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San Antonio Water System

March 15, 2017

CERTIFIED MAIL-RETURN RECEIPT REQUESTED: 91 7199 9991 7030 9700 7791

Ms. Judy Edelbrock
Water Enforcement Branch (6EN-WC)
U. S. Environmental Protection Agency, Region 6
1445 Ross Avenue, Suite 1200
Dallas, TX 75202-2733

Received
MAR 17 2017
6EN-W

Re: Administrative Order; Docket Number: CWA-06-2016-1770
NPDES Permit Number TX0065641

Dear Ms. Edelbrock:

The San Antonio Water System (SAWS) received a letter dated August 12, 2016 from Mr. Blevins, Director, Compliance Assurance and Enforcement Division of the U.S. Environmental Protection Agency (USEPA) regarding discharges from Mitchell Lake (Lake) that are subject to the above-referenced NPDES permit. SAWS replied to the letter on September 15, 2016. SAWS noted in its letter, followed up by a phone conversation, that SAWS would report to USEPA not later than March 15, 2017 concerning its evaluation of achieving permit compliance. This letter is SAWS' report.

SAWS is focusing its efforts for achieving permit compliance with the strategy outlined in this letter, but SAWS will not preclude other options if deemed more advantageous.

Description and Background

Mitchell Lake is not a standard brick and mortar wastewater treatment facility. Instead, the Lake is a unique and environmentally sensitive natural facility that has become an active destination attraction within San Antonio for local residents and national and international visitors. The Lake surface area covers approximately 600 acres and it provides essential habitat where migrating birds can rest and feed. Due to its unique location and environmental conditions, the Lake is an area of very high biodiversity. More than 341 migrant bird species have been documented at the Lake, including the Yellow Billed Cuckoo that is federally listed as threatened and 30 species that are on the Audubon Watch List. In 1973, the City Council of the City of San Antonio designated the Lake as a wildlife refuge. In 2004, SAWS entered into an operating agreement with the National Audubon Society, creating the first Audubon Center in Texas. The Audubon Center has up to 1,000 visitors in a single day, and the wide variety of programs that it provides are a heavily used educational resource for area students, including low income students from nearby communities. Any compliance measures that SAWS implements should preserve this unique character of Mitchell Lake, and enhance the environment that the Audubon Center, migratory birds and the community have come to appreciate.

Discharges from Mitchell Lake only occur after significant rainfall events. The Lake is very shallow and does not stratify, therefore sunlight results in algae growth. Rainfall events combined with the existence of algae causes the BOD, TSS, pH and DO excursions that are referenced in the USEPA letter. The intermittent nature of the discharges after rainfall makes traditional treatment options impractical. Additionally, algae treatment is especially challenging using conventional wastewater treatment technology.

As traditional treatment options are impractical in this case, SAWS, working with consulting experts, has conducted preliminary feasibility evaluations of reconstructing the existing dam and spillway, and of constructing extensive treatment wetlands below the Lake as a means of complying with NPDES permit discharge requirements while retaining the Lake's characteristics. These evaluations demonstrate that improving the dam and installing water level control features in the dam spillway should provide SAWS with operational flexibility for the Lake. By improving on the original dam structure, and installing lake level controls (likely in the form of draft tubes), the storage range of the Lake would be greater and the Lake would be able to capture and retain a 100 year rainfall event. A properly constructed water level control feature would allow SAWS to release consistent and uniform flow downstream of the Lake after a significant rain event.

Below the reconstructed dam, SAWS has also conceptually evaluated the available, suitable acreage for construction of treatment wetlands. Using the water level control features of a reconstructed dam, SAWS could provide laminar flows by gravity to approximately 112 acres of wetlands. These wetlands have a hydraulic capacity of approximately 14 million gallons per day. SAWS anticipates that a demonstration project will show that a wetlands system can be operated in a manner that complies with all existing NPDES effluent water quality requirements.

The additional treatment wetlands, combined with operational level controls for the lake, could provide compliance with NPDES permitting while achieving the goal of expanding and enhancing the unique Mitchell Lake environment overall. Additional wetlands would improve the available bird habitat, support the mission of the Audubon Center, and improve the community's ecological and educational resources. While SAWS has conducted preliminary evaluations of a wetland system, SAWS will continue to keep other treatment and operational alternatives under consideration.

<u>Next Steps to Confirm the Preliminary Evaluation Results and Necessary Considerations for an Integrated Dam and Wetlands Treatment System</u>

Several evaluation and administrative steps remain necessary to advance the concepts described above. Several items listed below may be able to occur simultaneously.

- SAWS proposes to conduct an engineered pilot project to demonstrate potential system performance and capabilities for the new and improved Mitchell Lake features described above.
- SAWS will need to evaluate and take any necessary actions to obtain permits for work on the dam.
- An evaluation of sequencing the work to minimize disruption of bird migrations will need to be completed, along with any required permitting steps.
- SAWS will need to evaluate acquiring additional acreage below the Lake for wetlands construction.
- SAWS will need to establish the seasonal timing requirements for planting cuttings and establishing wetlands macrophytes after construction to ensure treatment effectiveness.
- SAWS will need to meet with regulators to discuss the permitting implications of a wetlands system.
- SAWS will continue to keep other treatment alternatives under consideration if a better performing, more readily implementable or environmentally suitable option becomes available.

Additionally, SAWS will continue working with the U.S. Army Corps of Engineers on wetlands enhancements that will improve habitat.

Ongoing Communications with USEPA on Progress

SAWS proposes to meet with the USEPA and present more detailed information about the proposal and conceptual plan described above, at the EPA's earliest opportunity. SAWS recommends that biannual written updates be provided to USEPA on progress with the plan.

SAWS is pleased that these preliminary evaluations have provided very promising results, and we look forward to further confirming these results through pilot studies. We are confident that a suitable approach exists that can advance the USEPA requirements for permit compliance for this unique system, that environmental enhancements can be achieved through this work, and that the community resource that is Mitchell Lake can be expanded. SAWS appreciates the USEPA continuing to allow SAWS the time necessary to confirm that "win-win" opportunities can be identified and achieved for this unique facility that is a destination location known by visitors across the globe.

Please let me know if you will need additional information. Otherwise, I will continue to update you as to our further progress with the project.

Sincerely,

Steven M. Clouse
Senior Vice President/Chief Operating Officer

Cc: Mr. John Blevins
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