



REGION 2

NEW YORK, N.Y. 10007

CLEAN AIR ACT SECTION 112(r) INSPECTION REPORT
Arecibo Regional Wastewater Treatment Plant
Arecibo, Puerto Rico, U.S

GENERAL INFORMATION

Stationary Source	Arecibo Regional Wastewater Treatment Plant
Date of Inspection	August 1, 2024
USEPA Lead Inspector	Tyler Diercks, USEPA – Region II, New York City, NY. (Lead Inspector)
Description of Activities	<ul style="list-style-type: none"> • Opening meeting with facility representatives • Program audit • Closing meeting with facility representatives <p>Program audit consisted of the following activities:</p> <ol style="list-style-type: none"> 1. Document review 2. Field verification 3. Personnel interviews
Reason for Inspection	Part 68 Sufficiency Inspection

STATIONARY SOURCE INFORMATION

EPA Facility ID #	100000119524
Current RMP (used for inspection)	Receipt Date: March 23, 2023 (Re-submission) 5-Year Anniversary Date: March 23, 2028.
Facility Location	PR Road 681, Km. 4.0 Bo. Islote II Arecibo, Puerto Rico, U.S. 00612 Latitude: 18.480556; Longitude: -066.677694 (as reported in RMP submission) Tel. (787) 620-2277
Number of Employees	<i>RMP*eSubmit</i> states 17 full time employees (per RMP registration); Facility states 16 employees onsite.
Person Responsible for RMP Implementation	Facility states: Richard Ramirez De Jesus Compliance Specialist
Emergency Contact Person	Mayra Encarnación Emergency Director

REGISTRATION INFORMATION

Process ID #	1000130351
Program Level (as reported in RMP)	Program 3
Process Chemicals	Chlorine
NAICS Code	22132 (Sewage Treatment Facilities)

INSPECTION PARTICIPANTS

Participants	<p>Participants included:</p> <p><u>USEPA:</u> Tyler Diercks, USEPA – Region II, New York City, NY (Lead Inspector) Jonathan Orozco Lopez, USEPA – Region II, New York City, NY</p> <p>Parker Hendrick, Eastern Research Group, EPA Contractor.</p> <p><u>Arecibo Regional Wastewater Treatment Plant:</u></p> <p>Carlos Deida, Phoenix Industrial contractor Raul Fuentes, Operator Johanys Melendez, [Compliance Specialist] Richard Ramirez De Jesus, [Compliance Specialist*] Cesar Rodriguez, Plant Supervisor Cesar Ruiz, General Supervisor Yara Torres Reyes, [Compliance Officer]</p> <p>*Designated RMP Lead</p>
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GENERAL COMMENTS

EPA conducted a Risk Management Plan (“RMP”) Program inspection at Arecibo Regional Wastewater Treatment Plant (“Arecibo RWWTP”) located at PR Road 681, Km. 4.0, Arecibo, Puerto Rico U.S. on August 1, 2024. The inspection focused on the facility’s conformance with regulatory requirements at 40 CFR Part 68. The inspection also included an evaluation of the facility’s annual Tier II chemical inventory (Emergency Planning & Community Right-to-Know Act Section 312). EPA provided site-specific compliance assistance when appropriate.

Areas of Concern, if applicable, are included in *Italics*. These Areas of Concern are not considered compliance determinations. EPA reserves the right to continue its inspection effort, request further information, and take enforcement actions, as appropriate.

OPENING CONFERENCE

The Opening Conference included an introduction of personnel, an EPA-led and ERG (“EPA Team”) discussion regarding the purpose of the inspection, and an overview of facility operations. Arecibo RWWTP discussed its emergency procedures with the EPA Team and provided an overview of facility hazards. The EPA Team and Arecibo RWWTP also discussed matters related to facility operations, process equipment, storage quantities, personnel working at or near the covered RMP process, hours of operation, detection and safety systems, and actions taken for emergency response. The EPA Team also inquired about any updates to the RMP process equipment and safety systems.

RMP Documentation

Arecibo RWWTP maintains both paper-based and electronic Risk Management Program documents. Prior to the inspection, Arecibo RWWTP submitted some Risk Management Program documents for review. Additional documents were requested and reviewed both on-site and off-site. Arecibo RWWTP electronically submitted additional documents following the onsite inspection.

Registration & Applicability [40 CFR 68.10]

The EPA Team reviewed Arecibo RWWTP’ most recent RMP submission. Among other content in the RMP, we reviewed the registration quantity, the emergency contact person information, and the five-year accident history. We also reviewed dates referenced in the RMP that correspond to certain regulatory requirements, such as the five-year Process Hazard Analysis.

Management System [40 CFR 68.15]

The EPA Team reviewed Management System documentation. We observed a management system document, and Risk Management Program responsibility structure including the lines of authority, description, and functional responsibility of delegating specific Risk Management Program elements.

Hazard Assessment [40 CFR 68.20-68.39]

The EPA Team reviewed Arecibo RWWTP’ Worst Case (“WC”) and Alternative Case (“AC”) release scenarios, as reported in the RMP, and as presented in documentation completed in 2023. We

verified the appropriateness of WC and AC release scenarios and whether the correct number of scenarios were reported in their RMP submission. The EPA Team also reviewed methodologies used to calculate WC and AC release scenarios, distance-to-endpoints, and public and environmental receptor information, including using the most recent Census data.

Five-Year Accident History [40 CFR 68.42]

The EPA Team reviewed the Five-Year Accident History and inquired about any applicable accidents and incidents. Arecibo RWWTP stated that they have not had any accidents, incidents, or chlorine releases that require implementing regulatory requirements.

Process Safety Information (PSI) [40 CFR 68.65]

The EPA Team reviewed and discussed PSI with Arecibo RWWTP personnel. We analyzed information pertaining to hazards, technology, and equipment in the covered processes. We reviewed the Safety Data Sheet, Block Flow Diagram, Piping and Instrumentation Diagram (“P&ID”), maximum intended inventory, safe operating limits, emergency scrubber system, and a topographic map of the facility.

EPA reviewed that documentation concerning conformance with Recognized and Generally Accepted Good Engineering Practices (“RAGAGEP”) is addressed in the PSI program document, with a certification of the facility following all design codes and standards for operation and maintenance. *However, EPA observed that the documentation did not list and/or include the current RAGAGEPs being followed, such as Chlorine Institute pamphlets, the American Society of Mechanical Engineers (ASME), the American National Standards Institute (ANSI), and the National Fire Protection Association (NFPA) 704.*

The chlorinator room at Arecibo RWWTP facility is equipped with an intake and exhaust fans that are immediately adjacent to one another and located near the floor. *Additionally, no documentation was available to determine if the fans have been sized to provide uncontaminated air in the event of a release that requires the use of the emergency ventilation system.*

Process Hazard Analysis (“PHA”) [40 CFR 68.67]

The EPA Team reviewed the Arecibo RWWTP PHAs. We reviewed the last two PHAs conducted in 2018 and in 2023. We evaluated the appropriateness of the PHA methodology selected, the team members who participated in the PHAs, the hazards identified, and the tracking of findings and action items.

The EPA Team observed that the PHAs were performed by a team using the Checklist methodology for recognition, evaluation, and control of the hazards involved in the chlorine process, which included at least one person knowledgeable in the methodology and at least one employee knowledgeable in the system.

EPA found the Checklist methodology used in the 2018 PHA, did not find any risks, findings, or led to any recommendations for potential process hazards in the methodology used by the Facility team.

The EPA Team observed that the 2023 PHA identified some action items/recommendations to be addressed with dates of the final status of the actions or recommendations. *However, the action plan did not have due dates for any of the recommendations or actions addressed by Arecibo RWWTP.*

The EPA Team observed the last action of the 2023 PHA (94) “Se mantiene en operacion el sistema de seguridad de cloro ante una falla electrica y el generador de emergencia no se activa (ejemplo: ducha de emergencia, sensores/alarmas de escape de cloro, etc.)” [The chlorine safety system remains in operation in the event of electricity failure and the emergency generator does not activate (example: shower emergency, chlorine leak sensors/alarms, etc.)]. The written action plan states: “se solicitara la compra de un battery backup para las alarmas. Nota: planta cuenta con generador de emergencia.” [The purchase of a battery backup for the alarms will be requested. Note: Facility has an emergency generator.”]. *The EPA Team observed that the Facility took more than fifteen (15) months to assure that the recommendation was resolved.*

Operating Procedures [40 CFR 68.69]

The EPA Team reviewed operating procedures and their conformance with regulatory requirements. We reviewed chlorine operating procedures addressing initial startup, normal operations, temporary operations, emergency shutdown, emergency operations, normal shutdown, and startup following a turnaround, or after an emergency shutdown.

The EPA Team noticed that the operating procedures have been reviewed and certified annually for more than the past five (5) years reflecting these operating procedures are current and accurate.

During the on-site visit, the EPA Team observed that operating procedures are available to employees in binders inside the conference room, but several are not in the current operating places such as the chlorine storage room, and the chlorinator room.

Training [40 CFR 68.71]

The EPA Team reviewed Arecibo RWWTP’s training program. We observed training records of written tests, employee’s names, training dates, training certifications, and score levels for each training.

The EPA Team learned that Arecibo RWWTP manages a training program called “Manejo de Cloro – Inicial y Repaso” [Chlorine Management – Initial and refresher]. We reviewed training certificates with employee’s names and training dates. *EPA observed that several chlorine management refresher trainings have not been provided at least every three years. The last two refresher training dates are in 2019 and 2024.*

The EPA Team learned that Arecibo RWWTP’s training program states that the frequency of operating procedure trainings is “De haber cambios en los Procedimientos Operacionales o de ser requerida una Operación Temporera.” [If there are changes in the Operational Procedures or if there is a Temporary Operation]. *EPA observed that operating procedure trainings do not have a refresher frequency in the training program.*

Mechanical Integrity [40 CFR 68.73]

The EPA Team reviewed Arecibo RWWTP's Mechanical Integrity inspections and tests for specific pieces of equipment. Arecibo RWWTP provided a list of chlorine alarms instrument with a trimonthly calibration frequency for the chlorine system.

The EPA Team reviewed maintenance records of equipment for ton containers vacuum regulators, switch over, chlorine rotameter, gas shutoff valves, ejectors, automatic control valves, valves and pipes, pressure clocks, chlorine alarms and leak detectors, exhaust repair kits, extractor, storage trunnions and anti-panic lock. The mechanical integrity program for Arecibo RWWTP has inspections, tests, and replacement for specific pieces of equipment according to the manufacturer's specifications with a frequency of every five or six months. The EPA Team learned the inspections of all critical equipment maintenance are performed by the contactor Phoenix Industrial Sales, Inc.

Management of Change ("MOC") [40 CFR 68.75] & Pre-Startup Review ("PSR") [40 CFR 68.77]

The EPA Team observed that Arecibo RWWTP implements a Management of Change ("MOC") and Pre-Startup Review ("PSR") policy document. The EPA Team observed that Arecibo RWWTP implements MOC and PSR written procedures.

EPA observed in the last five (5) years (2019-2023) Arecibo RWWTP certified there have not had any MOC in the facility in any of the mentioned years.

EPA observed that the 2022 Compliance Audit have two findings in 68.75 Management of change, and 68.77 Pre-startup review "No se observo evidencia de orientacion a las empleados para el cambio de balanza". [No evidence of training to the employees for changing the scale]. The action plans for these recommendations appeared to be completed in 7/2022 and 8/2022. *However, EPA observed Arecibo RWWTP certified in a MOC certification in last 5 years (2019-2023) there have not had any MOC and specifically, regarding the chlorine scale.*

EPA observed that there is no written record indicating a PSR was completed for the chlorine scale project, specifically in the "Formulario K: Formulario de Pre-arranque en el Apendice K dentro del Plan RMP-PSM." [Form K: Form Pre-start in Appendix K within the RMP-PSM Plan].

Compliance Audits [40 CFR 68.79]

The EPA Team reviewed Arecibo RWWTP's recent Compliance Audits. The two most recent Compliance Audits were completed in 2019 and 2022. We learned that the system maintenance and operations staff participated in the Compliance Audits.

EPA observed that the 2019 Compliance Audit had several recommendations that exceeded the targeted date of completion. One of the lists of recommendations remains unsolved [HAZWOPER certification expired] and has a targeted date of 06/2025 (up to 6 years later for completion).

The EPA Team observed that all recommendations and action plans for the 2022 Compliance Audit had targeted dates for completion up to more than three years (12/2025). *Although all*

recommendations had the status “completed” in the same year 2022, EPA observed some of the action plans appeared to not be completed.

EPA observed the following potential areas of concern pertaining to Compliance Audit reports:

68.67 Process Hazard Analysis: The 2018 PHA recommendations were not available for review. EPA observed that the 2022 compliance audit did not have an action plan for this finding.

68.73 Mechanical integrity: the chlorine lifting beam did not have the annual certification. EPA observed that the 2022 compliance audit did not have an action plan to annually certify the chlorine lifting beam.

68.87 Contractors: the contractor guidance for implementing safe work practices was not available. The action plan for this recommendation appeared to be completed in 7/2022. EPA observed that there are no written records of the appendix N: Guidance to Contractors indicating the action plan was completed.

Incident Investigation [40 CFR 68.81]

The EPA Team reviewed the Five-Year Accident History and inquired about any applicable accidents and incidents. Arecibo RWWTP stated and certified that they have not had any applicable chlorine accidents, incidents, or releases at the facility.

Employee Participation [40 CFR 68.83]

The EPA Team reviewed Arecibo RWWTP’s Employee Participation Plan and evaluated its implementation. We confirmed that operators were included in the development of the PHAs.

We also verified whether operators were made aware of the inspection. EPA conducted an employee interview during the inspection, where operators knew where the PHA, Operating Procedures, Process Safety Management and RMP documents could be accessed.

Hot Work Permit [40 CFR 68.85]

The EPA Team reviewed Arecibo RWWTP’s Hot Work Permit Program. We observed that there were no open Hot Work projects during the inspection and for the last three years.

Contractor Safety [40 CFR 68.87]

The EPA Team observed Arecibo RWWTP did not provide its contractor safety plan, and did not provide records of the contractor, Phoenix Industrial Sales, Inc., indicating that their contract employees are trained in the work practices to safely perform their work.

Emergency Response [40 CFR 68.90 – 68.96]

The EPA Team reviewed Arecibo RWWTP’s Emergency Response Plan (“ERP”) with operational procedures. We also confirmed that Arecibo RWWTP is a responding stationary source. EPA learned that Arecibo RWWTP has fire extinguishers, chlorine containment equipment (e.g., B-Kit and chlorine containment unit or "coffin"), Self-Contained Breathing Apparatus (“SCBA”), HAZMAT level II suits, and emergency first aid as its emergency response equipment.

The EPA Team reviewed that Arecibo RWWTP conduct monthly inspections, testing, and maintenance procedures for the emergency equipment, ensuring good condition in case of a real emergency.

The EPA Team reviewed that Arecibo RWWTP did coordinate virtually through the Teams platform emergency coordination activities with local planning and response authorities for the year 2023.

The EPA Team reviewed the fit testing records for all employees for the past 2 years. *EPA observed Arecibo RWWTP did not provide fit testing records for all employees in 2022.*

Emergency Planning and Community Right-to-Know Act (EPCRA) Section 312

The EPA Team evaluated Arecibo RWWTP' 2023 annual Tier II Chemical Inventory. EPA focused on chlorine and other potential Part 68 listed substances. EPA observed that Arecibo RWWTP submitted the Tier II Chemical Inventory to the Local Emergency Planning Committee, the State Emergency Response Commission, and the Puerto Rico Fire Brigade.

FACILITY TOUR

During the Facility Tour, The EPA Team spot-checked items referenced in facility documentation and evaluated conformance with RAGAGEP. Activities included, but were not limited to, verifying the signage of full and empty cage cylinders, valve tags, evaluating the condition of process equipment, identifying the location of sensors, checking pipe labels and supports, and evaluating emergency shutoff systems. The EPA Team, with permission from Arecibo RWWTP personnel, took photographs of equipment and safety systems, including process areas, piping, pipe labels, eyewash stations, chlorine sensors, detection alarms, and emergency shut-off valves.

The EPA Team observed the following potential concerns pertaining to RAGAGEP at Arecibo RWWTP:

- *A lack of signage warning of the danger of chlorine (e.g., NFPA 704 diamonds) for doors providing access to the chlorinator room, and to the fenced chlorine storage area. The lack of National Fire Protection Association (NFPA) diamonds appears inconsistent with the following RAGAGEP: Chlorine Institute Pamphlet 155, Water and Wastewater Operators Chlorine Handbook, Edition 3 (2014) Section 4.4, and NFPA 704, Standard System for the Identification of the Hazards of Materials for Emergency Response (2022) Section 9.1.*
- *During the Facility walk-through, The EPA Team observed that the mechanical ventilation system was not operating while people were present in the chlorination room. Not operating the ventilation system continuously when the chlorination room is occupied appears inconsistent with the following RAGAGEP: Section 21.2.16.2. of NFPA 400 (2022).*

