



REGION 4

ATLANTA, GA 30303

ELECTRONIC MAIL

CONFIRMATION OF EMAIL RECEIPT REQUESTED

Mayor Daniella Levine Cava
Miami-Dade County
Stephen P. Clark Center
111 NW 1st Street
Miami, Florida 33128
mayor@miamidade.gov

Re: Compliance Evaluation Inspection
South District Wastewater Treatment Plant
Permit No. FLA042137
Consent Decree Case No.1:12-cv-24400-FAM

Dear Mayor Cava:

The U.S. Environmental Protection Agency, Region 4 conducted a Compliance Evaluation Inspection (CEI) on Miami-Dade County's (the County) South District Wastewater Treatment Plant (SDWWTP) on February 4, 2025. The objective of the CEI was to assess the County's compliance with the Clean Water Act and the State of Florida's non-National Pollutant Discharge Elimination System (non-NPDES) permit, and to evaluate the compliance status of the SDWWTP Projects, as required by the Consent Decree. The inspection results have been summarized in the enclosed CEI Report.

If you have specific questions about the inspection report, please contact Mr. Brad Ammons via email

at ammons.brad@epa.gov or at 404.562.9769. Please verify receipt of this letter and report by emailing Mr. Ammons at the email address provided.

Sincerely,

**JAIRO
CASTILLO**

Digitally signed by
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United States Environmental Protection Agency Region 4

Enforcement and Compliance Assurance Division

Water Enforcement Branch

61 Forsyth Street, SW

Atlanta, Georgia 30303



Compliance Evaluation Inspection Report

Miami-Dade County South District Wastewater Treatment Plant

8950 SW 232nd Street

Cutler Bay, FL 33190

Permit Number: FLA042137

Project No. CV-FLA042137-02042025

Date of Inspection:

2/4/2025

Inspectors:

Brad Ammons, EPA Region 4

Inspection Report Prepared by:

Brad Ammons

Title and Approval Sheet

Title: Miami-Dade SDWWTP Compliance Evaluation Inspection Report
CV-FLA042137-02042025

Approving Official:

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Jairo Castillo, P.E., Chief
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Enforcement Officer:

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Brad Ammons, Environmental Engineer
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1. Introduction

On February 4, 2025, a representative of the United States Environmental Protection Agency, Region 4 and the Florida Department of Environmental Protection (FDEP) conducted a Compliance Evaluation Inspection (CEI) on Miami-Dade County's South District Wastewater Treatment Plant (SDWWTP). The inspection was conducted under the authority of Section 308 of the Clean Water Act (CWA), as amended. This report provides a summary of the inspection.

2. Participants

Name	Organization	Contact Information
Brad Ammons	EPA Region 4	Ammons.Brad@epa.gov
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3. Facility Description

The SDWWTP is a pure oxygen activated sludge treatment system located at 8950 SW 232nd Street in Cutler Bay, FL. The facility is currently permitted under the permit number FLA042137 to discharge 112.5 million gallons per day (MGD) through 17 deep Underground Injection Control (UIC) wells, regulated under the Safe Drinking Water Act (SDWA).

The SDWWTP consists of two treatment plants in parallel, with a third plant in construction of similar design. After the headworks (bar screens and grit removal), the flow enters the enclosed, pure oxygen aeration basins and then to secondary clarifiers of each plant. After the clarifiers, the treated effluent is treated through a sand filter and then passes through a chlorine contact chamber which uses sodium hypochlorite for disinfection (no de-chlorination prior to disposal through the UIC wells). Solids are sent through concentrators and digesters before being thickened and dewatered in centrifuges and then further dried in on-site drying beds. Sludge is either composted or landfilled. The SDWWTP produces approximately 15 MGD of industrial reuse water that is pumped to Florida Power and Light's Turkey Point nuclear plant for cooling water, which is south of the SDWWTP. The rest of the flow is injected through the 17 UIC wells. Refer to Figure 1 for an aerial view of the SDWWTP.

The facility's current wastewater plant staff are as follows:

- 13 Florida Wastewater Treatment Class A Operators.

- 33 Florida Wastewater Treatment Class B Operators.
- 6 Florida Wastewater Treatment Class C Operators.

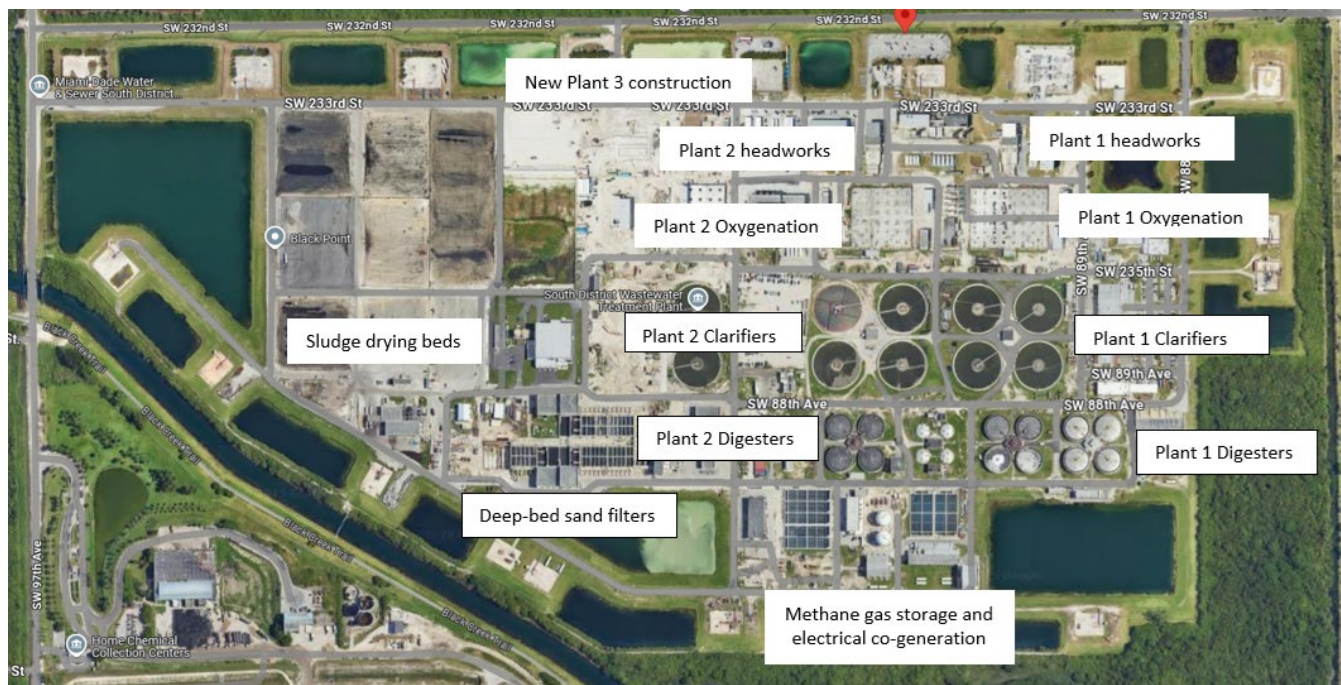


Figure 1. Aerial View of the SDWWTP.

4. Inspection Procedures

The overall objective of this CEI was to evaluate the condition and operational performance of the SDWWTP and Miami-Dade County's self-monitoring program and to offer compliance assistance as needed. Specific tasks included conducting an opening conference, interviewing SDWWTP staff, reviewing laboratory and Discharge Monitoring Report (DMR) records, conducting a SDWWTP walkthrough, and a closing conference.

5. Findings & Conclusions

A. Permit Review

Miami-Dade County's permit FLA042137 has an effective date of December 9, 2017, and expired on December 8, 2022. As this is a non-NPDES permit, it is not listed as administratively continued. The permit lists Effluent Limitations and Monitoring Requirements for disposal through the UIC wells.

B. Records and Reports

The Discharge Monitoring Report (DMR), the underlying lab report, and the Monthly Operating Report (MOR) for January 2022 and July 2024 were reviewed and found to be in order, covering the 3-year retention period. The County's on-site lab analyzes all the pollutants required in the permit, while the County has a contract laboratory (Pace Analytical) that analyzes a few parameters for the MOR and metals in the sludge.

C. Flow Measurement

The SDWWTP has 3 separate force mains entering the SDWWTP (3 separate influent electromagnetic flow meters) and 2 effluent sampling locations (east and west) before distributing the treated flow to the UIC wells. The electromagnetic influent flow meters are calibrated quarterly even though the permit only requires annual calibration. Flow for the UIC wells is calculated in the MOR by pressure and other controls and equipment. These effluent venturi flow meters are also calibrated quarterly. Finally, the industrial reuse water sent to the Florida Power and Light's Turkey Point nuclear power plant is separately metered and calibrated.

D. Sampling/Laboratory

The SDWWTP's on-site lab analyzes all the required parameters for the DMR and everything except for a few parameters for the MOR, as well as the biosolids metals. The lab is broken into a microbiology area (for Total Fecal Coliform, E. Coli, and sludge Fecal Coliform), and an area for conventional pollutants (e.g. Carbonaceous Biochemical Oxygen Demand (CBOD₅), Total Suspended Solids (TSS), Total Solids). The lab is certified to analyze Total Dissolved Solids (TDS), TSS, Total Solids, pH, Conductivity, CBOD₅, and the nutrients. The County is working to get the on-site lab certified for analyzing metals.

E. Site Visit (Operation and Maintenance)

The following components were observed for Plants 1 and 2 (See Appendix 1 for photos):

- The Plant 1 influent electromagnetic flow meter read 44 MGD. This plant will be getting a new influent electromagnetic flow meter with the Plant 3 upgrades.
- A new head works building was under construction during this visit and was scheduled to be complete by 2/28/2025 (Photo 1).
- A new electrical building has been completed (Photo 2).
- There are three Plant 1 influent bar screens and fine screens of 6 mm size.
- One of the two influent grit flumes in Plant 1 was out of service for maintenance.
- Plant 1's influent automatic sampler in the headworks building was noted to be 2⁰ Celsius.
- Plant 1 has three odor control scrubbers to treat odors at the head works (two run at a time) (Photo 3).
- Plant 1 has four total oxygenation tanks. Plant 1 oxygenation tanks 1 and 2 were offline at the time of inspection and flow was being treated in oxygenation tanks 3 and 4 (Photo 4). Plant 1 will be transitioning to step feed treatment in the oxygenation tanks.
- In the oxygenation control room, the operators ran settleometer tests (Photo 5). Oxygen production Plants 1 and 2 were in service, with Plant 3 on standby. The County's plan for the Plant 3 construction is to replace the two existing 70 kiloton oxygen production plants with three new 125 kiloton plants.
- The Plant 1 secondary clarifiers appeared to be well maintained, and the weirs are covered to control algae buildup (Photo 6).

- Plant 2's influent electromagnetic flow meter read 50 MGD at the time of inspection.
- Plant 2's headworks consist of four bar screens and fine screens (same size as Plant 1) with two grit flumes. One of the bar screens was out of service for maintenance (Photo 7).
- Plant 2's influent automatic sampler was noted to be 1.7⁰ Celsius.
- Plant 2 has three odor control scrubbers to treat odors from the headworks (two run at a time), (Photo 8).
- Plant 2 has three total oxygenation tanks and all three were in service. The County will be adding a fourth oxygenation tank to Plant 2 and upgrade to step feed oxygenation for the State's Ocean Outfall Legislation (OOL).
- The Plant 2's secondary clarifiers appeared to be well maintained, and the weirs are covered to control algae buildup (Photo 9).
- There are seven screw pumps for Plant 1 and 2's combined flow to then be lifted into the deep-bed sand filters. There are a total of 30 sand filters, with six of them out of service for maintenance. New sand filters for the Plant 3 upgrades were under construction (Photo 10).
- Sodium Hypochlorite is used in the chlorine contact chamber with no dechlorination before injection through the UIC wells.
- Methane is captured from the sludge digestion process and is stored in two large spheres to be used to generate electricity for the SDWWTP. Plant operator estimated about 35-40% of the facility's power comes from this co-generation building using the methane.
- The new sludge thickening and dewatering building was under construction consisting of six thickening centrifuges and four dewatering centrifuges. The thickening side was in operation (Photo 11). The dewatering side was scheduled to be operational in two weeks (Photo 12).
- Three additional UIC wells were under construction at the time of this inspection (Photo 13).

F. Sludge Handling

Sludge is wasted through concentrating, digestion, thickening, dewatering (w/polymers) and subsequently further dried on on-site sludge drying beds. Non-Class-B sludge is not placed on the sludge drying beds due to odors. Dry sludge is either composted by a contractor or landfilled at the County's landfill just south of the SDWWTP.

G. Effluent/Receiving Water

Not applicable as disposal is through industrial reuse and UIC wells.

6. Discussion

Overall, the SDWWTP appears to be well operated and maintained. Most of the Consent Decree Projects at the SDWWTP have been completed. The remaining three projects are still ongoing and projected to be complete before the September 27, 2027, Consent Decree deadline:

- Consent Decree Sub-Project 1.3(1) (structural rehabilitation of Plant 1's oxygenation tanks 2 & 3 and Plant 2's oxygenation tank #7), Sub-Projects 1.3(2) (oxygenation mixer and electrical building), and 1.3(3) (Electrical substations) are under the purview of Florida's OOL.

- Project 1.7 (Digesters and Control Building) is anticipated to be completed by March 24, 2027.
- Project 1.8 (Dewatering Facility) was anticipated to be completed by March 18, 2025, according to SDWWTP plant operators. However, the County bid this design-build contract to include dewatering facilities at both the SDWWTP and the Central District WWTP and the current projected completion date for both WWTPs is April 9, 2025.

The facility shows no effluent limit violations in EPA's Integrated Compliance Information System database because it is a non-NPDES permit, but facility operators discussed TSS and Fecal Coliform violations of the State non-NPDES permit. The County should continue to rehabilitate and upgrade the SDWWTP to meet the State of Florida's OOL and UIC requirements, as well as expansion for projected growth in the SDWWTP service area.

Appendix 1: Photograph Log



Photo 1: New headworks building.



Photo 2: New electrical building equipment.



Photo 3: Plant 1 odor control scrubbers.



Photo 4: Plant 1 O₂ tanks 1 & 2.



Photo 5: Settleometer testing station.



Photo 6: Plant 1 secondary clarifier.



Photo 7: Plant 2 influent bar screens.



Photo 8: Plant 2 odor control scrubbers.



Photo 9: Plant 2 secondary clarifier.



Photo 10: New deep-bed sand filters.



Photo 11: New sludge thickening centrifuges.



Photo 12: New sludge dewatering centrifuges.



Photo 13: New UIC well #18.

END OF REPORT