Pollutant-Specific Significant Contribution Finding for Greenhouse Gas Emissions From New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units, and Process for Determining Significance of Other New Source Performance Standards Source Categories*, 86 Fed. Reg. 2,542 (Jan. 13, 2021).

²⁴ *Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 80 Fed. Reg. 64,662 (Oct. 23, 2015) (“Clean Power Plan”).

²⁵ Clean Power Plan, 80 Fed. Reg. 64,662, at 64,664; *id.* at 64,708.

²⁶ See *id.* at 64,743, 64,826.

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On July 8, 2019, EPA repealed the Clean Power Plan and promulgated a rule to replace the Clean Power Plan—the “Affordable Clean Energy” rule or “ACE” rule.²⁷ The final ACE rule only applies to the contiguous states, and thus does not apply to Puerto Rico.²⁸ In the final ACE, EPA also clarified that only coal-fired utilities were deemed designated facilities for the purposes of the ACE, and it was not identifying a BSER for other types of EGUs, including oil-fired units.²⁹

On January 19, 2021, the D.C. Circuit Court of Appeals vacated the ACE rule, leaving the future status of GHG regulation of existing power plants somewhat uncertain.³⁰ The new Administration is expected to propose a new regulation under Section 111(d).

PREPA commented on both the Advanced Notice of Proposed Rulemaking and the Notice of Proposed Rulemaking for the ACE rule. PREPA’s comments are located in the Data Room in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Air Documents→Greenhouse Gases Folder.³¹ Among other things PREPA’s comments had urged EPA to continue to exclude Puerto Rico from regulation under the ACE rule, and also urged EPA to exclude oil- and gas-fired steam EGUs from regulation.

F. Permitting Requirements for Conversion of San Juan Units 5-6

San Juan Units 5 and 6 are existing distillate oil-fired combined-cycle combustion turbines that were installed under a PSD permit issued by EPA on April 1, 2004. Each combined-cycle unit consists of a Westinghouse 501FC combustion turbine and a heat recovery steam generator (“HRSG”) powering a steam turbine with a designed net output rating of 232 megawatts (“MW”) per unit. PREPA recently converted San Juan Units 5 and 6 to be dual-fired with natural gas in addition to distillate oil (the “Fuel Conversion Project”).

PREPA selected NFE Energía LLC (“NFE”) to convert Units 5 and 6 to natural-gas firing and to supply natural gas as fuel. Natural gas is delivered by pipeline from a micro-fuel handling facility at Puerto Nuevo in San Juan that is owned and operated by NFE. New systems necessary to support the Fuel Conversion Project include onsite natural gas delivery infrastructure, as well as modifications to Units 5 and 6 to fire natural gas. The modifications to Units 5 and 6 include new combustor kits, dual fuel capable fuel nozzles, steam injection system modifications, and control system upgrades. PREPA is also installing a 19% aqueous ammonia-based selective catalytic

²⁷ Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions From Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations, 84 Fed. Reg. 32,520 (July 8, 2019) (“Final ACE”).

²⁸ *Id.* at 32,579.

²⁹ *Id.* at 32,533.

³⁰ *American Lung Association v. Environmental Protection Agency*, No. 19-1140 (D.C. Cir. 2021).

³¹ PREPA’s comments are also available at the following links. PREPA’s Advanced Notice of Proposed Rulemaking comments are available at: <https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0545-0240>. PREPA’s Proposed ACE Comments are available at: <https://www.regulations.gov/document?D=EPA-HQ-OAR-2017-0355-23654>.

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reduction system and an oxidation catalyst system in one of the two units to control emissions of NO_x, carbon monoxide (“CO”), and volatile organic compounds (“VOCs”).

The proposed Fuel Conversion Project is a physical change and change in the method of operation of an existing major PSD source. The San Juan Plant is an existing major source under the PSD program for emissions of NO_x; CO; SO₂; PM; PM with a diameter equal to or less than 10 micrometers (“PM₁₀”); PM with a diameter equal to or less than 2.5 micrometers (“PM_{2.5}”); VOCs; GHGs; and sulfuric acid mist (“H₂SO₄”). Units 5 and 6 were issued a PSD permit by EPA on April 1, 2004 for emissions of NO_x, CO, and VOCs.

The EPA New Source Review (“NSR”) regulations require existing steam EGUs to provide EPA with an NSR applicability analysis before beginning construction if there is a reasonable possibility that a project may result in a significant emissions increase and certain criteria are met.³² Under the NSR regulations, PREPA is also required to monitor actual emissions for a period of five years following resumption of regular operations after the Fuel Conversion Project.³³ PREPA must also submit a report to the EPA within 60 days after the end of each year setting out actual annual emissions during the prior calendar year.³⁴

On April 16, 2019, PREPA submitted an applicability analysis to EPA, as required by the regulations. This applicability analysis found that the Fuel Conversion Project would not result in increased emissions in excess of PSD significance thresholds, and thus that a PSD permit was not required. Along with its applicability analysis, PREPA also submitted a request to EPA to amend its existing PSD permit for San Juan to add provisions to reflect the option to dual fire Units 5 and 6 with natural gas. As a part of this request, PREPA requested that EPA impose annual mass-based emissions limits in lieu of existing operating hours limitations.

On July 19, 2019, EPA responded to PREPA’s PSD non-applicability analysis providing a list of conditions to be incorporated into the DNER construction permit for the project in order to avoid triggering PSD requirements. EPA also agreed to modify the existing PSD permit for Units 5-6: “Assuming PREPA chooses to incorporate the attached conditions into its PRDNER construction permits, EPA will revise PREPA’s existing San Juan PSD permit under a separate action to conform to the new source configuration and PRDNER permit conditions. We will also incorporate the requested new potential-to-emit limits and remove the combined annual operating limit of 15,000 hours.” This modification of the existing PSD permit from 2004 has not yet been occurred.

On October 3, 2019, DNER issued its construction permit for Units 5 and 6 under Rule 203 of the Puerto Rico Regulations for the Control of Atmospheric Pollution (“PRRCAP”). Section XIV of DNER’s construction permit incorporated the conditions from EPA’s July 19, 2019 response to the PSD non-applicability analysis.

³² 40 C.F.R. § 52.21(r)(6)(ii).

³³ 40 C.F.R. § 52.21(r)(6)(iii).

³⁴ 40 C.F.R. § 52.21(r)(6)(iv).

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Following issuance of the construction permit, conversion was completed in accordance with the following timeline:

San Juan Unit 5 conversion:

- October 10, 2019: San Juan Unit 5 Conversion Start
- December 23, 2019: San Juan Unit 5 Cold Testing Completion (Mechanical Conversion)
- April 6, 2020 to April 15, 2020: San Juan Unit 5 Natural Gas Commissioning

San Juan Unit 6 conversion:

- March 1, 2020: San Juan Unit 6 Conversion Start
- April 14, 2020 to April 25, 2020: San Juan Unit 6 Natural Gas Commissioning

Notably, one of the conditions provided by EPA and incorporated in the construction permit required that:

In either Unit 5 or 6, to reduce air emissions, PREPA shall install, operate and maintain a 19% aqueous ammonia selective catalytic reduction system (SCR), designed with at least an 80% control efficiency for NO_x and an oxidation catalyst system (OxCat) with CO emissions guarantee of at least 10 ppmvd corrected to 15% oxygen. The installation of the combined SCR/OxCat system shall be installed in only one turbine unit and shall occur within six (6) months after operation of the dual fuel capability commences.

Under this condition, PREPA would have been required to install the SCR/OxCat in October 2020. However, NFE claimed force majeure under its contract with PREPA for installation of the SCR/OxCat, citing the COVID-19 pandemic, the need to change SCR vendors, and supplier delays related to the pandemic.

In response to queries on the status of the installation by EPA, on October 8, 2020, PREPA informed EPA that force majeure had been claimed by its contractor. At that time, PREPA anticipated that Unit 5 would be taken out of service on or about January 23, 2021. On February 6, 2021, Unit 5 was taken out of service for the SCR/OxCat installation, and is expected to return to service in early May 2021.

Documentation related to the San Juan Conversion Project is located in the Generation→Permits and Approvals→Environmental Permits and Approvals→San Juan→Air Emission Permits→San Juan Units 5-6 Conversion Folder in the Data Room.

G. Permitting Requirements for the Installation of Combustion Turbines at Palo Seco

In 2019, PREPA installed three (3) MOBILEPAC® gas turbine packages with FT8® engines at the Palo Seco Power Plant ("MobilePac Units"). The MobilePac Units have a capacity of approximately 23 MW each, and are dual fuel ready, with the capability to use diesel or natural gas as fuel.

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PREPA applied for and received an “Emergency Variance” from the DNER to install and commission the MobilePac units prior to obtaining a construction permit from DNER.³⁵ PREPA requested the Emergency Waiver so that the MobilePac Units would be available to provide emergency backup generation as part of PREPA’s contingency plan to ensure the maintenance of reliable service to the island during the hurricane season and to bolster the resiliency of PREPA’s system. The Emergency Variance was issued by DNER on October 24, 2019, and was effective for a period of up to 90 days after that date (i.e., January 22, 2020).

PREPA began installation of the units shortly after receiving the Emergency Waiver in late October 2019. PREPA planned to submit and receive a construction permit from DNER prior to operating the MobilePac units as a part of its generation portfolio.

Puerto Rico experienced significant earthquakes in the south part of the island on or about January 7, 2020, which disabled Costa Sur, creating instability of the system and severely limited reserve capacity. As a result, PREPA needed to rely on all generating units to operate almost at full capacity to meet demand and reserve requirements. On January 22, 2020, PREPA requested additional emergency relief from DNER as a result of the January 2020 earthquakes in Puerto Rico. Specifically, PREPA requested that it be allowed to run the MobilePac units in response to the emergency. DNER has not yet responded to that request. PREPA had also asked for its operation of the MobilePac units to be covered by the Earthquake NAAs; however, EPA did not include relief from any violations related to the installation or operation of the MobilePacs in the NAAs. PREPA operated the MobilePac Units from January 2020 following the earthquakes to mid-August 2020 (when Costa Sur Unit 5 was returned to service). PREPA also operated the units in isolated incidents in September and October 2020 for testing or in response to load sheds or generation deficiencies.

PREPA submitted its application for a construction permit to DNER on January 14, 2020.³⁶ This application was submitted before the 90-day Emergency Waiver expired. The construction permit application states that PREPA will replace simple cycle combustion turbine units PSGT 2-2, 3-1, and 3-2 at the Palo Seco Power Plant with the three MobilePac units. The MobilePac units are rated at 294.8 MMBtu/hr firing natural gas (when gas becomes available), and 283.3 MMBtu/hr firing distillate oil, with an output per unit of approximately 27.9 MW. The construction permit application also contemplates installation and operation of three black start generator engines (“BSGs”) to support startup of the new combustion turbines during periods when the transmission system is down. The BSGs will be fired with low sulfur distillate oil.

To support the construction permit application, PREPA provided a detailed analysis forecasting that the project would not result in a significant increase in any pollutant regulated under the New Source Review (“NSR”) program, but it did not account for the unexpected emergency situation created by the earthquakes. The analysis also assumed that PREPA would decommission existing units PSGT 2-2, 3-1, and 3-2, and credited associated emissions reductions. While PSGT 2-

³⁵ See “Solicitud de Dispensa de Emergencia,” dated October 24, 2019, TV-4911-70-1196-0015.

³⁶ See “Permit to Construction Application for Proposed Peaking Combustion Turbines to Replace Existing Units PSGT 2-2, 3-1, and 3-2 at [PREPA’s] Palo Seco Plant” (dated Dec. 17, 2019; submitted Jan. 14, 2020).

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2 and 3-2 had been out-of-service for some time prior to the construction of the MobilePac Units, PSGT 3-1 was not taken out of service until January 30, 2020—as soon as practicable after the emergency conditions created by the earthquakes. PSGT 3-1 also operated in November and December 2019, while the MobilePac Units were being tested and commissioned.

The MobilePac Units were intended to be operated with NO_x water injection controls. The operation of those controls was delayed and did not occur in 2020 due to water quality results being out of tolerance with OEM requirements for the MobilePac turbines.

On several occasions in 2020, EPA made various requests for information regarding the MobilePac Units, including the timing of their construction and operation, the timing of the removal from service of PSGT 2-2, 3-1, and 3-2, the amount of fuel used and hours of operation of the MobilePac Units, the timing and status of the installation of the water injection controls on the units, and emissions from the MobilePac Units with and without those controls. EPA's questions and PREPA's responses thereto are contained in the Generation→Permits and Approvals→Environmental Permits and Approvals→Palo Seco→Air Permits→Palo Seco MobilePac Units Folder in the Data Room, along with other documentation related to the MobilePac Units.

On January 22, 2021, EPA issued a Notice of Violation and Opportunity to Confer regarding the Palo Seco MobilePac Units. Among other things, the NOV alleges that PREPA violated PSD requirements by failing to “(1) apply for and obtain a PSD permit to construct and operate the MobilePac units, (2) conduct a BACT [Best Available Control Technology] analysis, (3) install appropriate emission control equipment in accordance with a BACT analysis, (4) conduct a source impact analysis or an ambient air quality analysis, (5) submit source information, and (6) meet source obligations.” The NOV further alleges that PREPA violated non-attainment area NSR requirements, because Palo Seco is located in a non-attainment area for SO₂. The NOV alleges that PREPA failed to “(1) apply for and obtain a non-attainment area NSR permit to construct and operate the MobilePac units in a non-attainment area for SO₂, (2) implement the lowest achievable emissions rate (“LAER”), (3) obtain federally enforceable emission offsets for SO₂, (4) submit an analysis demonstrating that the benefits of the MobilePac units significantly outweigh their environmental and social costs, and (5) conduct an air quality impact analysis.”

In addition to not obtaining a permit, the NOV also alleges that PREPA violated the NSPS at 40 C.F.R. part 60 subpart KKKK (stationary combustion turbines), because of PREPA's “failure to: (1) employ good air pollution control practices, including failing to install the water injection system or employ a CEMS, . . . ; and (2) demonstrate continuous compliance for NO_x emissions” The NOV also alleges violations of the NSPS at 40 C.F.R. part 60 subpart TTTT (standards of performance for GHGs for electric generating units), and the National Emission Standards for Hazardous Air Pollutants (“NESHAP”) at 40 C.F.R. part 63 subpart YYYYY (NESHAP for stationary combustion turbines).

The NOV outlines potential enforcement pathways and penalties available to EPA, and provides PREPA with the opportunity to confer regarding the NOV. PREPA arranged to confer with EPA in March 2021. The NOV is located in the Palo Seco Data Room. The Private Party should review the NOV for more information.

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Barring an emergency situation, PREPA intends for the MobilePac units to remain out-of-service until water injection controls are operational, DNER issues a permit to construct, and PREPA reaches a resolution with EPA regarding the NOV. PREPA anticipates that an administrative order will likely be issued to address issues associated with the installation and operation of the MobilePac Units.

Documentation related to the Palo Seco MobilePacs is located in the Generation→Permits and Approvals→Environmental Permits and Approvals→Palo Seco→Air Permits→Palo Seco MobilePac Units Folder in the Data Room.

H. Requirements Associated with Title V Permits

1. Overview

Title V of the Clean Air Act requires that major sources (and sources subject to various Clean Air Act programs) obtain a Title V operating permit.³⁷ The Department of Natural and Environmental Resources (“DNER”) (formerly the Puerto Rico Environmental Quality Board (“PREQB”)) manages the Title V program on behalf of Puerto Rico.³⁸

PREPA’s generating units with Title V permits are the Aguirre Power Station (PFE-TV-4911-63-0212-0244), Palo Seco Steam Power Plant (PFE-TV-4911-70-1196-0015), South Coast Steam Power Plant (PREPA-Costa Sur) (TV-4911-31-0397-0021), San Juan Steam Power Plant (PFE-TV-4911-65-1196-0016), Cambalache Combustion Turbine Plant (PFE-TV-4911-07-0897-0043), Mayaguez Gas Turbines (TV-4911-63-1196-0014), Daguao Turbine Power Block (PFE-TV-4911-19-0306-0447), Jobos Turbine Power Block (PFE-TV-4911-30-1107-0991), Vega Baja Turbine Power Block (PFE-TV-4911-74-0106-0021), and Yabucoa Turbine Power Block (PFE-TV-4911-77-0707-0759). The Title V Permits are included in the folder for each plant in the Generation→Permits and Approvals→Environmental Permits and Approvals Folder in the Data Room.

While the terms of each Title V permit vary, the permits generally collect and incorporate the Clean Air Act requirements applicable to each plant. Depending on the plant, these include various NSPS (e.g., for stationary gas turbines) and NESHAP (e.g., MATS, standards for combustion turbines, standards for reciprocating internal combustion engines). Plants are also required to comply with various emission limits, including annual tons per year (“tpy”) limits as well as shorter term limits. The plants are also required to comply with fuel consumption and fuel content

³⁷ See 42 U.S.C. § 7661a; 40 C.F.R. § 70.3(a).

³⁸ See PRRCAP, Rules 601-610. Until 2018, PREQB was responsible for administering most of the environmental programs discussed in this white paper. In 2018, legislation was passed that reorganized the functions of PREQB and subsumed them within the Puerto Rico Department of Natural and Environmental Resources (“DNER”). More specifically, according to DNER’s Financial Statements for the FY ending June 30, 2018, Law No. 171 of August 2, 2018 was enacted for the purpose of executing and complying with the Reorganization Plan of the Department of Natural and Environmental Resources of 2018 adopted pursuant to Law No. 122 of December 18, 2017, which transfers, groups and consolidates in the Department of Natural and Environmental Resources, faculties, functions, services and structures of the Environmental Quality Board, the Solid Waste Authority and the Program of National Parks attached to the Department of Recreation and Sports, in order to streamline procedures, share government resources, achieve savings and make possible the outsourcing of certain functions or services.

This white paper will refer to DNER for simplicity. Note, however, that prior to the reorganization, PREQB would have been the relevant entity, and documents in the data room predating the reorganization will refer to PREQB.

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requirements (primarily for sulfur, vanadium, and asphaltene), as well fugitive emissions measures, monitoring and testing requirements, recordkeeping requirements, reporting requirements, and good engineering and combustion practices, among other things. The Title V permits also require compliance with various requirements of the PRRCAP. Some of the permits also incorporate requirements from plant PSD permits or from the Consent Decree. The Title V permits also require PREPA to pay annual fees to DNER.

In terms of reporting, PREPA must submit reports, such as:

- Annual Compliance Certification Reports;
- Semi-Annual Monitoring Reports;
- Fuel Consumption Monthly Reports;
- Quarterly Excess Emissions Reports;
- Emergency Generator Compliance Reports;
- Greenhouse Gas Reports;
- Deviation reporting due to emergencies;
- Deviation reporting for hazardous air pollutants; and
- Reporting required by other Clean Air Act programs incorporated into the Title V permit (e.g., MATS reporting requirements).

Various reports required by the Title V permits for the last several years are included in the applicable Data Room folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→Reports→Air Emissions Reports Folders in the Data Room, including: Annual Compliance Certification Reports; Semi-Annual Monitoring Reports; Fuel Consumption Monthly Reports; Quarterly Excess Emissions Reports; Emergency Generator Compliance Reports; Annual Greenhouse Gas Reports; and various reports required by MATS. The Private Party should review these and other reports to evaluate PREPA compliance, as this white paper does not endeavor to identify every instance of PREPA noncompliance and is only intended to provide a high level overview.

Note also that this section is intended to provide a general overview of the types of requirements included in the Title V permits, but each permit is different. The Private Party should consult the terms of the permit and requirements of the appropriate statute and regulations to determine the obligations applicable to each plant.

2. Status of PREPA Title V Permit Renewals

Title V permits are issued for five year terms. Several PREPA Title V permits expired in 2020. PREPA was thus required to apply for renewals of those permits in 2019, because permit renewal applications are required to be submitted twelve (12) months prior to expiration:³⁹

- Aguirre's Title V permit expired on April 15, 2020. Accordingly, PREPA submitted the renewal application on April 15, 2019.
- Palo Seco's Title V permit expired on March 16, 2020. PREPA submitted the renewal for the permit on March 18, 2019. PREPA's renewal application requests that DNER should

³⁹ See PRRCAP Rule 602.

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integrate into the draft of the new Title V permit the agreements reached as part of the Request for Reconsideration process for the current Palo Seco permit that was issued in 2015. The agreements reached regarding the terms of the permit are detailed in Resolution R-19-01-04 issued by DNER on January 17, 2019. The changes to the permit included reconciliations between the English and Spanish versions of the permits, and changes to make the permit consistent with various regulations, among other things. Resolution R-19-01-04 is located in the Data Room in the Generation→Permits and Approvals→Environmental Permits and Approvals→Palo Seco→Air Permits Folder.

The Title V permits for many of PREPA's other power plants have expired, and are currently operating under permit application shields due to the fact that PREPA submitted timely renewal applications.⁴⁰ After the renewal application has been submitted and determined to be complete, DNER will typically send PREPA a letter confirming that it has received a complete application for the purposes of obtaining the protective cover of the application. The status of each permit is as follows:

- San Juan: The Title V Permit expired on May 31, 2010. PREPA applied for a renewal on May 29, 2009. On November 2, 2009, PREPA received a letter from DNER determining that PREPA had submitted an administratively complete renewal application in accordance with the PRRCAP for the purposes of the protective cover of the application.
- Costa Sur: The Title V Permit expired on February 20, 2007. PREPA applied for a renewal on March 17, 2006. On June 23, 2006, PREPA received a letter from DNER determining that PREPA had submitted an administratively complete renewal application for the purposes of the protective cover of the application.
- Cambalache: The Title V Permit expired on May 31, 2010. PREPA applied for a renewal on May 29, 2009. PREPA could not locate a letter from DNER confirming the application shield.
- Mayaguez: The Title V Permit expired on November 9, 2006. PREPA applied for a renewal on November 4, 2005. On October 15, 2007, PREPA was granted a construction permit to replace, and in 2008, PREPA replaced the four existing gas turbines at Mayaguez with four Pratt & Whitney FT8 SwiftPac gas turbine units with a capacity each of 54.8 MW. On July 16, 2014, PREPA submitted a modified Title V permit application to DNER. On August 21, 2014, PREPA received a letter from DNER determining that PREPA had submitted an administratively complete renewal application for the purposes of the protective cover of the application.
- Daguao: The Title V Permit expired on May 14, 2015. PREPA applied for a renewal on May 14, 2014. On August 5, 2014, PREPA received a letter from DNER determining that PREPA had submitted an administratively complete renewal application for the purposes of the protective cover of the application.
- Jobos: The Title V Permit expired on September 30, 2015. PREPA applied for a renewal on September 26, 2014. On November 4, 2014, PREPA received a letter from DNER determining that PREPA had submitted an administratively complete renewal application for the purposes of the protective cover of the application.

⁴⁰ See *id.*

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- Yabucoa: The Title V Permit expired on December 31, 2017. PREPA applied for a renewal on December 14, 2016. On January 18, 2017, PREPA received a letter from DNER determining that PREPA had submitted an administratively complete renewal application for the purposes of the protective cover of the application.
- Vega Baja: The Title V Permit expired on November 30, 2015. PREPA applied for a renewal on October 20, 2014. On November 4, 2014, PREPA received a letter from DNER determining that PREPA had submitted an administratively complete renewal application for the purposes of the protective cover of the application.

I. PSD Permits and Permits to Construct

PREPA has obtained PSD permits from EPA for the San Juan and Cambalache power plants.

As noted above, the PSD permit for San Juan was issued by EPA in 2004, when PREPA constructed Units 5 and 6. Each unit is equipped with a steam injection system for NO_x control. The PSD permit also required NO_x emissions reductions from Units 7-10 by modifying burners and using good combustion control. In Units 5-6, the permit requires the use of only low sulfur No. 2 fuel oil in which the sulfur content may not exceed 0.05% by weight and the NO_x content may not exceed 0.10% by weight. It also requires the use of heavy fuel oil with no more than 0.5% fuel sulfur content at Units 7-10. PREPA was required to install CEMS for NO_x, CO, and O₂ and a continuous opacity monitoring system ("COMS"). The 2004 PSD permit contains additional operational requirements, which include, among other things, short-term emissions limits, an annual operating hours limit of 15,000 hours for the two units, and performance testing requirements. The PSD permit also requires PREPA to submit a Quarterly Excess Emissions Report. The PSD permit and Quarterly Excess Emissions Reports are in the Data Room in the Generation → Environmental Reports and Regulatory Matters → San Juan-Environmental → Reports → Air Emissions Reports → PSD Permit Reports Folder.

As described above, PREPA has requested that EPA amend the San Juan PSD permit to reflect the fact that the units will be able to fire natural gas in addition to fuel oil. As a part of this amendment process, PREPA also requested that EPA eliminate the 15,000 hour annual operating limit from the permit and instead impose annual tpy emissions limits for regulated NSR pollutants. While EPA stated in its July 19, 2019 letter that it would follow this approach provided PREPA incorporated annual emission limits and other conditions into its DNER-issued construction permit, the amendment of the PSD permit has not yet occurred.

The PSD permit for construction of Cambalache was initially issued in in 1995 and revised in 1996. The PSD permit required PREPA to operate the plant with steam injection and a SCR to control NO_x; however, the SCR that was installed experienced problems and did not control emissions to the degree intended, producing excess ammonia emissions. As a result, in 2001, EPA issued a compliance order requiring PREPA to remove the SCR and to submit a revised BACT demonstration. On July 5, 2006, EPA issued a final PSD permit modification and accepted a revised BACT. The permit provides that emissions of NO_x shall be controlled via use of a steam injection system; sulfur dioxide and sulfuric acid mist shall be controlled by use of only low sulfur No. 2 fuel oil in which the sulfur content may not exceed 0.15% by weight; the fuel may also contain no more than

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0.055% nitrogen by weight; and other pollutants shall be controlled by implementing good combustion practices. The PSD permit also contains a variety of additional requirements for operation of the units, which include, among other things, fuel consumption limits, heat input limits, startup and shutdown limits, short-term emissions limits, operating hours limits, and performance testing requirements. PREPA was also required to install CEMS for NO_x, CO, and O₂, and a COMS. The PSD permit also requires PREPA to submit Quarterly Excess Emissions Reports. The 2006 PSD permit modification is in the Data Room in the Generation→Permits and Approvals→Environmental Permits and Approvals→Cambalache→Air Permits Folder.

Although PREPA made modifications to Costa Sur to convert it to dual fire with natural gas in the 2011 timeframe, PREPA did not obtain a PSD permit associated with this modification because PREPA's analysis determined that PSD was not applicable. On June 23, 2011, EPA issued a letter to DNER concurring with PREPA's analysis that the proposed modifications would likely not trigger PSD review. The EPA letter is in the Data Room in the Generation→Permits and Approvals→Environmental Permits and Approvals→Costa Sur→Air Permits Folder.

In addition to PSD permits, various Permits to Construct have been issued by DNER pursuant to Rule 203 of the PRRCAP. These include, but are not limited to:

- Several modifications to the Permit to Construct (PFE-31-0810-0455-II-C) issued to Costa Sur in connection with its conversion of Units 5-6 to dual fire with natural gas.
- Permit to Construct (PFE-50-0307-0286-I-II-C) issued on October 15, 2007 to Mayaguez for the project to replace the existing four gas turbines with four new 54.8 MW units.
- Permit to Construct (PFE-65-0499-0365-I-II-C) related to the construction of the San Juan Combined Cycle Project.

These permits may contain additional requirements, including reporting requirements. The Private Party should review these permits and associated reports to identify potential compliance issues.

Note that this section is intended to provide a general overview of the types of requirements included in the PSD permits, but the Private Party should consult the terms of the permit and requirements of the appropriate statute and regulations to determine the more detailed obligations applicable to each plant.

J. Notices of Violation

EPA's Enforcement and Compliance History Online ("ECHO") database notes several notices of violation ("NOVs") at the Dagua Power Plant within the last five years. ECHO indicates CAA NOVs for Dagua issued by DNER on May 17, 2016, and on August 28, 2020.

The NOV issued by DNER on August 28, 2020 stated that DNER lacked evidence that PREPA had submitted the Title V semi-annual reports for 2019. On September 1, 2020, PREPA responded to the NOV providing documentation that both reports had previously been submitted to delivered to DNER. In light of the fact that the reports had been submitted, PREPA stated it was in compliance and requested that DNER drop the NOV.

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The NOV issued by DNER on May 17, 2016 alleged that PREPA had not paid the Title V annual fee since December 30, 2014, and thus owed \$2,250,000 (\$750,000 installments due every 6 months). DNER requested payment by June 3, 2016. In response, by letter dated June 2, 2016, PREPA provided check stubs documenting that it had made two of the three \$750,000 payments. For the third payment, PREPA indicated it could not make the payment until DNER issued an invoice, and that it had previously alerted DNER that these invoices were necessary for PREPA to comply with requirements applicable to PREPA. Accordingly, PREPA requested that DNER revoke the NOV.

Associated documentation is included in the Data Room in the Generation→Environmental Reports and Regulatory Matters→GT's-Environmental→Dagauo→Air Compliance Folder.

K. Emergency Generators

Many of PREPA generation facilities have emergency generators. For the facilities that have Title V permits, these emergency generators are generally covered by the Title V permit. However, for generation facilities that do not have Title V permits, PREPA has secured General Permits for Commercial/Industrial Emergency Generators from DNER to cover these emergency generators, which permits must be renewed every five (5) years. PREPA obtains such emergency generator permits for emergency generators at its Culebra and Vieques facilities:

Estación Generacion Electrica Culebra 1 (Hidro-Gas)	2017-159436-PGE-005838
Estación Generacion Electrica Culebra 2 (HidroGas)	2018-222063-PGE-007433
Estación Generacion Electrica Culebra 3 (HidroGas)	2018-222066-PGE-007435
Hidro-Gas Culebra (Turbinas Black Start)	2019-276579-PGE-009979
Vieques Resguardo Eléctrico 1 (GE Hidro Gas)	2016-129329-PGE-004376
Vieques Resguardo Eléctrico 2 (GE Hidro Gas)	2018-231650-PGE-008075
Vieques Black Start (Hidro-Gas)	2019-282533-PGE-010191

L. Noise Pollution Control Regulation

PREPA's generation facilities are subject to the Puerto Rico Regulation for the Control of Noise Pollution. PREPA's facilities are Zone III (industrial facilities) under the regulation, which, among other things, applies different decibel limits depending on the zone of the receptor (residential, commercial, industrial, or quiet) and whether it is daytime or nighttime. Of note, PREPA generation facilities are subject to decibel limits at nearby residential receptors. At nighttime (between 10:00 pm and 7:00 am), the facilities are subject to a limit of 50 decibels. This limit primarily affects PREPA's smaller combustion turbines that are located relatively close to residential communities—Yabucoa, Dagua, Jobos, and Vega Baja. As a result, these power plants generally do not operate during these nighttime hours, except in emergency situations.

PREPA must also respond to noise complaints from citizens by performing noise studies where required. There have not been any complaints or noise studies performed in recent years.

III. Clean Water Act

A. Consent Decree Requirements

The 1999 Consent Decree contains a Clean Water Act Compliance Program that PREPA is required to implement. This program applies to the San Juan, Palo Seco, Costa Sur, and Aguirre power plants. PREPA has paid stipulated penalties under the Clean Water Act Compliance Program in the last several years. For instance, PREPA paid \$2,400, \$4,437.50, and \$4,362.50 in stipulated penalties for Q1, Q2, and Q3 of 2020, respectively, for deviations under the water portion of the Consent Decree. These payments correspond to 12 deviations in Q1, 19 deviations in Q2, and 19 deviations in Q3. In 2019 and 2018, PREPA paid a total of \$13,750 and \$27,725 in stipulated penalties under the water program, respectively. These payments corresponded to 61 deviations in 2019⁴¹ and 95 deviations in 2018. Of the 190 deviations in this time frame (Q1 2018 – Q3 2020), 124 were associated with the San Juan Power Plant. More details are provided above in the Consent Decree section of this white paper, and reports documenting the deviations are available in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→1999 Consent Decree Folder in the Data Room.

As described above, the 1999 Consent Decree is being renegotiated, and it seems likely that DOJ and EPA staff will recommend termination of the Clean Water Act Compliance Program. PREPA expects this program would thus likely not be included in the draft Modified Consent Decree. We note that this recommendation is still subject to review and approval by EPA and DOJ management and approval by the court. In lieu of the Consent Decree provisions, EPA is expected to issue an administrative order requiring compliance with National Pollutant Discharge Elimination System (“NPDES”) effluent limitations at the relevant PREPA power plants.

B. No-Action Assurance Related to Hurricanes

On October 17, 2017, PREPA requested that EPA issue a no-action assurance regarding the enforcement of Clean Water Act provisions applicable to PREPA’s facilities due to the damage wrought by Hurricanes Irma and Maria in September 2017. However, EPA did not issue the requested no-action assurance.

C. Clean Water Act and Water Compliance Overview

The sections below describe PREPA’s major Clean Water Act and water-related compliance obligations, and provide a high level overview of potential noncompliance issues. The Private Party is directed to the Data Room for further information, which contains numerous reports submitted to regulators regarding PREPA’s water-related compliance.

⁴¹ Note that for Q3 of 2019, the stipulated penalties report states that there are 0 deviations, but that \$3,675 in stipulated penalties was paid for San Juan. In fact, there were 16 deviations for San Juan during that period, and the stipulated penalties report was in error.

1. National Pollutant Discharge Elimination System Requirements and Noncompliance

PREPA has NPDES permits in effect for the Palo Seco, San Juan, Costa Sur, and Aguirre power plants:

- **Palo Seco:** NPDES permit is effective until March 31, 2021 (No. PR0001031). On September 30, 2020, PREPA submitted a timely partial renewal application for the NPDES permit, and requested a 45-day extension of time to submit the remaining supplemental application supporting materials, citing COVID-19 issues. This extension was granted by EPA by email dated September 30, 2020. On November 12, 2020, within the 45-day extension period, PREPA submitted the additional application materials. The next step in processing of the application is for DNER to submit the water quality certificate to EPA.
- **San Juan:** NPDES permit is effective until August 31, 2023 (No. PR0000698).
- **Costa Sur:** NPDES permit is effective until August 31, 2023 (No. PR0001147).
- **Aguirre:** NPDES permit is effective until May 31, 2024 (No. PR0001660).

These permits are located in the folder for each plant in the Generation→Permits and Approvals→Environmental Permits and Approvals Folder in the Data Room.

PREPA has experienced NPDES exceedances and other potential instances of noncompliance at these power plants, which are summarized below.

San Juan:

PREPA has had exceedances of the San Juan NPDES permit effluent limitations, particularly at Outfalls 002 and 003, but also some at Outfall 001. EPA's ECHO database identifies Clean Water Act violations for the San Juan Power Plant dating back to Q4 2017.⁴² The Private Party should review PREPA's monthly discharge monitoring reports ("DMRs") in the Data Room in conjunction with ECHO to identify legitimate exceedances, and/or to identify ECHO-reported exceedances that may be in error. The DMRs are located in the Generation→Environmental Reports and Regulatory Matters→San Juan-Environmental→Reports→Water Reports Folder in the Data Room. PREPA notes that for some of its generation facilities, it has experienced various errors with online DMR reporting, which then are reflected on ECHO.

For Q1 2019-Q3 2020, PREPA's DMRs include more than 15 copper and temperature effluent limitation exceedances, as well as multiple exceedances for free cyanide, dissolved oxygen, pH, nickel, zinc, turbidity, and priority pollutants (copper, nickel, zinc, total cyanide), and an exceedance for mercury. For Q4 2020, ECHO shows exceedances for dissolved oxygen and flow. In 2018, San Juan had multiple exceedances for fecal coliform, dissolved oxygen, temperature, copper, nickel, and pH, and also had an exceedance for mercury and zinc. The DMRs for San Juan for Q1 2016-Q3 2020 are contained in the Data Room and provide more detail on the nature, causes, and corrective actions taken for these exceedances. In the DMRs, PREPA notes that it is constructing an advanced filtration system to reuse waste water treatment plant effluent, which is expected to assist

⁴² ECHO reports on exceedances for the most recent 13 quarters.

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with the copper and nickel issues, among other things. PREPA also notes that it is implementing various improvements to its oil water separator as a part of the San Juan Waste Water Treatment Plant Improvement Project, which is expected to help with issues related to fecal coliform and other pollutants. The status of this project is described below.

EPA has conducted several recent inspections at San Juan.

Between February 27, 2018 and March 2, 2018, EPA conducted Compliance Sampling Inspections at Aguirre, San Juan, Palo Seco, and Costa Sur to evaluate NPDES compliance. During the San Juan inspection, EPA sampling results showed copper (Outfall 002) and fecal coliform above the acceptable maximum limits. By letter dated August 30, 2018, PREPA responded to the inspection and indicated that it was taking several corrective actions, including that it was designing improvements in the stormwater pipeline system and oil water separator for the Outfall 002 drainage area as part of the San Juan Wastewater Treatment Plant Improvement Project, and was constructing a new Advanced Water Treatment System to reuse the process water of Outfall 002 (discussed below).

In addition, during the inspection, EPA also found that (1) oil and grease samples were being collected incorrectly; (2) the portable pH/temperature meter used to obtain laboratory temperature data for the DMRs lacks a correction factor; (3) the settleable solids (“SS”) test was conducted incorrectly; (4) the sampling point for Outfall 002 is not representative of the overall discharge; and (5) the magnetic flow meters (“magmeter”) at Outfall 605 and Outfall 002 do not have certified calibration sticks and should be calibrated once per year. In its August 30, 2018 response, PREPA identified the following corrective actions: (1) PREPA will create a implement formal training to correct oil and grease sampling practices and improve sampling techniques for laboratory personnel; (2) PREPA will integrate a correction factor into the temperature readings; (3) PREPA will change its SS test procedures; (4) PREPA disagrees that the sampling point for Outfall 002 is not representative, as the sampling point was established by EPA and DNER, and the current sampling point is representative; and (5) PREPA is requesting quotes for the purchase and installation of magmeters and also has contracted for calibration certification services. PREPA has not received further correspondence from EPA regarding this inspection.

Previously, on August 15, 2017, EPA conducted a NPDES compliance evaluation inspection of the San Juan Power Plant. EPA reviewed PREPA’s DMRs for August 2015-August 2017, and found that PREPA had reported effluent limit exceedances. The most frequently exceeded parameters were fecal coliforms, copper, cyanide, nickel, temperature, and dissolved oxygen. The inspector also reviewed PREPA’s Storm Water Pollution Prevention Plan (“SWPPP”) and found it to be complete and accurate, and also found that the Best Management Practices (“BMPs”) described in the plan had been implemented at the facility. EPA issued an inspection report on July 23, 2018, which summarizes PREPA’s exceedances. EPA also performed a NPDES inspection in 2012. The reports for these inspections are located in the Generation→Environmental Reports and Regulatory Matters→ San Juan-Environmental→Regulatory Matters→Water Compliance→NPDES Inspections Folder in the Data Room. An inspection had been scheduled for March 2020, but was cancelled due to COVID-19 concerns.

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Historically, on February 25, 2010, EPA issued Administrative Compliance Order (“AO”) CWA-02-2010-3119, in which it alleged violations of the O&M requirements applicable to the San Juan industrial wastewater treatment plant and stormwater collection and discharge system, as well as effluent limit exceedances. These exceedances were primarily related to nickel, copper, fecal coliform, pH, temperature, dissolved oxygen, and flow, and primarily associated with Outfalls 002 and 003. On March 31, 2010, PREPA submitted a compliance plan. By letter dated October 6, 2010, PREPA informed EPA that it had completed the activities required in the compliance plan.

As a control measure, PREPA developed the San Juan Waste Water Treatment Plant (“SJ WWTP”) Improvement Project (EQB Project No. C7209640), which was approved and granted \$4.5 million from the State Revolving Fund. The main purpose of the project is to reuse the Outfall 002 and 003 process wastewaters, leaving these discharges as containing stormwater. The project is currently under construction, and its objective is to improve San Juan’s Clean Water Act compliance and to reduce exceedances. The project has six phases, which are summarized as follows:

Phase	Description of Phase	Status
Phase I	Reuse of Feedwater Heaters Condensate Process Wastewater	Completed
Phase II	Rehabilitation of Wastewater Treatment Plant Retention Tank 3	Completed
Phase II-B	New Multimedia Filters Water Treatment Plant	Under Bid Process; Estimated Completion: March 2022
Phase III	Rehabilitation of Effluent Collection Station	60% Complete; Undergoing contract amendments (RG Engineering); Estimated Completion: May 2021
Phase IV	Advance Treatment Systems – Reverse Osmosis and Ultrafiltration	Under Construction, but Detained/Subject to Legal Dispute (ESI Inc.) Estimated Completion: August 2021
Phase V	Rehabilitation of the Stormwater Drainage System and Oil Water Separators	Design process – As Built Drawings (Tetra-Tech)
Phase VI	Rehabilitation of Condensate Tanks 5 & 6	Completed

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Costa Sur Power Plant:

EPA's ECHO database identifies exceedances for Costa Sur beginning Q1 2018, but multiple of the identified exceedances appear to be in error. For Q1 2018 and Q2 2018, ECHO shows exceedances of the chlorine limit. However, PREPA's records and DMRs do not show exceedances of chlorine for Q1 and Q2 of 2018. An addendum report submitted by PREPA to EPA explains that the discrepancy appears to be due to the use of incorrect units for chlorine in NetDMR. The Private Party should review PREPA's DMR reports in the Data Room in conjunction with ECHO to identify legitimate exceedances, and/or to identify ECHO-reported exceedances that may be in error. The DMRs are located in the Generation→Environmental Reports and Regulatory Matters→Costa Sur-Environmental→Reports→Water Reports Folder in the Data Room.

For much of 2020, equipment for sampling and testing was unavailable at Costa Sur due to the January 2020 earthquakes and the significant destruction wrought at Costa Sur. For Q4 2020, ECHO shows temperature and copper exceedances. For 2019, PREPA's DMRs show several temperature exceedances and two copper exceedances.

EPA has conducted several recent inspections at Costa Sur.

Between February 27, 2018 and March 2, 2018, EPA conducted Compliance Sampling Inspections at Aguirre, San Juan, Palo Seco, and Costa Sur in order to evaluate NPDES compliance. During the Costa Sur inspection, on February 27, 2018, EPA sampling results indicated that the pH of the discharged effluent from Outfall 001F was 10.93 (above the permit maximum allowable level of 9.0). In addition, the temperature readings taken on the first and second days of the inspection were 95°F (35°C) and 96.8°F (36°C), respectively. By letter dated August 30, 2018, PREPA indicated that, as part of its corrective action for the pH exceedance associated with Outfall 001F, PREPA had ordered new spare parts for replacing all the cells for the pH meters at the wastewater treatment plant, and a new calibration procedure was implemented. For the temperature, PREPA explained that the cooling water temperatures during both days of the inspection were in compliance with both the then-effective Costa Sur NPDES Permit, which had established an interim temperature limit of 107°F (41.7°C), as well as the new NPDES permit which includes a temperature limit of 106°F (41.1°C) for Outfall 001 in the new NPDES Permit (effective Sept. 1, 2018) that must not be exceeded more than four days per year.⁴³

In addition, EPA also found during its inspection that (1) chlorine was present in a sample that was to be analyzed for PCBs; (2) the temperature monitoring location for Outfall 001F was not representative; (3) the magmeter used to monitor discharge from the effluent tank did not have a certified calibration stick and should be calibrated once a year; and (4) oil and grease samples were being collected incorrectly. In its August 30, 2018 response, PREPA identified the following corrective actions: (1) PREPA's contracted laboratory, as per internal standard procedures and methods, evaluate PCB samples for chlorine content and add the proper preservatives to eliminate any chlorine presence. Nonetheless, PREPA will establish a verification process to identify chlorine in the PCB samples prior to sending them to the laboratory; (2) PREPA is requesting quotes for the purchase and installation of a new temperature monitoring equipment at the wastewater treatment

⁴³ During such four events the difference between intake water temperature and the discharge temperature must not exceed 18°F (10°C).

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effluent outfall; (3) a new cell was installed for the magmeter monitoring equipment and a complete calibration was performed; (4) PREPA will create a implement formal training to correct oil and grease sampling practices and improve sampling techniques for laboratory personnel. PREPA has not received further correspondence from EPA regarding this inspection.

On February 18, 2018, EPA conducted another inspection at Costa Sur, and sampling of the discharge of Tank 3 resulted in a pH reading of 10.8 (the parameters in the permit require a pH of 6.0-9.0). PREPA concluded that the deviation was due to the fact that the pH meter cell of the valve had a defect. PREPA subsequently engaged in various corrective actions, including buying new cells and replacing the pH meter.

In addition, on August 16, 2017, EPA conducted a Clean Water Act inspection at Costa Sur, and subsequently issued an inspection report. The report noted an exceedance of the copper limit at Outfalls 002 and 003 in October 2016. EPA has not taken any subsequent follow-up action regarding these inspections. An inspection had been scheduled for March 2020, but was cancelled due to COVID-19 concerns.

The reports for these inspections are located in the Generation→Environmental Reports and Regulatory Matters→Cost Sur-Environmental→Regulatory Matters→Water Compliance→NPDES Inspections Folder in the Data Room.

EPA's ECHO database also identifies one formal Clean Water Act enforcement action from March 20, 2014. This was related to a March 2014 Administrative Order on Consent ("AOC") (Docket No. CWA-02-2014-3104) executed between EPA and PREPA. EPA and PREPA entered into the AOC to allow PREPA to install a reverse osmosis treatment technology at Costa Sur. The AOC also allowed PREPA to temporarily discharge backwash and brine wastewater resulting from the reverse osmosis treatment through Outfall 001 into the Caribbean Sea in the absence of a NPDES permit. On March 2, 2015, PREPA commenced a Pilot Test for a Reverse Osmosis Plant System, which is now in use at the plant. On March 3, 2016, PREPA submitted the final summary report on the Pilot Test for the Reverse Osmosis Plant System to EPA. On June 28, 2018, EPA issued a letter terminating the AOC, and finding that PREPA had complied with the substantial requirements of the AOC. EPA's letter also noted that EPA had issued a revised NPDES permit to PREPA (effective September 1, 2018) that authorized the discharge of the backwash and brine wastewater resulting from the reverse osmosis treatment through Outfall 001. Relevant documentation is in the Data Room in the Generation→Environmental Reports and Regulatory Matters→Cost Sur-Environmental→Regulatory Matters→Water Compliance→Administrative Order on Consent Folder.

Palo Seco Power Plant:

EPA's ECHO database identifies Clean Water Act violations for Palo Seco dating back to Q4 2017. However, as with Costa Sur, in the past, some of the flagged exceedances previously reported on ECHO are in error. The Private Party should review PREPA's DMR reports in the Data Room in conjunction with ECHO to identify legitimate exceedances, and/or to identify ECHO-reported exceedances that may be in error. The DMRs are located in the Generation→Environmental Reports and Regulatory Matters→Palo Seco-Environmental→Reports→Water Reports Folder in the Data Room.

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For Q1 2019-Q3 2020, PREPA's DMRs show about a dozen copper effluent limitation exceedances, as well as several free cyanide and temperature exceedances. For Q4 2020, ECHO shows TSS and copper exceedances. For 2018, PREPA's DMRs indicate that Palo Seco had about a half dozen exceedances of copper, as well as an exceedance of temperature, nickel, chloroform, and phthalates.

EPA has conducted several recent inspections at Palo Seco.

On March 12, 2020, EPA conducted a NPDES compliance evaluation inspection of the Palo Seco Power Plant. EPA issued an inspection report letter on April 27, 2020, which summarizes PREPA's exceedances and the findings of the inspection. EPA reviewed past PREPA DMRs, and found that PREPA had reported exceedances over the reviewed two year period, primarily for copper, nickel, and temperature. EPA's inspection letter also found that:

- (1) Sludge retention lagoons had almost reached their storage capacity level, and were in need of sludge removal and disposal.
- (2) Housekeeping and implementation of BMPs to control pollutants from storm water discharge run off associated with industrial activities and materials stored throughout some areas of the Facility needed to be improved. Industrial materials (i.e., metal structural pieces) were observed outside and exposed to rain in two areas: north of the Facility's main power generating units and north of the recently installed diesel-powered generators. In these two areas, the EPA observed a lack of inlet protection for storm sewer catch basins, which collect runoff.
- (3) PREPA's SWPPP had not been revised to update the personnel positions associated with the Stormwater Pollution Prevention Team and changes in industrial equipment.

On August 18, 2020, PREPA responded to the inspection findings. PREPA's response provided (1) documentation that the sludge in the retention lagoons had been cleaned; (2) photographic documentation showing that PREPA had taken various actions to clean and protect the areas located in the north of the Facility's main power generating units and north of the recently installed diesel-powered generators; and (3) updated information for the SWPPP.

Between February 27, 2018 and March 2, 2018, EPA conducted Compliance Sampling Inspections at Aguirre, San Juan, Palo Seco, and Costa Sur in order to evaluate NPDES compliance. Analytical results obtained by EPA during the Palo Seco inspection showed that copper levels from Outfall 001 exceeded regulatory limits. By letter dated August 30, 2018, PREPA stated that as a corrective action it had reinforced its Best Management Practices ("BMPs") program to keep the areas clean and performed the necessary adjustments to prevent metal contribution to the discharge. PREPA has not received further correspondence from EPA regarding this inspection.

Previously, on August 9, 2017, EPA conducted a NPDES compliance evaluation inspection of the Palo Seco plant. EPA reviewed PREPA's DMRs for August 2015-August 2017, and found that PREPA had reported exceedances over the two year period, primarily for copper, sulfates, nickel, and temperature. The inspector also reviewed PREPA's SWPPP and found that it had been recently revised, but that listed personnel needed to be updated. EPA issued an inspection report on July 23, 2018, which summarizes PREPA's exceedances.

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The reports for these inspections are located in the Generation→Environmental Reports and Regulatory Matters→ Palo Seco-Environmental→Regulatory Matters→Water Compliance→NPDES Inspections Folder in the Data Room.

Aguirre Power Plant:

EPA's ECHO database identifies Clean Water Act violations for Aguirre dating back to Q4 2017. However, some of the reported information is in error, particularly the information that predates the issuance of the renewed NPDES permit for Aguirre in mid-2019. For instance, ECHO indicates that PREPA did not submit DMRs in 2018 and Q1 of 2019. However, PREPA has submitted these DMRs and they are included in the Data Room. PREPA submitted the DMRs in paper format, rather than through the online eDMR portal, because EPA's electronic reporting system did not conform to Aguirre's NPDES permit reporting requirements. This lack of conformity was resulting in errors in the online reporting system. Following issuance of the renewed NPDES permit for Aguirre in 2019, the reporting problems were rectified and PREPA is once again submitting DMRs electronically. From mid-2019 onward, ECHO shows exceedances for flow, copper, pH, temperature, and TSS. The Private Party should review PREPA's DMR reports in the Data Room in conjunction with ECHO to identify legitimate exceedances, and/or to identify ECHO-reported exceedances that may be in error. The DMRs are located in the Generation→ Environmental Reports and Regulatory Matters→ Aguirre-Environmental→Reports→Water Reports Folder in the Data Room.

For Q1 2019-Q3 2020, PREPA's DMRs show more than a dozen pH exceedances, eight copper exceedances, several flow and temperature exceedances, and one TSS exceedance. For Q4 2020, ECHO shows copper and flow exceedances. For 2018, PREPA's DMR reports indicate that Aguirre had three pH exceedances and a temperature exceedance.

EPA has conducted several recent inspections at Aguirre.

Between February 27, 2018 and March 2, 2018, EPA conducted Compliance Sampling Inspections at Aguirre, San Juan, Palo Seco, and Costa Sur in order to evaluate NPDES compliance. Analytical results obtained by EPA during the Aguirre inspection were within regulatory limits, but EPA found that the contract laboratory used by Aguirre did not provide the required glassware for oil and grease samples: wide mouth 1 liter glass containers, as specified in Standard Method 5520 and EPA Method 1664A. PREPA responded to this finding by letter dated August 30, 2018. PREPA explained its position that EPA's Method 1664A does not specify the wide-mouth glass bottle requirement. Nevertheless, although PREPA maintained that it had been following the EPA method, PREPA stated that it would address EPA personnel's suggestion to use wide-mouth glassware. PREPA has not received further correspondence from EPA regarding this inspection.

Previously, on August 8, 2017, EPA conducted a NPDES compliance evaluation inspection of the Aguirre plant. EPA reviewed PREPA's DMRs for August 2015-August 2017, and found that PREPA had reported a handful of exceedances over the two year period: three pH exceedances and one exceedance each of temperature, flow, and TSS. The inspector also reviewed PREPA's SWPPP and found it to be complete and accurate. EPA issued an inspection report on July 23, 2018, which summarizes PREPA's exceedances. An inspection had been scheduled for March 2020, but was cancelled due to COVID-19 concerns.

The reports for these inspections are located in the Generation→Environmental Reports and Regulatory Matters→ Palo Seco-Environmental→Regulatory Matters→Water Compliance→ NPDES Inspections Folder in the Data Room.

2. Clean Water Act Section 316(a) Issues

DNER has issued Water Quality Certificates with alternate temperature limits for cooling water discharge from the San Juan, Costa Sur, and Palo Seco plants. For Aguirre, DNER issued a Water Quality Certificate with an interim mixing zone for cooling water discharge. Thermal effluent limitations have also been included in PREPA's NPDES permits for these four facilities under Section 316(a) of the Clean Water Act.⁴⁴

- **San Juan:** The NPDES permit was issued by EPA in June 2018 with an Alternate Temperature Limit of 103°F for the cooling water discharge. No further projects are required to comply with Section 316(a) of the Clean Water Act.
- **Costa Sur:** The NPDES permit was issued by EPA in June 2018 with an Alternate Temperature Limit of 106°F for the cooling water discharge. No further projects are required to comply with Section 316(a) of the Clean Water Act.
- **Palo Seco:** The NPDES permit was issued by EPA in April 2016 with an Alternate Temperature Limit of 104.7°F for the cooling water discharge. No further projects are required to comply with Section 316(a) of the Clean Water Act.
- **Aguirre:** DNER issued a Water Quality Certificate with an interim mixing zone for cooling water discharge. The NPDES final permit was issued by EPA in 2019 with a Temperature Limit of 105.98°F for the cooling water discharge from Outfall 001. No further projects are required to comply with Section 316(a) of the Clean Water Act.

3. Clean Water Act Section 316(b) Issues

Under Section 316(b) of the Clean Water Act, EPA has issued regulations to ensure that cooling water intake structures reflect the best technology available for minimizing adverse environmental impact.⁴⁵ The regulations are designed to reduce injury to and death of fish and other aquatic life caused by cooling water intake structures at existing power plants and factories. EPA's rulemaking under Section 316(b) proceeded in several phases, which were subject to legal challenge. On remand, EPA published a proposed Section 316(b) rule in April 2011, and published the final rule on August 15, 2014.⁴⁶

The Section 316(b) regulation has three primary components. First, existing facilities that have a design intake flow of greater than 2 million gallons per day, and actually withdraw at least 25

⁴⁴ See 33 U.S.C. § 1326.

⁴⁵ See 33 U.S.C. § 1326(b).

⁴⁶ See *National Pollutant Discharge Elimination System—Final Regulations To Establish Requirements for Cooling Water Intake Structures at Existing Facilities and Amend Requirements at Phase I Facilities; Final Rule*, 79 Fed. Reg. 48,300 (Aug. 15, 2014).

percent of their water exclusively for cooling purposes, are required to reduce impingement. The design, location, construction, and capacity of the permittee's cooling water intake structures need to reflect the best technology available for minimizing adverse environmental impacts from the impingement and entrainment of various life stages of fish (e.g., eggs, larvae, juveniles, adults) by the cooling water intake structures. To comply with this requirement, a facility has the option of selecting from one of seven alternatives for the best technology available ("BTA") for complying with the impingement mortality ("IM") standards. These facilities are also subject to BTA standards for entrainment, which are established for each intake on a site-specific basis.⁴⁷

Second, existing facilities that withdraw very large amounts of water (at least 125 million gallons per day) would be required to conduct and provide an Entrainment Characterization Study with their permit applications to help the permitting authority determine what site-specific controls, if any, are required to reduce the number of aquatic organisms sucked into cooling water systems (i.e., entrainment).⁴⁸

Third, new units at an existing facility would be required to reduce the design intake flow for the new unit, at a minimum, to a level commensurate with that which can be attained by the use of a closed-cycle recirculating system, which may be achieved by incorporating a closed-cycle system into the design of the new unit or making other design changes with equivalent results.

PREPA has negotiated a 316(b) compliance strategy with the EPA. The compliance strategy for PREPA as a whole has been to focus on the Costa Sur and Aguirre power plants in the short-term, with a longer-term implementation for the San Juan and Palo Seco power plants. In general, PREPA has already conducted a variety of testing and prepared various reports related to potential compliance with Section 316(b). Many of these reports and testing were prepared prior to the issuance of PREPA's current NPDES permits, which were issued in the 2018-2019 timeframe. Each of the recently-issued NPDES permits contains a prospective schedule for PREPA compliance with the requirements of Section 316(b), which are summarized below. However, the NPDES permits afford PREPA the option to rely on previously submitted reports or data and/or to supplement/update the previously submitted items. PREPA plans to use various studies and reports it prepared prior to the issuance of these permits to demonstrate compliance with certain requirements. A high-level overview of the status of each plant is described below. Additional information is included in the Data Room in the folder for each power plant.

Costa Sur Power Plant:

In 2012, PREPA submitted to EPA a Plan of Action ("POA") for Costa Sur. In January 2015, PREPA finished the installation of an Aquatic Barrier at the intake structure for Units 5 and 6, consistent with the POA. PREPA also installed a Hydrolox Traveling Screen in the Unit 6 intake area. PREPA performed verification sampling for impingement and entrainment at the intake area for Units 5 and 6, and a study of the Hydrolox Traveling Screen and Aquatic Barrier was conducted by URS in 2016 (which is in the Data Room). Impingement results were favorable for the Hydrolox Traveling Screen, but were inconclusive regarding the effectiveness of the Aquatic Barrier.

⁴⁷ See 40 C.F.R. § 125.94.

⁴⁸ See 40 C.F.R. § 122.21(r)(9).

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Subsequently, the Aquatic Barrier was destroyed by hurricanes, and PREPA later found that the Hydrolox Traveling Screen was not working as intended at Costa Sur.

Accordingly, PREPA further evaluated which technologies to use for compliance at Costa Sur. To this end, in 2018, Tetra Tech conducted a review of the seven BTA impingement compliance options identified in EPA's regulations, and concluded that "[m]odified traveling water screens with fine-mesh overlays appear to be the most cost-effective alternative for meeting the impingement mortality reduction and entrainment compliance standards" at Costa Sur. Tetra Tech's report also recommended that "[i]n order to confirm that modified traveling water screens with a fish return system and fine-mesh overlays is the preferred alternative for compliance with the 316(b) impingement and entrainment standards, PREPA should conduct a Supplemental Impingement and Entrainment Characterization Study. This study is required by the new NPDES Permit as part of the Source Water Baseline Biological Characterization Study." The Tetra Tech report also outlines additional reports PREPA should prepare that are required by the current NPDES permit (i.e., the permit effective Sept. 1, 2018).

At present, PREPA's planned compliance strategy is to install new dual flow traveling screens for compliance with the IM and entrainment requirements. PREPA is also planning to install a new discharge canal channel for a fish return system. More specifically, PREPA plans to install modified dual flow traveling screens with a low pressure organism wash bucket and a dedicated fish return system via a new outfall separate from existing debris trough selected system. The engineering design is about 90% complete for this work. Following completion of the design work, PREPA will need to obtain necessary permits, and then proceed to a bidding process for the work. For instance, permits will likely be needed from the U.S. Army Corps and/or from local entities (e.g., construction permits). Reports by Tetra Tech and other information related to the status of the project and Section 316(b) compliance are located in the Generation → Environmental Reports and Regulatory Matters → Cost Sur-Environmental → Regulatory Matters → Water Compliance → Section 316(b) Folder in the Data Room.

As noted by Tetra Tech, the recently-issued Costa Sur NPDES permit requires PREPA to collect and submit various information and studies related to its Section 316(b) compliance by certain dates. By six months after the effective date of the permit (Sept. 1, 2018), PREPA was required to submit an anticipated schedule for submittals required by the permit. Among other things, by 4.5 years after the effective date of the permit (Sept. 1, 2018), PREPA must submit a Status Report indicating its progress toward choosing its preferred IM standard compliance method under 40 C.F.R. §125.94(c), i.e., which one of the seven BTA alternatives it will select for compliance. By 4.5 years after the effective date of the permit, PREPA must also submit an entrainment characterization study and other data and studies. EPA has indicated to PREPA that it is currently up to date.

PREPA submitted a document containing its strategy for compliance at the four plants on September 5, 2019.

Aguirre Power Plant:

Similarly to Costa Sur, in 2018, Tetra Tech prepared a Traveling Water Screen Evaluation for Aguirre. The evaluation report concluded that "[m]odified traveling water screens with fine-mesh

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overlays appear to be the most cost-effective alternative for meeting the impingement mortality reduction and entrainment compliance standards at the Aguirre Power Plan Complex.” Tetra Tech’s report also recommended that “[i]n order to confirm that Modified Traveling Water Screens with a fish return system and fine-mesh overlays is the preferred alternative for compliance with the 316(b) impingement and entrainment standards, PREPA should conduct an Impingement and Entrainment Characterization Study. This study is required by the 316(b) rule as part of the Source Water Baseline Biological Characterization Study.” The Tetra Tech report also outlines additional reports PREPA should prepare that are required by the current NPDES permit. The Private Party should review the December 2018 report prepared by Tetra Tech for more information.

Similarly to Costa Sur, for Aguirre, PREPA has selected modified dual flow traveling screens with a low pressure organism wash bucket and dedicated fish return system via a new outfall separate from existing debris trough selected system. The engineering design for this work is 90% complete for Aguirre. Following completion of the design work, PREPA will need to obtain necessary permits, and then proceed to a bidding process for the work. For instance, permits will likely be needed from the U.S. Army Corps and/or from local entities (e.g., construction permits).

Reports by Tetra Tech and other information related to the status of the project and Section 316(b) compliance are located in the Generation→ Environmental Reports and Regulatory Matters→ Aguirre-Environmental→ Regulatory Matters→ Water Compliance→ Section 316(b) Folder in the Data Room.

The Aguirre NPDES permit (effective date June 1, 2019) requires PREPA to collect and submit various information and studies related to its Section 316(b) compliance by certain dates. According to the 2019 final NPDES permit, in a letter dated April 9, 2018, PREPA requested an alternate schedule to submit the information required by 40 C.F.R. § 122.21(r), which provides the requirements for applications for facilities with cooling water intake structures. The final permit indicates that “EPA has granted this alternate schedule and is requiring all application materials to be submitted by [[Effective Date of Permit] + 4.5 years].” Among other things, by 4.5 years after the Effective Date of Permit, the permittee shall submit a Status Report indicating its progress toward choosing its preferred IM Standard compliance method under 40 CFR § 125.94(c), as well as various studies. In addition, the final permit provides that “[b]y [[Effective Date of Permit] + 6 Months], the permittee shall submit an anticipated schedule of submittals” for the items listed in the permit. In this schedule, PREPA must clearly identify to EPA if it is relying on previously submitted reports or data, or whether it plans to supplement previously submitted items.

The final permit also identifies and requires certain interim BTA measures to reduce entrainment and impingement mortality. These include the requirement that PREPA operate all existing technology and operational measures including: combined cycle units designed with closed cycle cooling; smooth 1/4 inch square mesh dual-flow traveling screens with fish return system; cooling water intake structure designed with low approach velocities; period scheduled maintenance shutdowns of Units 1 and 2; and continuous operation of the dual-flow traveling screens. PREPA must also conduct weekly visual inspections or employ remote monitoring devices to ensure that any technologies established as the BTA are maintained and operated to function as designed, must submit an annual certification statement to EPA, and keep records in accordance with EPA regulations.

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PREPA submitted a document containing its strategy for compliance at the four plants on September 5, 2019

San Juan Plant:

PREPA is currently planning to utilize a similar compliance strategy for San Juan Units 5-8 as it is planning to use for Costa Sur and Aguirre: modified dual flow traveling screens with a low pressure organism wash bucket and dedicated fish return system via a new outfall separate from existing debris trough selected system. The design work for San Juan is about 30% complete. Currently, PREPA plans for the installation of modified dual flow traveling screens and a fish return trough to be performed in two phases. Phase 1 will entail the replacement of existing screens with modified dual flow screens. Phase 2 will entail the installation of the fish return trough. This strategy is intended to expedite the replacement of the screens in order to improve operations as soon as possible. PREPA has not yet selected its chosen compliance method for San Juan Units 9-10.

Reports by Tetra Tech and other information related to the status of the project and Section 316(b) compliance are located in the Generation → Environmental Reports and Regulatory Matters → San Juan-Environmental → Regulatory Matters → Water Compliance → Section 316(b) Folder in the Data Room.

The San Juan NPDES permit requires PREPA to collect and submit various information and studies related to its Section 316(b) compliance by certain dates. By 6 months after the effective date of the permit (Sept. 1, 2018), PREPA is required to submit an anticipated schedule for submittals required by the permit. Among other things, by 48 months after the effective date of the permit (Sept. 1, 2018), PREPA must submit a Status Report indicating its progress toward choosing its preferred IM standard compliance method under 40 C.F.R. §125.94(c), i.e., which one of the seven BTA alternatives it will select for compliance. PREPA must also submit an entrainment characterization study by that date. By 54 months after the effective date of the permit, PREPA must submit other data and studies.

PREPA submitted a document containing its strategy for compliance at the four plants on September 5, 2019

Palo Seco Power Plant:

Originally, PREPA had been planning to modify the Hydrolox traveling screen that had been in use at Costa Sur for use at Palo Seco. However, after evaluating the Palo Seco intake bay dimensions, PREPA discovered that the Hydrolox traveling screen from Costa Sur will not fit into the existing screen bay at Palo Seco, and major modifications to the Hydrolox screen would be necessary to use it at Palo Seco. Accordingly, PREPA does not anticipate using the Hydrolox screen at this time. A compliance strategy thus needs to be developed for the Palo Seco Power Plant. While PREPA may decide to utilize the same type of dual flow traveling screen and fish return system for Palo Seco as it is planning to use for its other plants, this is still being evaluated and design work for Palo Seco is still in early phases.

The Palo Seco NPDES permit requires PREPA to collect and submit various information and studies related to its Section 316(b) compliance by certain dates. By September 30, 2016, PREPA was required to submit an anticipated schedule for submittals required by the permit. Among other

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things, by September 30, 2020, the permit requires PREPA to submit a Status Report indicating its progress toward choosing its preferred IM standard compliance method under 40 C.F.R. §125.94(c), i.e., which one of the seven BTA alternatives it will select for compliance. By September 30, 2020, PREPA must also submit an entrainment characterization study and other data.

Information was submitted as a part of PREPA's NPDES permit renewal application. PREPA also submitted a document containing its strategy for compliance at the four plants on September 5, 2019.

As required by the permit, PREPA submitted its anticipated compliance schedule on September 29, 2016, which is included in the Data Room. This schedule indicates that PREPA has already completed multiple of the required studies, and provides the dates by which PREPA plans to complete the remaining studies and submittals required by the NPDES permit.

Reports by Tetra Tech and other information related to the status of the project and Section 316(b) compliance are located in the Generation→ Environmental Reports and Regulatory Matters→ Palo Seco-Environmental→ Regulatory Matters→ Water Compliance→ Section 316(b) Folder in the Data Room.

4. Water Supply Issues

PREPA's power generation, especially from its steam power plants, requires high volumes of water. For the San Juan and Palo Seco power plants, PREPA uses potable water from the Puerto Rico Aqueduct and Sewer Authority ("PRASA") as raw water to generate electricity.

For Costa Sur, PREPA's water comes from a water well system owned and operated by PREPA and from EcoEléctrica's Multistep Distillation Plant.

For Aguirre, water comes from a water well system owned and operated by PREPA. However, the supply capacity of these water wells has diminished over the years due to urban expansion in the Municipality of Salinas, causing salt water intrusion to the aquifer. As a result, PREPA is developing and constructing infrastructure to supply raw water from the Patillas Irrigation Channel to Aguirre, while keeping the current well water supply system as a backup. The raw water will be treated at Aguirre using ultrafiltration, reverse osmosis, and demineralization methods. The project also provides for the reuse of the condenser cooling water that is currently discharged through the Aguirre outfalls under the NPDES permit. Phase I (Pipeline Construction from the Irrigation Channel) was completed in 2018. Phase II (Ultrafiltration System Building) and Phase III (Retention Ponds Construction) have also been completed. The specifications for Phase IV (Pipeline Interconnections Inside the Plant and Water Treatment Equipment Acquisition) were undergoing review as of November 2020, and expected to go to be published for bidding in May 2021. This phase is expected to be completed by January 2023. Phase V (**Rehabilitation of the Retention Tank and Final Effluent Tank, Improvements to Water Transfer Pipes, Controls, and Design, and Construction of a Pumping Station**) work was awarded to RG Engineering, Corp. in December 2018, and construction began in July 2019. As of November 2020, this phase was about 60% complete. Construction was supposed to be completed by July 2021, but may be delayed due to COVID-19. And finally, Phase V-B (Replacement of Process Water Treatment Plant Multi-Media Filter System) was in the bidding stage as of November 2020, and was expected to begin construction in May 2021 and to be completed by May 2022.

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Various PREPA generation facilities also have water extraction franchises issued by the Puerto Rico DNER. Costa Sur, Aguirre, and Cambalache have water extraction franchises for fresh water, while Costa Sur, Aguirre, San Juan, and Palo Seco have water extraction franchises for sea water. The Aguirre franchise expires in March 2021. PREPA applied for a renewal permit on December 2, 2020.

These franchises are located in the folder for each plant in the Generation→Permits and Approvals→ Environmental Permits and Approvals Folder in the Data Room.

Pursuant to the terms of its franchises, PREPA must submit various reports to DNER. PREPA must submit annual water usage reports for San Juan and Palo Seco, and must submit more frequent reports for the other power plants. PREPA must submit monthly water usage reports for Aguirre, Cambalache, and Costa Sur, and must also conduct periodic water analysis testing for those facilities. These franchise reports are located in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→Reports→Water Reports→Water Franchise Reports Folders in the Data Room.

5. Clean Water Act Section 311 Issues

a. Spill Prevention, Control, and Countermeasure (“SPCC”) Program

Under Section 311 of the Clean Water Act, EPA has issued oil pollution prevention regulations setting forth requirements for prevention of, preparedness for, and response to oil discharges.⁴⁹ To prevent oil from reaching navigable waters and adjoining shorelines, and to contain discharges of oil, the regulations require facilities to develop and implement SPCC plans, and establish procedural and equipment requirements. PREPA has prepared SPCC plans for its power plants. These plans must be updated every five (5) years. PREPA’s program also includes overhauls to dikes and fuel tanks.

To meet its obligations under the Clean Water Act and the 1999 Consent Decree, PREPA continues to implement corrective measures at its facilities. Pursuant to the terms of the 1999 Consent Decree, PREPA was required to submit SPCC plans for Aguirre, San Juan, Palo Seco, and Costa Sur, and to implement a Spill Prevention Maintenance and Construction Program (“SPMCP”). In 2003, PREPA submitted an updated version of the SPCC plans for the subject plants, which EPA approved. As of December 2009, PREPA completed all compliance projects under the SPMCP of the 1999 Consent Decree in accordance with the established scope of work, and submitted its final report for the program.

PREPA updated the SPCC plans for Aguirre, San Juan, Palo Seco, Costa Sur, Cambalache, and Mayaguez in 2015. Five-year updates to these plans were thus due in 2020; however, the COVID-19 pandemic has complicated and delayed PREPA’s efforts to complete the updates for these plans. Reviews of the SPCC plans are in progress. PREPA also has prepared SPCC plans for Yabucoa (dated 2018) and Vieques (dated 2012). PREPA has not yet prepared, and is in the process of preparing, SPCC plans for Culebra, Jobos, Vega Baja, and Daguao. PREPA’s SPCC

⁴⁹ 33 U.S.C. § 1321; 40 C.F.R. Part 112.

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plans for its power plants are located in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→Regulatory Matters→ Water Compliance→SPCC Compliance Folders in the Data Room.

EPA last conducted SPCC inspections at PREPA's generation facilities in the 2013-2015 timeframe. An overarching observation is that, during multiple of the inspections, EPA identified tanks that it deemed overdue for internal and external integrity testing or repairs.⁵⁰ However, at several of the facilities, PREPA is only able to take one tank out of service at a time. Thus, in many of its responses, PREPA indicated that it needed to wait until testing or repairs of a specific tank was completed before it could turn to the overdue tanks identified by EPA. The status of inspections and testing for each power plant is summarized below.

Aguirre Power Plant:

On April 25, 2012, EPA conducted an SPCC field inspection at Aguirre. The inspection report (dated July 2012) noted that PREPA had not completed the required integrity tests for Tanks R1-3 and Tank R-5, vegetation was noted in the dike of Tank R-6, the liner for Tank R-5 was ripped, a tank bottom leak was noted from Tank R-2 (which had been previously noted during an earlier 2010 inspection), certain tanks did not have fail-safe engineered overfill protection, and PREPA failed to update the SPCC plan following changes at the facility, among other things.

On August 17, 2012, PREPA responded to the inspection report. With respect to tank testing, PREPA explained that two tanks had to be kept in service at all times, and that PREPA was already repairing Tank R-3. PREPA explained that it had been monitoring Tank R-2, but that it would need to wait to inspect and rehabilitate Tank R-2 until Tank R-3 returned to service. After Tank R-2, PREPA indicated that it would then proceed to test Tank R-5, and then Tank R-1. With respect to dikes, PREPA indicated that it had removed the vegetation and repaired the liner. PREPA also installed or ordered various overfill protection, and also amended its SPCC plan.

On December 18, 2013, EPA conducted another inspection at Aguirre. The inspection report (dated November 5, 2014) noted various issues, including corrosion issues, vegetation in tank dikes, leaks in Tanks R-1 and R-2 (noted in prior EPA inspections in 2010 and 2012), cracks in the foundations of tanks R-1 and R-2, and oil observed in dikes, among other things. In January 2014, and again in December 2014, PREPA responded to the inspection findings and report. PREPA explained that it had cleaned oil from the dikes, removed the vegetation, corrected corrosion issues, and fixed the foundation cracks. With respect to tank testing, PREPA reiterated that two tanks had to be in service at all times, which had prevented it from testing sooner, but that it had emptied Tank R-2, and was in the process of cleaning this tank to conduct the integrity testing. PREPA said it would empty and test Tank R-1 once Tank R-2 was complete. PREPA submitted a repair and inspection schedule for Tanks R-1, R-2, and R-3, showing that Tank R-2 had been taken out of service. At the time, PREPA has Tank R-1 out of service for cleaning.

⁵⁰ PREPA's SPCC Plans require that aboveground containers (i.e., fuel oil tanks) be regularly inspected and tested in accordance with industry standards, e.g., American Petroleum Institute standard API-653. Integrity testing of aboveground tanks in accordance with API-653 includes both internal and external inspections.

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EPA has not provided additional feedback after PREPA's response, and has not issued any NOVs regarding the SPCC program in connection with its inspections.

In September 2016, PREPA reported to EPA that it had emptied and cleaned Tank R-2. Funds were approved from the Clean Water State Revolving Fund to repair the tank.

Documentation related to the SPCC inspections is located in the Generation→Environmental Reports and Regulatory Matters→Aguirre-Environmental→Regulatory Matters→Water Compliance→SPCC Compliance Folder in the Data Room.

San Juan Power Plant:

On December 4, 2014, EPA conducted an SPCC field inspection at San Juan. On December 30, 2014, PREPA responded to various EPA comments. EPA requested that PREPA submit a timeline for the cleanup and repair of the dike liner and soil around Tank R-3, as well as for the cleanup and repair of Tank R-4. EPA also requested various tank inspection reports, and requested that PREPA provide a schedule for completing repairs identified in those reports. PREPA responded that it planned to complete the requested activities for Tank R-3 by the end of June 2015, and for Tank R-4 by August 2015. PREPA committed to providing the inspection reports and repair schedules requested by EPA once it received the corrected reports from the contractor.

On August 12, 2015, EPA sent PREPA the inspection report and inquired about the status of the items that PREPA had committed to complete. EPA also expressed concern regarding PREPA's inconsistent characterizations regarding the condition of Tank R-4, and stated that "[d]ue to inconsistencies in PREPA's documentation for this tank and the very poor condition of the roof for this tank, EPA will not issue compliance for this facility until a full clean-out and internal inspection is conducted."

On September 17, 2015, PREPA explained the alleged inconsistencies, and provided an updated schedule for inspections and repairs. PREPA explained that it was only planning to conduct the external roof repairs for Tank R-4, rather than conducting the full clean-out and inspection requested by EPA, but that an inspection was due in 2016, in any event. PREPA stated that it would provide the inspection reports requested by EPA and keep EPA abreast of various schedule developments in conducting the work on Tanks R-3 and R-4.

According to PREPA's fuel oil storage tank inspection schedule (as reported to EPA in Sept. 2015), the following tanks were due for internal/external integrity testing:

Tank ID	Inspection Type	Last Inspection	SPCC/API-635 Required Date	Scheduled Date (as Identified by PREPA in Sept. 2015)
D-5	Internal	2007*	2019	2019
	External	2014	2018	2018
D-6	Internal	2007*	2019	2019
	External	2014	2018	2018
R-1	Internal	2003	2023	2023

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	External	2013	2028	2018
R-2	Internal	2002	2015	2015**
	External	2013	2019	2018
R-3	Internal	2012	2017	***
	External	2011	2016	***
R-4	Internal	2004	2016	2016
	External	2011	2026	2016
S-7	Internal	2002	2022	2022
	External	2014	****	2019
S-8	Internal	2002	2022	2022
	External	2014	****	2019
S-9	Internal	2009	2029	2019
	External	2014	2019	2019
S-10	Internal	2002	2014	2014*****
	External	2014	2029	2019

*New tanks, construction completed in 2007.

**PREPA explained that Tank R-2 needed to stay in service until certain units returned to service in light of the fact that Tank R-3 had been out of service.

***As of Sept. 2015, Tank R-3 had been out of service since May 2013.

****As of Sept. 2015, was undetermined, subject to receipt of final inspection report.

*****As of Sept. 2015, S-10 had been out of service since August 2015.

No NOVs have been issued in the aftermath of the inspection.

Documentation related to the SPCC inspections is located in the Generation→Environmental Reports and Regulatory Matters→San Juan-Environmental→Regulatory Matters→Water Compliance→SPCC Compliance Folder in the Data Room.

Palo Seco Power Plant:

On December 19, 2013, EPA conducted an SPCC field inspection at Palo Seco. On January 16, 2014 and March 16, 2014, PREPA responded to various information requests made by EPA related to the inspection. Among other things, EPA noted items that needed to be added to the SPCC plan, and PREPA submitted the requested updates. EPA also noted that certain tanks were overdue for integrity testing. For two tanks, PREPA responded that it needed to wait until it was able to transfer the oil in the tanks to San Juan, and provided an inspection and repair schedule. For a third tank, PREPA explained that it would conduct the required testing once it completed repairs on another tank. EPA also noted an oil leak collecting in a dike; PREPA determined that the source of the leak was a broken flange and ordered a replacement. PREPA also identified several other corrective measures it was undertaking.

On December 4, 2014, EPA conducted a second field inspection at Palo Seco. No new violations were noted during this inspection; however, EPA requested that PREPA submit a schedule for when all of the plant's bulk storage tanks would undergo internal and external integrity testing in accordance with industry standard API 653. On December 30, 2014, PREPA responded providing the requested integrity schedule.

In response, on August 4, 2015, EPA sent PREPA a follow-up letter noting that "[i]t does not appear that the facility is implementing its tank integrity program following the industry standard that

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is referenced in their SPCC Plan,” and identified various tanks that were allegedly overdue for testing (Tanks R-1, R-2, S-1, S-4, D-1) and requested that PREPA keep EPA updated as to the status of this work.

On September 4, 2015, PREPA submitted a response contesting EPA’s characterization that its tanks were overdue for testing. PREPA explained that the tanks were not in fact overdue, and provided details regarding when the tanks were last tested, when the testing was due, and when PREPA planned to conduct the testing. According to PREPA’s fuel oil storage tank inspection schedule (as reported to EPA as of Aug. 2015), the following tanks were due for internal/external integrity testing in the 2016-2025 timeframe:⁵¹

Tank ID	Inspection Type	Last Inspection	SPCC/API-635 Required Date	Scheduled Date (as Identified by PREPA in Aug. 2015)
R1	Internal	2006	2016	2016
	External	2011	2021	2016
R2	Internal	2004	2024	2024
R3	Internal	2002	2022	2020
R4	Internal	2001	2021	2020
S1	Internal	2002	2022	2022
	External	2010	2025	2015
S2	Internal	2014	2024	2024
	External	2014	2019	2019
S4	Internal	2009	2019	2019
	External	2015	2025	2020

No NOVs have been issued in the aftermath of the inspection.

Documentation related to the SPCC inspections is located in the Generation → Environmental Reports and Regulatory Matters → Palo Seco-Environmental → Regulatory Matters → Water Compliance → SPCC Compliance Folder in the Data Room.

Cambalache Power Plant:

On December 3, 2014, EPA conducted an SPCC field inspection at Cambalache. On December 23, 2014, PREPA responded to various EPA comments. Among other things, EPA noted that inspection forms were being insufficiently completed, and requested that PREPA submit an updated tank integrity testing schedule. EPA noted that Tanks R-2 and R-3 had not been integrity tested since the tanks were constructed (1996), and that Tank R-1 had been integrity tested, but the recommended repairs had not been made. PREPA responded that it had conducted additional training for plant personnel, was conducting a bid process to perform the necessary repair activities for Tank R-1, and that it would test Tanks R-2 and R-3 once the repairs for Tank R-1 were complete. PREPA provided a schedule for future inspections for Tanks R-2 and R-3.

⁵¹ For the entire schedule for all of PREPA’s tanks at Palo Seco, please see PREPA’s September 4, 2015 response to EPA. Only the testing identified by PREPA as being due in in the 2016-2025 timeframe is included in this chart.

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On August 25, 2015, EPA sent PREPA an inspection report and again requested the schedule for the tank repairs (without acknowledging that PREPA had previously provided the schedule). PREPA responded on October 5, 2015, explaining that the bidding process was expected to be completed in November 2015 for the Tank R-1 repairs, and reiterated its plan to conduct the inspections for Tanks R-2 and R-3 in April 2016 and October 2017. PREPA emphasized, however, that these inspections could not occur until Tank R-1 was placed back in service.

Tank R-1 was placed back into service on November 13, 2019, and the inspections for Tank R-2/R-3 were completed in September 2020 and they were released for repairs on October 22, 2020.

No NOVs have been issued in the aftermath of the inspection.

Documentation related to the SPCC inspections is located in the Generation→Environmental Reports and Regulatory Matters→Cambalache-Environmental→Regulatory Matters→Water Compliance→SPCC Compliance Folder in the Data Room.

PREPA also notes that on December 28, 2019, there was a diesel spill at Cambalache related to an earthquake on the island. It is PREPA's understanding that this spill was contained to the power plant premises. Documentation related to the spill is located in the Data Room.

Costa Sur Power Plant:

On September 14, 2015, EPA conducted an SPCC field inspection at Costa Sur, and provided PREPA with a notice of inspection findings. The notice stated that it did not appear that the tank inspections were being conducted in accordance with API 653 standards, as Tanks R-1 and R-3 are past due for an API 653 internal inspection. It also noted that PREPA did not produce records that showed that PREPA had made tank repairs recommended during the last internal inspection; that oil in one tank that had been closed (R-1) needed to be removed; that documentation of repairs made to Tank R-2 was needed to determine if the tank met API 653 inspection requirements; and that the east containment wall of Tank R-3 had approximately 30 holes of 4 inches diameter that were not sealed on the outside of the dike, reducing dike capacity. EPA's notice also requested that PREPA submit various other documentation.

By letter dated October 14, 2015, PREPA responded to these findings. PREPA explained its position that internal inspections for Tanks R-1, R-2, and R-3 were not overdue, and were due in 2016, 2017, and 2018 respectively. PREPA further explained that Tank R-1 was out-of-service due to a roof failure in May 2015, but that PREPA could not remove the residual oil from that tank until the tank shell was reinforced without causing safety concerns. As requested by EPA, PREPA also provided various documentation, including a fuel oil storage tank inspection schedule and documentation that PREPA had completed recommended repairs following the last API 653 internal inspections on the reserve tanks, which were conducted in 2008. PREPA also installed end caps to fill the holes identified by EPA in the dike containment structure.

By letter dated November 23, 2015, EPA responded to PREPA's October 14, 2015 correspondence. In its letter, EPA acknowledged that PREPA had provided the requested documentation regarding the repairs for the tanks, and accepted PREPA's identified internal inspection due dates for Tanks R-2 and R-3. EPA also stated that it had reviewed the documentation

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PREPA submitted showing that the holes in the Tank R-3 containment wall had been sealed, and that it “considers the violation to be resolved.” However, EPA reiterated that it still considered there to be a violation with respect to the oil that remained in Tank R-1. EPA stated that “[b]ecause this tank although badly damaged still contains oil and does not meet the definition of a permanently closed tank for the purposes of SPCC, it is still considered in service. As such all SPCC provisions are still applicable until all oil is removed from the tank. If PREPA submits documentation to EPA showing that all the oil in the tank has been removed this particular violation will be considered resolved.”

By letter dated December 21, 2015, PREPA responded to EPA’s November 23, 2015 letter, reiterating that it was unsafe to remove the remaining oil in Tank R-1 until engineered structural supports were installed to avoid further collapse of the tank. PREPA explained that it was in the process of evaluating contractor proposals for the work and permanent closure of Tank R-1, which has been cleaned and remains out-of-service. In September 2019, in response to a Facility Response Plan inspection (discussed below), PREPA informed EPA that PREPA was in the midst of a claim process with an insurance company to obtain a complete tank rehabilitation.

PREPA took Tank R-3 out of service in November 2016 for integrity inspection activities, performed the internal testing in January 2017, and returned it to service in 2017. PREPA performed the internal integrity testing for Tank R-2 in November 2017 for integrity inspection activities, and returned it to service in February 2018.⁵²

No NOVs have been issued in the aftermath of the inspection.

Documentation related to the SPCC inspections is located in the Generation→ Environmental Reports and Regulatory Matters→ Costa Sur-Environmental→Regulatory Matters→ Water Compliance→SPCC Compliance Folder in the Data Room.

Mayaguez Power Plant:

EPA conducted an SPCC field inspection on April 24, 2012. Subsequently, in August 2012, PREPA submitted various compliance materials requested by EPA. In response, on February 13, 2013, EPA sent PREPA a letter finding that the Mayaguez facility was in compliance.

Documentation related to the SPCC inspection is located in the Generation→ Environmental Reports and Regulatory Matters→ Mayaguez-Environmental→Regulatory Matters→ Water Compliance→SPCC Compliance Folder in the Data Room.

b. Facility Response Plans (“FRPs”)

Certain PREPA generation facilities are also required to prepare, implement, and submit FRPs if they could reasonably be expected to cause substantial harm to the environment by discharging oil into navigable waters or on adjoining shorelines. PREPA has prepared and submitted

⁵² While PREPA had these tanks out of service, PREPA rented a storage tank from the neighboring Commonwealth Oil Refinery Corporation to temporarily supply fuel oil to Costa Sur.

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FRPs for Aguirre, San Juan, Palo Seco, Costa Sur,⁵³ Cambalache, and Mayaguez to the United States Coast Guard and/or EPA. PREPA FRPs are located in the Data Room in the plant specific folders. Reviews of the FRPs are completed every five years, and the dates of the latest version for each facility are as follows:

Generation Facility	Date of Last Update
Cambalache	2020
Aguirre	2020
Mayaguez	2020
Palo Seco	2020
San Juan	2020
Costa Sur	2018

PREPA's FRPs for its power plants are located in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→Regulatory Matters→ Water Compliance→Facility Response Plan Program Folders in the Data Room.

The Coast Guard also conducts annual inspections of PREPA facilities. EPA may also conduct inspections. The findings from the recent inspection reports and PREPA's responses are summarized below:

San Juan:

On May 29, 2019, EPA conducted an FRP inspection at San Juan. Among other things, EPA found that integrity testing records were not available for all storage tanks, and that facility drills and exercises had not been conducted and recorded in accordance with procedures. PREPA responded by letter dated July 8, 2019, providing requested records and explaining that the API-653 internal and external integrity testing records for San Juan are available at PREPA's Useful Life Extension Department. PREPA also provided documentation of exercises that it had conducted, and committed to conducting a non-business hours exercise to comply with EPA's findings.

EPA also requested that PREPA update certain elements of its FRP. PREPA submitted a revised FRP, and by letter dated September 15, 2020 EPA approved of the updated San Juan FRP.

On June 20, 2018, the Coast Guard conducted an inspection and noted that equipment deployment exercises were not conducted by the oil spill removal organization ("OSRO") for 2017-2018. On June 29, 2018, PREPA provided documentation that the OSRO equipment exercises had in fact been conducted. The Coast Guard also found that that transfer hoses were missing markings or had incorrect markings, and that PREPA was unable to produce test records. PREPA responded that it was working to fix the hoses and would provide documentation once this was completed. PREPA did not receive additional correspondence from the Coast Guard regarding this inspection.

In the prior year's inspection on June 20, 2017, the Coast Guard similarly noted that the OSRO requirements were not met. However, PREPA again provided compliance documentation, and the Coast Guard acknowledged that the requirement had been satisfied.

⁵³ The United States Coast Guard does not require an FRP for Costa Sur, because PREPA does not receive oil directly from barges; however, EPA requires an FRP to be prepared because Costa Sur utilizes inland transfer of oil.

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In addition to inspection issues, on September 21, 2016, PREPA had a discharge of 1 gallon of oil to San Juan Bay due to a malfunction at Unit 9. Again on April 6, 2020, PREPA had a discharge of about 1 gallon of Bunker C oil to San Juan Bay from catch basin piping due to heavy rains. PREPA followed its FRP response procedures and reported the discharges to relevant agencies. Spill reports are located in the Data Room.

An inspection was not conducted in 2020 due to the COVID-19 pandemic.

Documentation related to the FRP inspections is located in the Generation→ Environmental Reports and Regulatory Matters→ San Juan-Environmental→Regulatory Matters→ Water Compliance→ Facility Response Plan Program Folder in the Data Room.

Palo Seco:

On July 1, 2020, the Coast Guard conducted an inspection and noted that the facility had not provided records showing it semi-annually conducted exercises using its owned and operated equipment. On August 18, 2020, PREPA conducted an equipment deployment exercise, and submitted documentation of the exercise to the Coast Guard on August 26, 2020. On August 28, 2020, the Coast Guard responded that the deficiency had been closed.

On June 27, 2019, the Coast Guard conducted an inspection and found that the facility did not have adequate lighting for security purposes. The inspection notes that the citation is "cleared."

On June 20, 2018, the Coast Guard conducted an inspection and noted that OSRO equipment deployment exercises had to be conducted for 2017-2018. On June 29, 2018, PREPA provided documentation that the OSRO equipment deployment exercises had been conducted.

On June 13, 2017, the Coast Guard conducted an inspection and noted that a worst case discharge scenario tabletop exercise had to be conducted by a certain date. PREPA performed the exercise on July 10, 2017.

Documentation related to the FRP inspections is located in the Generation→ Environmental Reports and Regulatory Matters→Palo Seco-Environmental→Regulatory Matters→ Water Compliance→ Facility Response Plan Program Folder in the Data Room.

Mayaguez:

On December 11, 2018, the Coast Guard conducted an inspection and noted several deficiencies related to security measures. The report also found that the facility audit was not conducted by the proper personnel, PREPA did not conduct an annual transfer pipe hydrostatic test, and PREPA did not make certain records available to the Coast Guard, including records of exercises and the current OSRO contract. The inspection report also indicated that PREPA should update various aspects of the FRP. For its 2020 FRP update, PREPA updated the FRP with the requirements identified in the inspection.

On January 25, 2017, EPA conducted an FRP inspection, and PREPA responded on May 17, 2017. EPA first requested that PREPA provide evidence that funding was available to initiate cleanup activities. PREPA responded that it had renewed its OSRO contract with an approved

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amount to fund oil spill removal services. If additional budget is necessary, the contract has a provision to increase funds to cover the difference. In addition, EPA's inspection report also noted incomplete PREPA checklists and drill/exercise forms and alleged that a spill management team tabletop exercise was not performed in 2016. PREPA responded by updating the checklists and forms and providing documentation that the tabletop exercise had occurred. And finally, EPA alleged that one of the plant's tanks was overdue for inspections and also had a tear in the lining. PREPA responded that it had repaired the lining in April 2017, internal tank testing was not yet overdue, and external tank testing required authorization from the Puerto Rico Budget Management Office.

On February 13, 2019, EPA sent a letter to PREPA explaining that it had completed its review of the materials submitted by PREPA, and that "[a]pproval is being granted for this field inspection based upon the regulatory requirements set forth in EPA's FRP rule (40 CFR Part 112). After reviewing your May 17, 2017 compliance materials, the EPA has decided to approve your facility's FRP dated July 2013." However, EPA also requested that PREPA submit a revised FRP to EPA since the current version was at that point over five years old. PREPA prepared and submitted a revised FRP for Mayaguez in 2020.

An inspection was not conducted in 2020 due to COVID-19. An inspection was also not completed in 2019.

Documentation related to the FRP inspections is located in the Generation→ Environmental Reports and Regulatory Matters→Mayaguez-Environmental→Regulatory Matters→Water Compliance→ Facility Response Plan Program Folder in the Data Room.

Cambalache:

On May 31, 2019, EPA performed an FRP Field Inspection at Cambalache. Among other things, EPA found that integrity testing records were not available for all aboveground storage tanks; drainage of secondary containment of a diesel tank has a hole with no mechanism to control discharge; records of tanks and secondary containment inspections were not maintained for a period of five years; and facility drills and exercises had not been conducted and recorded in accordance with written procedures. PREPA responded by letter dated August 9, 2019, explaining that it was in the process of awarding a contract to perform the API-653 internal and external integrity testing of the fuel oil storage tanks, and that it had repaired the hole in the secondary containment wall. PREPA informed EPA that it did not have the records requested by EPA because they were lost during Hurricane Maria or the inspections did not occur in the aftermath of the emergency. And finally, PREPA provided documentation of exercises that it had conducted, and committed to conducting an unannounced exercise to comply with EPA's findings.

EPA also requested that PREPA submit an updated FRP for review, PREPA informed EPA that it was preparing an updated FRP to meet the 2020 due date.

The Coast Guard approved of the updated Cambalache FRP by letter dated May 18, 2020. This approval is located in the Cambalache Power Plant Folder in the Data Room.

On November 16, 2018, the Coast Guard conducted an inspection and noted that the annual maintenance records for the facility's fire extinguishers had not been available for review. By letter

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dated December 14, 2018, PREPA informed the U.S. Coast Guard that it had performed the fire extinguisher annual certifications and provided the associated documentation.

An inspection was not conducted in 2020 due to COVID-19.

Documentation related to the FRP inspections is located in the Generation→ Environmental Reports and Regulatory Matters→Cambalache-Environmental→Regulatory Matters→Water Compliance→ Facility Response Plan Program Folder in the Data Room.

Aguirre:

On June 24, 2020, the U.S. Coast Guard conducted an inspection at the Aguirre Power Plant.

On June 26, 2019, the U.S. Coast Guard conducted an inspection at the Aguirre Power Plant. The Coast Guard found that PREPA must ensure adequate security measures at the facility (the perimeter fence was overgrown), that warning signs must be displayed, and that certain sections of the Facility Security Plan needed to be updated. As a part of its 2020 FRP update, PREPA updated the FRP with the requirements identified in the inspection.

Documentation related to the FRP inspections is located in the Generation→ Environmental Reports and Regulatory Matters→Aguirre-Environmental→Regulatory Matters→Water Compliance→ Facility Response Plan Program Folder in the Data Room.

Costa Sur:

On June 6, 2019, the EPA conducted an inspection at the Costa Sur Power Plant. Among other things, EPA found that integrity testing records were not available for all above-ground storage tanks (including Tanks R-2 and R-3); additional bulk storage tanks were overdue for integrity testing; response equipment inspection records did not include checks for all required criteria; facility drills and exercises had not been conducted and recorded in accordance with written procedures; and Discharge Pre Prevention Meeting records did not consistently include the subject/issue identified, required action, and implementation date.

PREPA responded by letter dated September 30, 2019, explaining that it was in the process of awarding a contract to perform the API-653 internal and external integrity testing of the fuel oil storage tanks, and provided the following status for Tanks R-1, R-2, and R-3:

- Tank R-1: Tank R-1 is out of service because its roof collapsed in May 2015. PREPA is in the midst of a claim process with an insurance company in order to achieve a complete tank rehabilitation.
- Tank R-2: PREPA took Tank R-2 performed an internal visual inspection in November 2017. After the inspection, it was determined that the tank showed structural stability and the internal elements were observed in place.
- Tank R-3: PREPA took Tank R-3 out of service in November 2016, and performed an internal visual inspection in January 2017. After the inspection, it was determined that the

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tank showed structural stability and the internal elements were observed in place. The next external inspection is scheduled for 2026.

PREPA also provided documentation that it had added the requested information to its response equipment checklist, had performed all facility drills and exercises as required by the National Preparedness for Response Exercise Program guidelines, and had conducted annual Discharge Prevention Meeting logs from 2015-2019. PREPA committed to taking more detailed logs, and also committed to conduct its upcoming tabletop exercise using the worst case discharge scenario identified by EPA in the inspection notice.

Inspections did not occur in 2018 or 2020.

Documentation related to the FRP inspections is located in the Generation→ Environmental Reports and Regulatory Matters→Costa Sur-Environmental→Regulatory Matters→Water Compliance→ Facility Response Plan Program Folder in the Data Room.

c. **Operation Manuals**

Certain PREPA generation facilities are required to have an Operation Manual implemented for oil transfer operations, including San Juan, Aguirre, Palo Seco, Mayaguez, and Cambalache. Costa Sur does not have an Operations Manual because it does not receive fuel via barge transfer. The Coast Guard conducts inspections of subject PREPA facilities. The dates of the latest version of the manual for each facility are as follows:

Generation Facility	Date of Latest Version of Operations Manual
Cambalache	2016
Aguirre	2017
Mayaguez	2017
Palo Seco	2017
San Juan	2018

PREPA's Operations Manuals for its power plants are located in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→ Regulatory Matters→ Water Compliance→Operations Manual Folders in the Data Room.

6. Industrial Discharge Permits

Cambalache and Mayaguez require an Industrial Discharge Permit from PRASA, because they are classified by PRASA as significant users due to the fact that they discharge more than 10,000 gallons per day of non-domestic residual waters to publicly-owned treatment works. These permits are located in the folder for the Mayaguez and Cambalache power plants in the Generation→Permits and Approvals→ Environmental Permits and Approvals Folder in the Data Room.

The Industrial Discharge Permits for Cambalache and Mayaguez include specific local limits for discharge to the Wastewater Treatment Plants of Arecibo and Mayaguez, respectively. These local limits were developed in accordance with EPA regulations at 40 C.F.R. § 403.8(f)(4). The Cambalache permit requires monthly and semi-annual reporting, while the Mayaguez permit

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requires semi-annual reporting. Cambalache's permit is in effect until August 31, 2021. Mayaguez's permit was in effect until September 19, 2020. PREPA submitted a renewal application for the Mayaguez permit by letter dated June 1, 2020. The renewal application remains pending before PRASA.

There have been several incidents of potential non-compliance associated with the Mayaguez Industrial Discharge Permit in the last several years. In August 2015, there was an exceedance of the pH parameters in the permit. PREPA found that the exceedance was due to improper use of a detergent for cleaning toilets. According to PREPA's evaluation of the event, there was no impact on the PRASA wastewater treatment plant.

In addition, there have been two incidents of reporting/paperwork noncompliance. First, on November 29, 2016, PRASA informed PREPA that one of its reports was incomplete, as it did not include the parameters for lead and Tetrachlorodibenzo-p-dioxin, and used the wrong units for a third parameter. On December 6, 2016, PREPA provided a corrected report. Second, on May 18, 2018, PRASA issued a notice of deficiency related to PREPA's failure to include a certification with the appropriate signature, and to update certain general user information. On June 15, 2018, PREPA updated the requested information with PRASA.

Moreover, in its March-August 2018 semi-annual report, PREPA also noted several exceedances related to Mayaguez: three pH exceedances (which PREPA explained were still within the acceptable range provided by the permit) and three flow exceedances. On October 10, 2018, PRASA responded with a notice of noncompliance for the three flow exceedances. PRASA's letter required PREPA to respond with the reason for noncompliance and corrective actions. On October 31, 2018, PREPA responded, explaining that it had been necessary to make two chemical washes of its reverse osmosis system for maintenance purposes, and that the three flow exceedances were the result of these washes. Certain exceedances were also influenced by heavy rainfall. As a corrective action, PREPA explained that it was modifying the operation system of the reverse osmosis plant by adding a visual and auditory alarm that alerts staff when the discharged gallonage reaches 90% of the limit.

PREPA's understanding is that there is currently no ongoing noncompliance associated with its Industrial Discharge Permits.

7. Operation Permit for Used Water Treatment Systems Without Discharge to Surface Water Body

Cambalache has a water treatment system to neutralize water used as a part of its operations. This treatment is regulated by DNER through an operation permit. Among other things, this permit requires PREPA to maintain operation and maintenance records, such as daily operation and effluent analyses. The permit also imposes a maximum discharge limit, and requires semi-annual reports and an annual fee. The permit prohibits discharges to bodies of water in Puerto Rico; discharges must be made to PRASA's Regional Arecibo Wastewater Treatment Plant. The permit also requires prior authorization from DNER before making changes to the wastewater treatment system. The permit is in effect until December 31, 2021, and is included in the Generation→Permits and Approvals→ Environmental Permits and Approvals→Cambalache→Water Permits Folder in the Data Room.

8. Underground Injection Control (“UIC”) Requirements

PREPA has underground injection control systems for the disposal of sanitary water at many of its facilities, including both generation and non-generation facilities. These sanitary facilities are regulated under DNER’s Underground Injection Control Regulation. PREPA’s program primarily consists of the construction, operation, and permitting of septic systems at certain sites, and the closing of septic systems at other sites. An inventory of PREPA’s UIC facilities is located in the Generation→Environmental Reports and Regulatory Matters→Environmental Documents Applicable to Multiple Facilities→Water Documents→Underground Injection Control Folder in the Data Room.

For UIC facilities for which PREPA wishes to cease underground injection activities instead of continuing to operate and obtaining the requisite permit, the regulation allows PREPA to develop an alternate compliance plan for closing the UIC facility. Such plans include plugging procedures and the alternate methods to be used for the disposal or storage of injection fluids.

In general, as a first option, PREPA is developing alternate compliance plans for UIC facilities that contemplate the closing of septic systems where sanitary discharges can be connected to PRASA facilities. These alternate compliance plans consist of a detailed description of the UIC facility and a sampling plan that must be approved by DNER prior to proceeding with the closure activities. After conducting sampling in connection with the UIC facility and determining that the results are in compliance with DNER requirements, closure activities can begin at the UIC facility. For sites where it is not possible to connect to an existing PRASA line, the second option is to build above-ground retention tanks that require permits from DNER. When this option is also not feasible, PREPA must make necessary adjustments to bring the UIC facility into compliance with the regulations and obtain the corresponding permit.

Due to the large number of PREPA UIC facilities and the cost involved to carry out the work necessary to achieve compliance with the regulations, PREPA presented a two-phase compliance plan to DNER. The first phase includes the preparation and implementation of compliance plans for PREPA’s generating stations. Once this first phase is completed, PREPA expects to move to the second phase which would cover PREPA non-generation facilities.

PREPA’s efforts have thus far largely been focused on completing the first phase of its compliance plan, i.e., connecting the UIC facilities at its major generating stations to PRASA lines and obtaining DNER approval to close UIC facilities. The projects to connect sanitary discharges to the PRASA system are complete at San Juan, Aguirre, Palo Seco, and Costa Sur. Once connected to PRASA, PREPA initiated steps to close the UIC facilities at these power plants and sought the approval of DNER. DNER has approved alternate compliance plans for the septic systems at the San Juan, Aguirre, and Palo Seco power plants. The status of each plant is described below.

For San Juan, monitoring of the UIC facility revealed evidence of contamination, and DNER determined that PREPA had used insufficient sampling methods for some of the sanitary systems. DNER has thus required extended monitoring of the facility, as well as groundwater and soil sampling. In November 2016, DNER approved PREPA’s extended sampling plan, subject to conditions, and PREPA is in the process of implementing its sampling plan. The San Juan UIC facilities will not be closed until this monitoring is complete and DNER approval obtained.

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For Palo Seco, PREPA submitted sampling results in 2015. In 2016, DNER approved closure of the UIC facilities, and the project for closing the system was awarded to a contractor. Due to COVID-19, the project has not commenced, and PREPA is in the process of extending the contract. PREPA must submit a final closure report to DNER once closure activities are complete.

For Aguirre, PREPA is awaiting DNER's approval of the monitoring results (which PREPA submitted several years ago) to proceed with closure of the septic systems.

For Costa Sur, PREPA's alternate compliance plan was submitted to DNER in February 2017, and amended in August 2017. PREPA still needs to obtain DNER approval of the plan to conduct monitoring and to eventually close the facility.

For Jobos, PREPA's UIC inventory indicates that an alternate compliance plan had been approved for Jobos back in 2008, but that it has expired. PREPA will need to resubmit an alternate compliance plan.

For other facilities, PREPA's closure activities are in earlier stages. For instance, for Yabucoa and Daguao, PREPA is still in the process of formulating alternate compliance plans.

PREPA has also completed UIC closure activities for several generation facilities. PREPA completed the closure of the UIC systems at Mayaguez in 2009, and submitted its final closure report in August 2009. PREPA also completed the closure of the UIC systems at the Culebra Generating Station in 2014.

For Cambalache, it is PREPA's understanding that Cambalache does not have UICs and is instead directly connected to the PRASA system.

UIC-related documentation for PREPA's power plants is located in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→ Regulatory Matters→ Water Compliance→Underground Injection Control Folders in the Data Room

PREPA's inventory of UIC facilities (contained in the Data Room), does not have information on UIC systems for Vega Baja and Vieques. PREPA understands these facilities to have UIC systems. However, the limited documentation that exists indicates that the municipality of Vieques owns the Vieques UIC system, rather than PREPA. Further information on these UIC systems is contained in the Data Room.

9. Safe Drinking Water Act ("SDWA") Requirements and Compliance

PREPA's Aguirre and Costa Sur power plants have public water systems that must comply with SDWA requirements. The power plants have been assigned the following SDWA ID numbers:

- Aguirre Thermoelectric Power Plant (ID: PR0563065)
- Aguirre Combined Cycle Plant (ID: PR0563105)
- Costa Sur Thermal Power Plant (ID: PR0431034)

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According to ECHO, the population served by the Aguirre Thermoelectric water system is 257, the population served by the Aguirre Combined Cycle water system is 140, and the population served by the Costa Sur Thermal water system is 390. ECHO indicates that all three systems are privately-owned, have a groundwater source, and are non-transient non-community systems.

Under the SDWA, PREPA's public water systems are subject to a variety of sampling and reporting requirements. PREPA submits monthly reports for total coliform⁵⁴ and residual chlorine. PREPA also submits periodic reports on lead and copper and various other chemicals (e.g., nitrates, nitrites, VOCs, synthetic organic chemicals, total trihalomethanes ("TTHM"), and haloacetic acids ("HAA5")). Depending on the plant and pollutant, such reports are submitted on a quarterly, annual, or tri-annual basis in accordance with PREPA sampling plans. PREPA follows two-year sampling plans imposed by the Puerto Rico Department of Health in order to test for these chemicals. The sampling reports required by the plans are in the Data Room in the Generation→ Environmental Reports and Regulatory Matters→ Aguirre-Environmental→Reports→Water Reports→Safe Drinking Water Act Folder, and in the Generation→ Environmental Reports and Regulatory Matters→Costa Sur-Environmental→Reports→ Water Reports→Safe Drinking Water Act Folder.

Aguirre Power Plant:

Nitrates:

There are several notices of alleged violations noted on ECHO for the Aguirre water systems related to Nitrates Monitoring and Recording in Q1 2018 and Q1 2019 for the Aguirre Thermoelectric water system, and in Q2 2018 for the Aguirre Combined Cycle water system.⁵⁵

On October 12, 2018, PREPA received a notice from the Department of Health that PREPA had not submitted the required nitrate sampling results for January-March 2018 and April-June 2018. On October 23, 2018, PREPA responded that the nitrate sampling had been conducted but the results were inadvertently not included when PREPA submitted its sampling report. PREPA provided the sampling reports and requested that the file be amended to reflect the submission. PREPA has not received follow-up communications from the Department of Health and understands this issue to be resolved.

PREPA's April 2020 sampling event for the Aguirre Combined Cycle system showed levels of nitrates at 11.1 mg/l, above the maximum contaminant level ("MCL") of 10 mg/l. Accordingly, with its April 2020 report, PREPA attached a copy of a public notice warning that the water should not be given to babies under 6 months of age, as nitrates in drinking water can cause serious health problems for babies, and noting that pregnant women or people with health problems may want to

⁵⁴ PREPA is subject to EPA's "Revised Total Coliform Rule." 40 C.F.R. § 141.851, et. seq. Under these regulations, PREPA must develop a written sample siting plan for the collection of total coliform samples. 40 C.F.R. § 141.853(a). On December 14, 2015, PREPA submitted a sampling plan to comply with the rule for its three public water systems. The sampling plan is in the data room.

⁵⁵ ECHO indicates that the Aguirre Thermoelectric system had 11 quarters of noncompliance in the last 12 quarters from Q1 2018-Q3 2020, while the Aguirre Combined Cycle system had 10 quarters of noncompliance in the last 12 quarters from Q2 2018-Q3 2020. However, some of these noncompliant quarters may be related to the three alleged violations noted above, as they have not been registered as officially resolved in ECHO.

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consult with their doctor. At the time of drafting, PREPA had not received follow-up communications from the Department of Health.

PREPA's April 2019 sampling event for the Aguirre Thermoelectric system also showed levels of nitrates in excess of the MCL at 10.2 mg/l. At the time of drafting, PREPA had not received follow-up communications from the Department of Health.

In addition, in a number of instances in the 2018-2020 timeframe, PREPA's quarterly nitrates testing showed nitrates sampling levels that were close to the MCL (between 9 mg/l and 10 mg/l). For instance, the Aguirre Thermoelectric system had nitrates levels between 9 and 10 mg/l in July 2020, April 2020, January 2020, January 2019, July 2018, and April 2018. Similarly, the Aguirre Combined Cycle system had nitrates levels between 9 and 10 mg/l in January 2020, October 2019, July 2019, January 2019, July 2018, and April 2018. The fact that nitrate values were relatively close to the MCL was noted in the 2019 sanitary survey conducted by the Department of Health for the Aguirre Combined Cycle system. These surveys and PREPA's responses thereto are discussed in more detail below.

Other Contaminants:

PREPA's August 2020 sampling event for the Aguirre Thermoelectric system showed levels of Total Dissolved Solids ("TDS") at 618 mg/l, above the MCL of 500 mg/l. PREPA's report to the Department of Health indicated that PREPA would replace the treatment system sediment filters every three months and would increase the frequency of backwashing.

By letter dated December 2, 2019, the Department of Health issued a NOV to PREPA alleging that PREPA had not submitted lead and copper sampling results for Q3 2019 for the Aguirre Combined Cycle system. PREPA responded to the NOV by letters dated December 19, 2019 and January 14, 2020, explaining that the sampling had been carried out, but that the results were inadvertently submitted under the wrong facility name (they were sent with the sampling report for the Aguirre Thermoelectric system, rather than the Aguirre Combined Cycle system). PREPA re-submitted the results to the Department of Health with the corrected name.

In October 2019, PREPA's Total Coliform Report for the Aguirre Thermoelectric system identified one sample from October 3, 2019 as having Total Coliform "present." PREPA subsequently performed additional tests later that month that showed Total Coliforms as being absent.

Sanitary Surveys:

In 2019, the Department of Health also conducted sanitary surveys at the two Aguirre systems.

On October 2, 2019, the Department of Health conducted a sanitary survey at the Aguirre Combined Cycle system. Among other things, the sanitary survey noted a number of deficiencies related to PREPA wells, water tanks, pumps, and distribution equipment (primarily related to labeling, cracks, corrosion, and/or missing parts). By letter dated February 3, 2020, PREPA responded by providing documentation showing its repairs/corrections to the identified deficiencies.

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The sanitary survey also identified various operation and maintenance items, including the need to fix exposed electrical cables in wells, to prepare a standardized procedure for distribution tank cleaning, to update system operation manuals, and to record daily drinking water consumption. PREPA's February 3 response indicated that the electrical cables were rectified, the standardized procedure for tank cleaning was submitted to the Department of Health for approval, the operation manual was updated, and the log for daily records was identified.

The survey also identified several compliance issues related to the MCLs for certain pollutants. For total dissolved solids ("TDS"), the survey noted that the wells had TDS above the MCL. For nitrates, the survey noted that levels were close to the MCL. In its February 3 response, PREPA explained that because TDS was exceeded, the sediment filters for the treatment system would be replaced every three months and PREPA would increase the frequency of backwash. In response to the nitrates, issue, PREPA noted that the regulations, at the discretion of the state, allow for nitrate levels not to exceed 20 mg/l in non-community water systems if the water supplier makes certain demonstrations, including that the water will not be used by children under 6 months of age or pregnant women, that the system notifies the Department of Health and the public of nitrate levels that exceed 10 mg/l and notifies the public of the potential health effects from exposure, and that no adverse health effects arise.⁵⁶

PREPA has not received follow up communications from the Department of Health regarding the survey and understands it to be resolved.

On August 8, 2019, the Department of Health conducted a sanitary survey at the Aguirre Thermoelectric system. Among other things, the sanitary survey noted a number of deficiencies related to PREPA wells, water tanks, pumps, and distribution equipment (primarily related to labeling, cracks, corrosion, and/or missing parts). By letter dated December 5, 2019, PREPA responded by providing documentation showing its repairs/corrections to the identified deficiencies. The sanitary survey also identified various operation and maintenance items, including the need to fix exposed electrical cables in wells and to prepare a standardized procedure for distribution tank cleaning. PREPA's February 3 response indicated that the electrical cables were rectified and the standardized procedure for tank cleaning was submitted to the Department of Health for approval. The survey also identified a compliance issue related to the MCL for dissolved solids ("TDS"), noting that the wells had TDS above the MCL. In its February 3 response, PREPA explained that because TDS was exceeded, the sediment filters for the treatment system would be replaced every three months and PREPA would increase the frequency of backwash. PREPA has not received follow-up communications from the Department of Health regarding the survey and understands it to be resolved.

On July 22, 2016, a sanitary survey of the Aguirre Thermoelectric system was conducted by the Department of Health noting deficiencies related to PREPA wells, including cultivated land in the vicinity of wells, certain missing equipment, and a clogged well. By letter dated August 9, 2016, the Department of Health requested that PREPA submit a plan of action to correct the deficiencies. On October 28, 2016, PREPA submitted the requested plan of action, which explained that PREPA had installed the necessary equipment and that PREPA had generated a service order to unclog the well. With respect to the cultivated land near the wells, PREPA indicated that it was not the owner of

⁵⁶ See 40 C.F.R. 141.11.

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that land. PREPA has not received follow-up communications from the Department of Health regarding the survey and understands it to be resolved.

Older Violations:

The Department of Health alleged several additional violations during the 2008-2013 timeframe. However, given the vintage of these violations, and PREPA's understanding that they have been resolved, they are not discussed in this white paper.

Documentation related to the NOVs and surveys noted above is located in the Generation→ Environmental Reports and Regulatory Matters→ Aguirre-Environmental→Regulatory Matters→ Water Compliance→Safe Drinking Water Act Folder in the Data Room.

Costa Sur Power Plant:

ECHO identifies two notices of alleged violations in Q1 2018 (Nitrates) and Q1 2020 (Revised Total Coliform Rule). ECHO indicates that the Costa Sur system had 11 quarters of noncompliance in the last 12 quarters from Q1 2018-Q3 2020. However, this noncompliance seems to be related to the two alleged violations noted above, which ECHO indicates have not been officially resolved.

It is not clear what the Q1 2018 nitrates violation noted on ECHO entails, as PREPA's reporting does not indicate an exceedance of the MCL for that quarter.

It is also not entirely clear what the Q1 2020 alleged violation on ECHO entails. In January 2020, a series of large earthquakes struck Puerto Rico and caused massive damage to the Costa Sur Power Plant. It appears that PREPA was unable to submit the required Total Coliform Reports in January-February 2020 due to this damage, and this may be the source of the alleged violation noted in ECHO. PREPA reported the damage to the Department of Health and explained that due to the damage, ongoing earthquakes, and instability, access to the plant was restricted, and this affected the sampling activities. Starting with the March 2020 report, PREPA submitted Total Coliform results to the Department of Health, but explained that due to the damage to the Costa Sur laboratory building and the need to provide water at the power plant, the Department of Occupational Health and Safety determined that PREPA should use a water intake that is not a regular sampling point. To that end, PREPA carried out sampling at two points: Point # 1-Water intake within the laboratory, which is a regular point of sampling; and Point # 2-Water intake outside the laboratory. This second point is not regularly used for drinking water and is not a regular sampling point. PREPA has not received an NOV for the sampling issue noted above.

In December 2019, PREPA's Total Coliform Report identified one sample from December 10, 2019 as having Total Coliform "present." PREPA subsequently performed additional tests that month that showed Total Coliform as being within the regulatory limits.

ECHO also identifies two SDWA NOVs from 2011 related to MCL violations for the Total Coliform Rule. ECHO lists these two notices as resolved, with compliance achieved by March 31, 2016. The Department of Health alleged several additional violations during the 2008-2013 timeframe. However, given the vintage of these violations, and PREPA's understanding that they have been resolved, they are not discussed in this white paper. Documentation for these alleged

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violations is located in the Generation→ Environmental Reports and Regulatory Matters→Costa Sur-Environmental→Regulatory Matters→ Water Compliance→Safe Drinking Water Act Folder in the Data Room.

IV. Emergency Planning and Community Right-to-Know Act Issues

PREPA's generation facilities must file annual reports under the Emergency Planning and Community Right-to-Know Act ("EPCRA"), including Tier II reports and Toxic Release Inventory ("TRI") reports. The following facilities file both reports: San Juan, Palo Seco, Aguirre, Costa Sur, Cambalache, Mayaguez, Yabucoa, Daguao, Vega Baja, and Jobos.⁵⁷ Culebra and Vieques also must submit Tier II reports. These reports for 2016 through 2019 are included in the Data Room in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→Reports→EPCRA Reports Folders.

As part of its obligations under EPCRA, PREPA also evaluates safety data sheets for products used in its operations and participates in local emergency planning committee meetings.

In 2015, EPA issued a Consent Agreement and Final Order (EPCRA-02-2015-4301) alleging that PREPA failed to timely submit TRI Form R annual reports for HCl for Aguirre, Palo Seco, and Costa Sur for calendar years 2010, 2011, and 2012. PREPA paid \$37,500 to resolve EPA's allegations.

V. Resource Conservation and Recovery Act and Waste-Related Issues

PREPA's waste-related programs aim to ensure that PREPA's generation, storage, and accumulation of solid waste comply with EPA and DNER requirements. PREPA's generation facilities produce various categories of hazardous and non-hazardous waste. In addition, regulations related to used oil, underground storage tanks, and biomedical waste also apply to PREPA's facilities. A high-level overview of these programs is provided below.

A. Generation of Hazardous Waste

Several of PREPA's generation facilities are regulated generators of hazardous waste under the Resource Conservation and Recovery Act ("RCRA"). Envirofacts RCRA Facility Information sheets for Aguirre, Cambalache, Costa Sur, Palo Seco, and San Juan, are in the folder for each plant in the Data Room in the Generation→Permits and Approvals→Environmental Permits and Approvals Folders. These facilities all have a RCRA EPA identification number, which is required for generators of hazardous waste. According to the Envirofacts sheets and EPA's ECHO database, Aguirre, Palo Seco, Costa Sur, and San Juan are small quantity generators, while Cambalache is a conditionally exempt small quantity generator (also known as a very small quantity generator). PREPA also recently obtained an ID number for Mayaguez for a discrete hazardous waste generation event that resulted from the need to dispose of expired chemical substances. Should there be similar future events at Mayaguez, PREPA would need to obtain another ID number.

⁵⁷ In 2018, Jobos did not exceed the relevant thresholds for filing the TRI report, and as a result the Form R report for that plant was not filed and is not in the data room for that year.

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Correspondence related to its request for the Mayaguez ID number is in the Data Room. None of PREPA's generation facilities are large quantity generators or RCRA-permitted facilities.

Small quantity generators must comply with various RCRA requirements, including temporal and mass-based quantity and accumulation limits, waste identification and determination requirements, recordkeeping requirements, inspections of accumulation areas, container management and labeling requirements, manifest requirements,⁵⁸ pre-transport requirements, preparedness and prevention requirements, and emergency procedures, among other things.⁵⁹ Very small quantity generators must comply with significantly more limited requirements, which include mass-based quantity and accumulation limits, the need to make hazardous waste determinations, and the requirement to dispose of hazardous waste only at certain authorized facilities.

A subcategory of hazardous waste is universal waste. Many of PREPA's generation facilities are small quantity handlers of universal waste, primarily for lamps (e.g., light bulbs), which typically contain mercury. Through the universal waste program, EPA has promulgated streamlined management requirements for certain hazardous wastes, including batteries, lamps, and mercury-containing equipment.⁶⁰ The universal waste regulations also contain various management requirements, including labeling requirements, temporal storage limits, training requirements, requirements to respond to releases, requirements related to exports, and requirements related to transporting waste and where universal waste may be sent, among other things.⁶¹ Universal wastes are not required to be shipped with a manifest.⁶² In addition to the general universal waste requirements, there are also tailored management requirements applicable to each category of universal waste, e.g., batteries, lamps, and other mercury-containing equipment.

The January 2020 earthquakes damaged the Battery Room (for broken batteries) for Costa Sur Units 5-6, which resulted in a spill of acid. A contractor performed and completed cleanup of the spill, and disposed of the acid. The hazardous waste manifest associated with the disposal related to this spill is in the Data Room. The amount of acid spilled did not exceed the reportable quantity, and there has been no regulatory agency involvement.

EPA and DNER have not conducted RCRA inspections at PREPA generation facilities in the last few years. According to ECHO, the most recent inspections occurred in 2014, with the exception of an inspection at Costa Sur that occurred in 2016. There was no additional action taken by the regulatory agencies following these inspections, and no RCRA compliance issues are noted on ECHO.

In 2010, PREPA received NOVs related to RCRA compliance at Costa Sur, San Juan, Palo Seco, and Aguirre. Documentation related to these alleged violations and their resolution is in the

⁵⁸ See 40 C.F.R. § 260.10 (defining manifest); 40 C.F.R. § 262.20 (describing manifest requirements).

⁵⁹ See 40 C.F.R. § 262.16.

⁶⁰ See 40 C.F.R. § 273.1.

⁶¹ See 40 C.F.R. Part 273.

⁶² See 40 C.F.R. §§ 273.19; 273.39.

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Data Room in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→Plant-Environmental→Regulatory Matters→RCRA Compliance Folders.

B. Underground Storage Tank Program

An inventory of PREPA's underground storage tanks ("USTs"), which are mainly located at technical district mechanical shops, is located in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Waste Documents→Underground Storage Tanks Folder in the Data Room.⁶³ The inventory does not list any of PREPA's generation facilities as having operational USTs. To the best of PREPA's knowledge, the USTs at PREPA's generation facilities have either been permanently closed or removed.

Indeed, as a part of the 1999 Consent Decree, PREPA was required to make various certifications that USTs had been closed, removed, or did not exist at its major power plants. More specifically, PREPA had to "certify, under penalty of law" that to the best of its knowledge "all underground storage tanks have been permanently closed on site or removed from the PREPA San Juan Power Plant, the Palo Seco Power Plant, the Aguirre Power Plant . . . as of the date that PREPA signed this Consent Decree," and that, to the best of PREPA's knowledge, "there are no underground storage tanks present at the Costa Sur Power Plant[.]" PREPA also certified that, to the best of its knowledge, "any underground storage tank system at the Aguirre Combined Cycle Plant is an emergency spill or overflow containment underground storage tank system that is expeditiously emptied after use[.]" These certifications were submitted to EPA on April 20, 1999, which submission completed the Consent Decree's requirements for USTs.

In addition to these certifications, there was also correspondence between PREPA and DNER (then PREQB) in the 1990s documenting the closure of the USTs at the Aguirre, San Juan, and Palo Seco facilities, and various sampling that was conducted at the time of closure. This correspondence has been included in the Data Room in the folders for each plant. PREPA's SPCC plans also contain information regarding the absence of USTs.

C. Used Oil Program

DNER's Regulation for the Management of Non-Hazardous Solid Waste contains provisions for the management of used oil. The DNER used oil regulations govern the generation, collection, storage, transportation, and disposal of used oil. PREPA's facilities generate, store, and collect oil, but PREPA does not transport used oil for disposal. PREPA files annual reports with PREQB documenting that it is not engaged in transportation activities. These reports from 2015 - 2019 are in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Waste Documents →Used Oil Program Folder in the Data Room. PREPA uses a contractor to transport used oil for disposal (such as to recycling plants).

Generators of used oil and facilities that have used oil collection centers must obtain a used oil generator identification number from DNER before beginning operation. A list of 33 facilities with

⁶³ USTs are regulated under RCRA. See 42 U.S.C. §§ 6991, et seq. DNER implements the UST program, and has issued Regulations for the Control of Underground Storage Tanks ("UST Regulations").

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used oil generator identification numbers is located in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Waste Documents →Used Oil Program Folder in the Data Room. These facilities include many of PREPA's mechanical workshops and several of PREPA's generation facilities. Generation facilities that have identification numbers include San Juan, Costa Sur, Cambalache, Mayaguez, Palo Seco,⁶⁴ and Aguirre.⁶⁵

Permits are required from DNER for various activities related to used oil, including for entities that build or operate installations for handling used oil, including used oil collection centers that store more than 220 gallons of used oil (as do various PREPA's facilities). PREPA has permits from DNER that provide "General Permission for Used Oil Storage Installations." These include storage permits for used oil collection centers operated by PREPA. Many of PREPA's mechanical workshops and generation facilities are required to obtain these storage permits. PREPA's generation facilities that have obtained these permits are Aguirre, San Juan, Cambalache, and Mayaguez. The permits are located in the folder for each plant in the Data Room in the Generation→ Permits and Approvals→Environmental Permits and Approvals Folders. Palo Seco and Costa Sur do not currently have permits to store used oil.

The permits issued by DNER and the used oil regulations require PREPA to, among other things, take necessary measures to avoid the improper discharge or disposal of used oil; comply with requirements to submit SPCC plans; maintain tanks in good condition; label tanks with the phrase "Used Oil;" comply with operation and maintenance requirements; and notify DNER in the event of incidents of noncompliance, such as spills. The regulations also require the clean-up and containment of spills, and proper handling and disposal of oil-contaminated materials. As part of the used oil transportation process, used oil manifests are also created and filled out by entities in the chain of custody. PREPA submits those manifests with its reports to DNER under this program.

D. Biomedical Wastes

DNER has issued regulations governing the generation, handling, transportation, and disposition of biomedical waste. Six (6) of PREPA's facilities have medical dispensaries and provide first aid services. Thus, PREPA obtained biomedical waste generator identification numbers for these facilities, including four (4) PREPA generation facilities (San Juan, Palo Seco, Aguirre, Costa Sur), as well as the Monacillos and Neos Buildings. The expiration date for the biomedical waste generator identification numbers was January 18, 2021. PREPA applied for a renewal of the biomedical waste generator numbers for these facilities, and they were renewed by DNER by letter dated November 23, 2020. The renewed generator identification numbers expire on January 18, 2024.

PREPA also maintains a Plan for the Management of Regulated Biomedical Waste for its facilities, and performs training annually for PREPA employees. PREPA also hires a contractor to

⁶⁴ Palo Seco has two identification numbers—one for the main thermoelectric plant and one for the Palo Seco gas turbine units.

⁶⁵ Aguirre has two identification numbers—one for the main thermoelectric plant and one for the Aguirre combined cycle units.

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collect the biomedical waste from each facility for disposal, and the contractor produces a transportation manifest and provides a copy to PREPA.

PREPA's documents related to this program are located in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→ Waste Documents→ Regulated Medical Waste Folder in the Data Room

VI. Toxic Substances Control Act (“TSCA”) and Regulation of Toxic Substances

A. Transformers and Polychlorinated Biphenyl (“PCB”) Program

PREPA's transformers and other electrical equipment are regulated under TSCA if they contain oil with more than 49 parts per million (“ppm”) of PCBs.⁶⁶ The regulations contain various requirements governing storage, disposal, prohibitions against spills and discharges, marking, and recordkeeping concerning PCBs and PCB-containing equipment, including transformers. Transformers with less than 50 ppm of PCBs are considered Non-PCB Transformers under the regulations; transformers with greater than or equal to 50 ppm but less than 500 ppm are considered PCB-Contaminated Transformers; and transformers with 500 ppm or more are considered PCB Transformers.⁶⁷

In 1991, EPA filed a complaint against PREPA for various violations of the PCB regulations, including leaks and discharges, improper storage practices, and marking and recordkeeping noncompliance. PREPA entered into a Consent Agreement and Order with EPA, wherein PREPA agreed to properly label, store, handle, and dispose of PCBs, and to implement (and report on) a 10-year program to sample and test oil-filled transformers in PREPA's distribution system to determine PCB content. However, generation transformers were not included in this testing program. PREPA also initiated a program to dispose of transformers with a PCB content of 50 ppm or more. In 2000, PREPA completed the required sampling and testing program for the distribution transformers. In a March 17, 2005 letter, EPA acknowledged that PREPA had complied with the Consent Agreement requirements regarding the testing program. This documentation is included in the Generation→ Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Transformer Spills, TSCA, and PCBs Folder in the Data Room.⁶⁸ PREPA continues to implement its program to dispose of transformers with a PCB content of 50 ppm or greater. As EPA recognized in its March 17, 2005 letter, this disposal program was acknowledged in the Consent Agreement/Order, but was not made a condition or requirement of the Consent Agreement/Order.

Note that for the PCB-contaminated transformers that are still in service, TSCA does not require that they be removed from service provided that certain use conditions are met (e.g., the transformers cannot be leaking oil or in bad condition). Transformers that contain PCB concentration

⁶⁶ See 40 C.F.R. Part 761.

⁶⁷ See 40 C.F.R. § 761.3.

⁶⁸ The Transformer Spills, TSCA, and PCBs Folder in the data room contains a log that contains the testing data for PREPA's transformers, including their PCB concentrations and serial numbers. Decommissioning and disposal information is also provided in the log, where available.

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of 50 ppm or more are shipped to the mainland United States for disposal, primarily to TCI of Alabama, a company that provides services to dispose of PCB containing equipment.

The vast majority of PREPA's transformers are a part of its transmission and distribution network. However, there are a handful of transformers at each generation facility. There are generally one to two step-up/step-down transformers at the switchyards of the generation facilities. These transformers have not been tested. However, because of the age of many of the generation facilities, these transformers and other electrical equipment in the switchyards may contain PCBs.

In addition to the switchyard transformers, there are also transformers associated with each generation unit: in general, there are (i) one to two main power transformers that provide power to the switchyard/grid, and (ii) normal service station transformers, which provide power to auxiliary equipment. These transformers have also not been sampled, but generally have nameplates that indicate whether they contain PCB oil. A number of these transformers have been replaced. For instance, PREPA has replaced the normal service station transformers at its generation Facilities with Non-PCB Transformers. In addition, a 1997 Site Inspection Report for Costa Sur that was prepared by Weston, Inc. for EPA states that "[d]uring 1996, a total of 18 PCB transformers were removed from the PREPA facility and replaced with non-PCB containing transformers." However, unless replaced, transformers at the generation facilities may contain PCB oil. EPA regulations establish assumptions to be applied in instances where the PCB concentration of a transformer or other electrical equipment has not been established, depending on various criteria, including whether the transformer or other electrical equipment was manufactured before or after July 2, 1979.⁶⁹

In the past, PREPA has had spills related to transformers with greater than 49 ppm of PCBs. In the Transformer Spills, TSCA, and PCBs Folder in the Data Room, there is a log book that identifies transformer spills that occurred in the 1999-2014 date range. There is also a more recent electronic log book that identifies transformer spills in the 2012-2019 date range. The log books generally identify whether the spill was a non-PCB spill or a PCB spill. The majority of the spills are non-PCB spills, but PCB spills have occurred. The vast majority of the spills in the log books also occurred at non-generation facilities, but there are a handful that have occurred at generation facilities.

About two years ago, there was a fire at Aguirre that result in replacement of a transformer, but to PREPA's knowledge, the transformer was a non-PCB transformer.

To the best of PREPA's knowledge, there are currently no ongoing PCB cleanups or recent notices of violation or administrative orders related to PCBs at PREPA's generation facilities.

⁶⁹ See 40 C.F.R. § 761.2. For instance, the regulations state that "[a]ny person must assume that a transformer manufactured prior to July 2, 1979, that contains 1.36 kg (3 pounds) or more of fluid other than mineral oil and whose PCB concentration is not established, is a PCB Transformer (i.e., ≥500 ppm). If the date of manufacture and the type of dielectric fluid are unknown, any person must assume the transformer to be a PCB Transformer." *Id.*

B. Asbestos Abatement

Where required, PREPA encapsulates or removes asbestos-containing materials from its generation and other facilities. This process is conducted on an ongoing basis as necessary in accordance with regulatory requirements.

For its generation facilities, PREPA obtains 5-year asbestos handling permits from DNER to perform removals and disposal of asbestos. PREPA has asbestos handling permits for Aguirre, San Juan, Palo Seco, and Costa Sur. These permits expire in 2022, and are located in the Data Room in the Generation→Permits and Approvals→Environmental Permits and Approvals Folder for each plant. For other plants, PREPA or its contractor must obtain a permit on a project-by-project basis. In order to obtain asbestos handling permits, PREPA must submit a work plan for the asbestos work, and must handle asbestos consistent with the work plan. The permits contain various standards and requirements that must be followed in handling, transporting, and disposing of asbestos, and also require asbestos handling to be conducted consistent with various state and federal requirements. Among other things, removal, transportation, and disposition of asbestos containing materials must be carried out in accordance with Rule 422 of the PRRCAP (“Asbestos Containing Material Management”), as well as various federal requirements including 40 C.F.R. Part 61, Subpart M, National Emissions Standards for Hazardous Air Pollutants (“NESHAP”) for Asbestos.⁷⁰ Among other things, PREPA is required to submit a notice to EPA of its intent to conduct a demolition or renovation activity.⁷¹

Moreover, the asbestos handling permits and PRRCAP Rule 422 require that all personnel engaged in working on the handling, removal, and demolition of asbestos-containing materials must be authorized, trained, certified, and registered with DNER. The permit and various federal and state requirements also impose worker safety requirements for asbestos activities. The permit requires compliance with safety measures and personal protective equipment specified in an asbestos removal plan, as well as Puerto Rico Occupational Safety and Health Office regulations.

Pursuant to the asbestos handling permits, PREPA has to submit a monthly report to DNER that describes the specific tasks related to removal activities carried out at each generation facility and the amount of asbestos material removed. If no asbestos removal has been conducted, the report will state that this is the case. These reports are located in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→ Reports→Asbestos Reports and Information Folders in the Data Room. A final closing report must also be submitted when asbestos activities are complete. This report includes manifests describing the transportation and disposition of associated waste material. Available recent final closing reports are also included in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→ Reports→Asbestos Reports and Information Folders in the Data Room.

⁷⁰ PREPA Title V permits also require that PREPA must comply with 40 C.F.R. § 61.145 (Asbestos NESHAP “Standard for demolition and renovation”) and § 61.150 (Asbestos NESHAP “Standard for waste disposal for manufacturing, fabricating, demolition, renovation, and spraying operations”) as well as Rule 422 of the PRRCAP, when conducting renovation or demolition activities involving asbestos containing materials.

⁷¹ 40 C.F.R. § 61.145(b).

In the past, PREPA has conducted inventories estimating the amount of asbestos at its generation facilities. In addition, PREPA has conducted various sampling, testing, and environmental evaluations related to asbestos at its generation facilities. Where available these inventories and environmental evaluations are also included in the Data Room.

C. Lead Mitigation

DNER's Regulation for the Control of Lead-Based Paint Mitigation Activities applies to PREPA activities. PREPA hires a contractor to perform lead-based paint mitigation control activities for demolitions, renovations, and surface preparations at its generation and non-generation facilities where lead paint is identified through sampling and analysis. Lead-based paint is defined as paint or any other coating of surfaces containing lead equal to 5,000 ppm or more or more than 1.0 mg/cm² using X-ray fluorescence analysis. To perform these activities, lead-based paint mitigation permits are required from, and contractors must be certified by, DNER. After completion of the lead-based paint mitigation activities, the contractor submits a final report and disposal manifest to DNER. Available documentation related to PREPA's lead-based paint mitigation activities, including lead-based paint mitigation permits and reports, is included in the folder for each plant in the Generation→ Environmental Reports and Regulatory Matters→ Plant-Environmental→ Reports→Lead Reports and Information Folders in the Data Room.

VII. Superfund Issues

A. Palo Seco Site

The Palo Seco Site is located in Toa Baja, Puerto Rico (near San Juan), and comprises approximately 200 acres on a peninsula located between Ensenada de Boca Vieja and San Juan Bay. The site includes the Palo Seco Power Plant, a depot area, and the former Bayamón river channel. According to EPA's Record of Decision ("ROD") for the site, "[t]he groundwater under the Site is not used as a potable water source."⁷²

The site was not placed on the Superfund National Priorities List ("NPL") and was addressed via other Superfund authorities. On September 29, 1997, after conducting a site investigation, EPA issued an Administrative Order (CERCLA-97-0302) to PREPA for the investigation and possible remediation of seven areas of interest ("AOIs") at the Palo Seco Site. The Administrative Order required PREPA to carry out a Remedial Investigation/Feasibility Study ("RI/FS") to: (i) determine the nature and extent of contamination and any threat to the public health, welfare, or environment caused by any release of hazardous substances or pollutants from the site; and (ii) determine and evaluate alternatives for the remediation or control of the release of hazardous substances or pollutants from the site.

The Remedial Investigation Report for the Palo Seco Site was finalized in August 2006. Samples of soil, groundwater, sediment, surface water, and biota were collected and analyzed. The data obtained from the RI conducted at the site indicated some exceedances of the screening

⁷² U.S. EPA, Record of Decision, PREPA Palo Seco Site, at 8 (Sept. 2012).

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criteria for certain metals, PCBs, and organic compounds in some soil, sediment, and groundwater samples. The RI also reflected the presence of free product, also known as separate phase hydrocarbons, in several monitoring wells, and the analysis of this free product reflected a low concentration of PCBs. The contaminants exceeding the screening criteria were identified as contaminants of potential concern and were subsequently evaluated to determine whether they posed a risk to human health and the environment. A Human Health Risk Assessment and a Screening Level Ecological Risk Assessment were conducted in 2007.

Although the risks and hazards for human health and the environment were shown in the RI/FS to be within acceptable ranges, there were separate phase hydrocarbons at two locations (AOI 2 and AOI 4) near the fuel oil storage tanks along State Road No. 870.⁷³ On November 6, 2008, EPA and PREPA entered into an Administrative Order on Consent (“AOC”) to address the separate phase hydrocarbons (No. CERCLA-02-2008-2022). The purpose of the AOC was to investigate, evaluate, and address any data gaps associated with delineating PCB-containing separate phase hydrocarbons and PCBs in groundwater, and to remove, to the extent practical, PCB-containing separate phase hydrocarbons at the two AOIs.⁷⁴ Among other things, the AOC required PREPA to complete a removal plan that consisted of determining if groundwater had been impacted by PCBs and the extent of contamination, and to implement a work plan for free product removal.

According to the ROD, this investigation “showed (1) that no PCBs were detected in the groundwater, (2) that the thickness and areal coverage of separate phase hydrocarbons at AOI 2 supported a removal action, and (3) that the thickness and areal coverage of separate phase hydrocarbons at AOI 4 was limited and did not support a removal action.”⁷⁵ Subsequently, PREPA completed a removal action at AOI 2 to remove the separate phase hydrocarbons. On December 13, 2011, EPA issued a removal action completion letter to PREPA, explaining that PREPA had “reached a point of no further removal action cleanup on site.” On April 19, 2012, PREPA submitted for EPA’s review and approval a Final Report of the Separate Phase Hydrocarbon Removal Action (i.e., the final report documenting the removal action). According to the ROD, “[t]he removal activities were successful in removing the majority of the fuel oil floating on the groundwater, although there is some residual oil remaining on top of the groundwater.”⁷⁶

On August 13, 2012, EPA notified PREPA that it had reviewed the Final Report of the Separate Phase Hydrocarbon Removal Action and had determined that the work required pursuant to the AOC had been fully carried out in accordance with its terms. However, the notification stated that this did not affect any continuing PREPA obligations, including, but not limited to, reimbursement of EPA response costs, as specified in the AOC.

In July 2012, EPA issued for public comment its proposed plan for no further action at the site. In September 2012, EPA issued its Record of Decision for the site. The ROD selected the “No

⁷³ U.S. EPA, Record of Decision, PREPA Palo Seco Site, at 11 (Sept. 2012).

⁷⁴ *Id.*

⁷⁵ *Id.*

⁷⁶ *Id.*

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Further Action” remedy, which provided that no funds would be expended on further remedial action work. In the ROD, EPA explained that it had “determined that residual site-related soil, groundwater, sediment, surface water and biota contamination is limited and does not pose a significant threat to human health or the environment; therefore, active remediation is not necessary.”⁷⁷ This determination was based on the conclusions of the August 2006 Remedial Investigation, the March 2007 Human Health Risk Assessment, the March 2007 Screening Level Ecological Risk Assessment, and the April 2012 Separate Phase Hydrocarbon Final Report.⁷⁸ EPA further explained that the “risk assessments indicate[d] that the levels of residual contaminants present at the Site fall within EPA’s acceptable risk range, and therefore further action not needed.”⁷⁹ Accordingly, based on its review of available data, EPA concluded that the “no additional action decision under CERCLA for the PREPA Palo Seco Site is believed to be protective of human health and the environment.”⁸⁰

The AOC included various conditions for PREPA to reimburse EPA for costs incurred by EPA in connection with the site. On December 4, 2015 and on May 11, 2016, EPA sent PREPA a cost package for response costs. The cost package included two components: (i) \$62,077.31 that EPA had incurred between November 21, 2008 and August 13, 2012, in connection with the oversight of the removal action performed under the AOC; and (ii) \$1,473,061.62 in costs that did not fall in that category (i.e., those not directly related to the AOC), including investigative and other response costs that, as of July 31, 2015, had been paid by EPA pursuant to CERCLA with respect to the site. This latter category included costs spanning from 1995 to 2015.

With respect to the first category of costs, on March 7, 2016, EPA sent PREPA a bill collection notice for the \$62,077.31 incurred in connection with the AOC. PREPA paid this amount on March 8, 2016.

With respect to the second category of costs, on July 17, 2017, EPA and PREPA signed a settlement agreement (CERCLA-02-2017-2014). The agreement resolved liability for past costs and required PREPA to pay to EPA the principal sum of \$1,000,000 plus interest in three annual installments. The first payment of \$333,334 was made on August 9, 2017. The second payment in the amount of \$337,838 was made on May 29, 2018. The third payment of \$339,779 was made on July 19, 2019. This final payment completed PREPA’s obligations under the settlement.

PREPA maintains monitoring wells onsite and offsite, which were constructed during the RI. Some of these wells contain free product/diesel, with small amounts of PCBs. PREPA prepared a request for proposals to install free product recovery equipment. The work under the awarded proposal is expected to start in Q1 of 2021.

⁷⁷ U.S. EPA, Record of Decision, PREPA Palo Seco Site, at 3 (Sept. 2012).

⁷⁸ *Id.*

⁷⁹ *Id.* at 60.

⁸⁰ *Id.*

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Documentation related to the site is provided in the Data Room in the Generation→ Environmental Reports and Regulatory Matters→Palo Seco-Environmental→ CERCLA Palo Seco Depot Site Folder.

B. Other Superfund Sites

The Vega Baja Solid Waste Disposal Superfund Site and the PROTECO Superfund Site are both landfills to which PREPA sent waste over the years. Although PREPA is a Potentially Responsible Party for these Superfund sites, they are not discussed in this whitepaper, because they are third-party landfills not owned by PREPA. To the extent the Private Party seeks more information on these sites, documentation is provided in the Data Room in the Generation→ Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Superfund Sites Folder. Additional documents for the Vega Baja site are also at: <https://cumulis.epa.gov/supercpad/SiteProfiles/index.cfm?fuseaction=second.docdata&id=0202533>.

C. Costa Sur CERCLA Site Inspection

In 1997, a Final Site Inspection Report for Costa Sur was prepared by Weston, Inc. for EPA (CERCLIS ID No.: PRD987376704).⁸¹ The 1997 Weston Report details the regulatory history of the site and sampling conducted at the site, and also includes hazard assessments for various pathways (e.g., soil, groundwater) and information on past spills and contamination. This report is in two volumes and is located in the Data Room in the Generation→ Environmental Reports and Regulatory Matters→Costa Sur-Environmental→ CERCLA Site Inspection Folder.

In November 2018, EPA obtained consent for access to the Costa Sur site, and conducted soil and water sampling. PREPA has not received follow-up correspondence from EPA regarding this sampling.

D. Other Contamination Issues: Aguirre Restricted Area

The western portion of the Aguirre Power Plant site encompasses an area known as the Aguirre Restricted Area, and is divided into Areas A-G. The Aguirre Restricted Area was used for the accumulation of surplus material and waste. PREPA entered into an agreement with DNER that restricted PREPA's use of the Aguirre Restricted Area. However, PREPA sought release of the restricted area, because it needed to use portions of the area for a project to transport water from Lake Patillas to Aguirre. PREPA subsequently conducted sampling and submitted a report to DNER. In March 2014, DNER responded to PREPA's report and agreed to release Areas A, B, C, D, and F, finding that the mitigation activities in the area were effective and that the current conditions of Areas A, B, C, D and F did not represent risk to health and the environment. Relevant documentation is in the Data Room in the Generation→ Environmental Reports and Regulatory Matters→Aguirre-Environmental→ Aguirre Restricted Area Folder, as well as a database of soil and other testing results.

⁸¹ Costa Sur is listed as a site in EPA's Comprehensive Environmental Response, Compensation, and Liability Act Information System ("CERCLIS"). See <https://cumulis.epa.gov/supercpad/CurSites/csinfo.cfm?id=0203774>.

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Areas E and G of the Aguirre Restricted Area remain restricted. In order to release these areas, PREPA would need to go through a similar process to that it followed to release Areas A, B, C, D, and F, including by conducting sampling and obtaining DNER approval.

VIII. Corporate Recycling Program

PREPA's Recycling Program allows it to comply with Puerto Rico's efforts to achieve the goals established in Law No. 70 of September 18, 1992, as amended, known as the Law of Reduction, Reuse, and Recycling of Solid Waste in Puerto Rico. PREPA's Recycling Program includes all of PREPA's recycling-related activities. PREPA maintains a Corporate Recycling Plan, which has been certified by the Puerto Rico Solid Waste Authority ("SWA"). PREPA must submit a revised plan every 18 months. PREPA submitted its current revised plan in June 2020, and SWA has not yet issued the new certificate of compliance. Thus, the most recent certificate was issued in January 2019, which certificate can be found in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Recycling Program Folder in the Data Room.

PREPA's program uses recycling as the first option to dispose of paper, tires, cardboard, oils, ink cartridges, batteries, lighting, beams, computers, electronic equipment, and electrical equipment contaminated with PCBs. As part of the program PREPA prepares quarterly reports to SWA. These reports include information about recycling activities carried out during the year, implemented programs, the level of participation, and the amount of materials recovered. The quarterly reports also include information and manifests related to the recycling and disposal of various types of materials, including tires, used oil, and other categories. PREPA's quarterly reports for the last several years are included in the Data Room in the Generation→Environmental Reports and Regulatory Matters→ Environmental Documents Applicable to Multiple Facilities→Recycling Program Folder. PREPA is in compliance with the current 35% recycling requirement.

IX. Prior PREPA Due Diligence

PREPA conducts environmental due diligence assessments, which evaluate issues such as the presence of lead and asbestos in construction materials, construction deficiencies, the presence of contaminated soils or Superfund sites, property environmental and security hazards, and the existence of lawful permits, among other things. Due diligence reports completed by PREPA are in the folder for each plant in the Data Room.

X. Control of Erosion and Prevention of Sedimentation

DNER has issued Regulations for the Control of Erosion and Prevention of Sedimentation. Under these regulations, construction activities that result in soil disturbance are required to obtain a Control of Erosion and Prevention of Sedimentation ("CES") permit from DNER. As part of the permit application process, the applicant must submit a CES plan that documents various best management practices and temporary and permanent measures to manage runoff and control erosion of soil to prevent sedimentation in water bodies. The regulations also require that a project owner submit to PREQB monthly progress reports on the implementation of the CES plan. These monthly reports must be prepared and certified by a professional engineer inspector.

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However, PREPA's contract with the inspector lapsed shortly after Hurricane Maria, in November 2017. As a result, the inspections and reports to DNER did not occur from December 2017 until May 2019, when a new contract was approved. Following Hurricane Maria, PREPA requested a waiver from DNER for various environmental programs, including control of erosion and prevention of sedimentation, but has not received a response as of the date hereof. Inspections again took place from May 2019 through June 2020. Due to a change in PREPA's Executive Director (CEO), PREPA again did not have a contract in place and did not submit the inspections and reports for July 2020 and Aug 2020. PREPA subsequently approved a new contract which began on September 2020 and extends to September 2021.

While most of the facilities that are subject to CES requirements in the last few years have been non-generation facilities, PREPA has identified at least one generation facility that was subject to this requirement: Rehabilitación Estación de Generación Eléctrica, Culebra (completed November 2019). While the project was on hold for a period of time following Hurricanes Irma and Maria, PREPA continued to be required to complete the monthly reports, and did not do so during the time periods in which its contract lapsed, as described above. PREPA did submit reports for the project for May 2019 through November 2019. These reports are in the Data Room in the Generation→Environmental Reports and Regulatory Matters→GT's-Environmental→Culebra Folder.