Notes from the Quarterly Meeting of the Everglades Technical Oversight Committee (TOC)

June 27, 2023

South Florida Water Management District
3301 Gun Club Road, West Palm Beach, FL 33406

TOC Representatives:

Julianne LaRock, TOC Chair, SFWMD	Lori Miller, LNWR
John Barkett, Special Master	Edward Smith, FDEP
Daniel Crawford, USACE	Donatto Surratt, ENP

Note: *This meeting was conducted in person, online, and by phone, and was recorded by a court reporter. Copies of the transcript are available for purchase. Please contact Florida Court Reporting (561-689-0999) for more information. Handouts and presentations are available on the TOC website (https://www.sfwmd.gov/our-work/toc) and a recording of the meeting is available online at TOC - Granicus Content.*

Note: *Definitions of agency acronyms are provided at the end of the notes.*

1. TOC Opening Business – Julianne LaRock, SFWMD

1A. Welcome, Announcements, and Identification of Participants

Julianne LaRock called the meeting to order.

1B. Agenda Modifications and Documents Available on the TOC Website

Julianne reviewed the agenda and the list of files recently posted on the TOC website. There were no requests to modify the agenda.

1C. Approval of Meeting Summary for February 28, 2023

The TOC approved the February 28, 2023, meeting summary with no requests for changes.

Associated Online Documents:

- Final Agenda for June 27, 2023
- Draft Meeting Notes for February 28, 2023, Meeting

2. Settlement Agreement Quarterly Report, Fourth Quarter 2022, October–December – Chelsea Qiu, SFWMD

Chelsea Qiu presented the Settlement Agreement Report for the Fourth Quarter 2022, October–December 2022, which includes results of total phosphorus (TP) monitoring in the Arthur R. Marshall Loxahatchee National Wildlife Refuge (LNWR), Shark River Slough (SRS), and Taylor Slough and Coastal Basins (TSCB) through December 2022. Results for SRS were calculated using provisional flow data and are preliminary.

Refuge 14-station geometric mean TP values for October, November, and December 2022 were below the computed long-term levels (LTLs). Fourteen stations were sampled each month. The 36-month average TP geometric mean is 6.8 parts per billion (ppb), which is 2.5 ppb below the 36-month average LTL of 9.3 ppb.

For SRS, preliminary results were presented for the 12-month periods ending October, November, and December 2022. The provisional data shows that TP flow-weighted mean concentrations (FWMC) for this quarter were higher than the LTL.

For TSCB, results for the 12-month periods ending in October, November, and December 2022 were presented. TP FWMC values for TSCB for Federal Water Year 2023 (FWY2023; October 1, 2022–September 30, 2023) continue to be less than half of the LTL (11 ppb) at 5.1, 5.2, and 5.1 ppb, respectively. The observed percentages of sampling events greater than 10 ppb, which were 4.2, 4.1, and 4.1%, respectively, were far below the monthly guideline of 53.1%.

Questions, Comments, and Discussion:

Bill Walker, consultant to DOI, mentioned that he developed a regression model 5 years ago for the Combined Operational Plan (COP) that shows TP concentrations are much more correlated with stage than flow. The model operates at a shorter time step (a year) and the recent data can be compared to the predictions of the regression model. This could be useful when implementing remedies as it gives a more accurate result than the compliance equation.

John Barkett, referring to Slide 13, asked if the trend line had been consistently over the LTL (7.8 ppb) for a couple of years at all the 12-month periods, not just those used for compliance. Bill Walker replied that the limit has not been constant; it increases as flows are lower. Julianne LaRock offered to look at the data tables for SRS and see if it's being tracked. Chelsea said her later presentation should clarify.

Associated Online Documents:

- Settlement Agreement Quarterly Report, October– December 2022, presentation
- Quality Assessment Report for Water Quality Monitoring, October–December 2022 (Fourth Quarter)
- Quality Assessment Report for Water Quality Monitoring, October–December 2022: Water Quality Data (Fourth Quarter)
- Arthur R. Marshall Loxahatchee National Wildlife Refuge Total Phosphorus (TP) Compliance Status as of Fourth Quarter 2022
- Provisional Shark River Slough Fourth Quarter 2022 Total Phosphorus (TP) Data Report
- Taylor Slough and Coastal Basins Fourth Quarter 2022 Total Phosphorus (TP) Data Report

Please note that the item below was not provided at the time of the meeting but relates to the agenda item:

- Settlement Agreement Report, Fourth Quarter 2022, October–December 2022

3. **Settlement Agreement Quarterly Report, Final Federal Water Year 2022 Annual Shark River Slough Compliance** – Chelsea Qiu, SFWMD

Final results for SRS TP concentration compliance for the Federal Water Year, which began on October 1, 2021, and ended September 30, 2022, were presented. The LTL was 7.6 ppb, while the TP FWMC was 10.2 ppb. The percent of sampling events greater than 10 ppb during the year was 50.0%, which was greater than the guideline for 40.2%. A discussion of flows and TP FWMCs followed.

Questions, Comments, and Discussion:

There were none.

Associated Online Documents:

- Shark River Slough Final Water Year 2022 Annual Compliance Results, presentation

4. **Water Quality Conditions for Everglades National Park, Water Year 2022 Shark River Slough** – Chelsea Qiu, SFWMD

The WY2022 exceedance was evaluated. This included an (1) evaluation under the Consent Decree for data errors or extraordinary natural phenomena, (2) discussion of system operations and upstream conditions that occurred throughout the year, and (3) identification of the major drivers to compliance results. There was missing data that influenced the result but did not affect compliance. No extraordinary natural phenomena were observed. System operations resulted in 80% of days being in Zone B of the operation schedule. The low L-67A stage at the S-333 structure headwater (S333HW) and high TP concentration pattern in Water Conservation Area (WCA) 3A have repeated every year and are consistent. During the low stage period (S333HW below 9.2 feet or ft), downstream TP concentrations at S333 and S333N were often higher than TP FWMC of the eastern upstream inflow (S150, S9s, S11s, and S340 on the Miami River canal). The flows from WCA-3A to SRS below the S333HW stage of 9.2 ft were examined. WY2022, WY2021, and WY2019 are the recent exceedance years. These three water years had the highest flows under low stage among the past 30 years. More flow under low stage, combined with high TP concentration, contributed more weight to the annual FWMC calculation, resulting in a higher annual FWMC TP. When comparing the two numbers (FWMC TP and LTL) for annual assessment, those years with lower LTL and higher FWMC are likely to have an exceedance. Statistically significant trends in 5-year rolling averages show (1) increasing trends in all 5-year rolling averages ending in WY2011 through WY2022 in SRS inflow, SRS flow when S333HW ≤ 9.2 ft, and net flow from WCA-3A when S333HW ≤ 9.2 ft; (2) decreasing trend in LTL in 5-year rolling averages ending in WY2011 through WY2022 because of flow increase; and (3) increasing trend in FWMC in 5-year rolling averages ending in WY2018 through WY2022, with an inflection in the WY2014–WY2018 5-year average and reversing the decreasing trend because of flow increase under low stage. Over the past 5 years, the 5-year average flow has consistently remained above 1 million acre-feet. The LTL has decreased from 8.9 to 8.4 ppb, a reduction of 0.5 ppb, while the FWMC TP has increased by 0.4 ppb. Therefore, increasing flows due to operational changes have altered the compliance dynamics, resulting in two opposing trends—lower LTL and higher FWMC TP. This change has contributed to consistent exceedances. The evaluation determined that the major driver of the WY2022 exceedance was localized effects of periods of higher TP concentrations under low stage conditions and more flow during these periods.

Questions, Comments, and Discussion:

Donatto Surratt asked what data was used to substitute the five missing S333 samples? Chelsea answered that there were five missing samples for S333 due to an unsafe platform. Two sensitivity tests were conducted using data from S333N for the first test and data from S12D for the second test.

Donatto Surratt, referring to Slide 9, asked if the inflow of TP from eastern structures between the peaks had been evaluated for any possible transport during high flow periods as sediments can be transported and deposited and then resuspended during high flow periods? Donatto said it is premature to conclude there is no upstream influences without this

evaluation. Stuart Van Horn replied that it is a good question. You have two systems going on: (1) when stages are higher, more water (low phosphorus) is moving into the marsh even from the eastern inflows and (2) when stages are lower, water is not pushing into the marsh; it stays in the canal system. We are seeing different patterns of high inflows and high concentrations over the years. When the S333 Working Group gets into Phase II, maybe we should expand the geographic area of possible transport.

Donatto Surratt, referring to Slide 13, asked what statistical test was applied to the five-year trend analysis? Nenad Iricanin, SFWMD, replied that the Kendall tau test was used.

Dilip Shinde, NPS, referring to Slide 13, asked how the Net Flow to SRS from WCA-3A was determined. Chelsea replied S12s+S333s–S334. S334 flows go to the South Dade Conveyance System not SRS. WCA-3A means S-12s + S333s with no flows from S356.

Bill Walker, referring to Slide 11, said we should expect a lag between inflow and outflow concentrations as water flows through the marsh and is taken up by vegetation so a longer timeframe going back further should be used for the analysis. He also said he had a hard time believing there was no correlation between the inflow and outflow concentrations. Some inflow structures are more directly correlated to S333 outflow, especially S9.

Lori Miller, referring to Slide 8, asked Chelsea to show where flows going into L67A come from. Chelsea showed how flows can come from S150, the S11s, and S9 via the border canal and marsh, from S340 via the Miami River, then mix with an inner lake in front of S151 (the center of SRS before the L67A levee was built). The canals within WCA-3A interact with the marsh. Lori asked for verification that no upstream inflow had been taken out of the L-67A flow analysis. Chelsea replied she was correct.

Donatto Surratt, referring to Slide 13, asked if Chelsea was now considering flows into WCA-3A to include those from the L67A Canal. Stuart Van Horn, SFWMD, replied that the term of net outflow from WCA-3A to SRS is consistent with what the Consent Decree used. It excludes flow passing through the eastern L-29 Canal (subtracting S334 flow). Donatto replied that we should make it clear that this transport route via the canal exists. Stuart said SFWMD will improve the slide in the future to aid in interpretation.

Dan Scheidt, USEPA, referring to Slide 14, is curious about the statement that the upstream influence continues not to be a factor. Does it include western inflows? Julianne LaRock responded that it was determined in the past that the western inflows were not really part of the Consent Decree, so SFWMD sticks with the eastern inflows for the compliance calculation. Dan Scheidt also asked if anyone had looked at the influence of the S140 and S190 structures on S12A and S12B. Stuart Van Horn replied Chapter 3 of the South Florida Environmental Report (SFER) contains a discussion of WCA-3A and the TP Rule. Concentrations are low, 5 to 6 ppb, in the water column of the southern part of WCA-3A. As discussed previously at TOC meetings and in other forums including the Special Master hearings, the TP in the inflows to WCA-3A needs to deal with the state water quality standard but seems to be decoupled with having an impact on the concentrations at the S12s or the compliance regime when looking at cause and effect for these elevated TP FWMCs. Both the Special Master and Judge Moreno have said that the TP FWMCs in WCA-3A do not seem to have an impact on Shark River Slough. S12A TP was high under the low stage, but when flowing under high stage, TP decreased to a very low level, around 6 ppb. So, we've not seen any influence from those structures operating under those low TP concentrations that impacted the compliance regime in calculating the TP FWMC.

Dan Scheidt asked how long SFWMD has been making the statement "upstream continues not to be a factor"? Stuart Van Horn replied that Chelsea has been doing these presentations for at least 2 years. SFWMD has been looking at these upstream concentrations in this fashion for a bit longer through two lenses: (1) upstream from the stormwater treatment areas (STAs) and (2) upstream from within WCA-3A. Looking at the eastern individual structures, with S150 receiving water from STA-3/4 and S11s receiving partial water from STA-2 via S7, the spatial and temporal average is better than STA outflow, well below WQBEL levels. That is why we are making a statement that it continues not to be or appear to be a factor. Dan Scheidt clarified that he wanted to know if the upstream flows continue not to be a factor since when, 2018? Ed Smith, FDEP, replied that FDEP looked back over 20 years of data when analyzing both structures and marsh stations, and every site except one had a decreasing trend.

Dan Scheidt asked if SFWMD was assuming mean STA outflow concentrations are not a factor in inflow concentrations to SRS? Stuart responded SFWMD is not seeing STA outflow concentrations high enough to affect SRS concentrations. However, taking into account comments made by Donatto and others, there may be additional information that should be looked at for the analysis.

Juli mentioned that the 2016 memo from the Principals is posted containing the following three questions. (1) Has the TOC sufficiently evaluated the available information related to the exceedance to determine there were no data errors? (2) Has the TOC determined there is substantial evidence the exceedance was due to extraordinary natural phenomena? (3) Do we want to proceed with recommending additional remedies to our principals in accordance with Appendix C? All TOC Representatives agree data error(s) or natural phenomena can be ruled out but they want to see Donatto's presentation before voting on the third question.

Associated Online Documents:

- Water Quality Conditions for Shark River Slough, Water Year 2022, presentation

5. Central Everglades Planning Project (CEPP) Operational Plan – Ken Bradshaw, PhD, USACE

Ken presented an overview of the CEPP Operational Plan, CEPP project scope, National Environmental Policy Act (NEPA), and project schedule to update the TOC on development of the first increment of the CEPP Operational Plan, which will consider Tamiami Trail Next Steps Phase 2, increased water budget from the Lake Okeechobee System Operation Manual (LOSOM), lessons learned from the Combined Operational Plan (COP), S12 operations, WCA-2A and WCA-3A regulation schedule updates, improvements to the Tamiami Trial Flow Formula, and CERP and non/CERP features constructed by 2027. The plan is in the pre-formulation phase. The final environmental impact statement, water control plan, and preliminary project operational manual are expected by March 2026.

Questions, Comments, and Discussion:

Dan Crawford elaborated on some of the other CEPP efforts and projects underway.

Associated Online Documents:

- Central Everglades Planning Project Operational Plan, presentation

John Barkett (Special Master) asked about the status of the S333 Working Group studies mentioned during past meetings that were expected to be ready by June 2023. Stuart Van Horn said the working group is meeting often and working diligently to try to stay on schedule and have

recommendations for solutions and additional studies to present to the Principals by September 2023. Mr. Barkett stated he is feeling a sense of urgency because of the SRS exceedances for three years (2019, 2021, and 2022). He is not planning on advising the court of the exceedances at this time, so the TOC has time to recommend remedies. Julia Lomonico, SFWMD, said the working group is scheduled to present their findings to the Principals on September 28, 2023.

6. Public Comment

There were no public comments.

7. TOC Closing Business – Julianne LaRock, SFWMD

The TOC will host the next quarterly meeting on Thursday, September 21, 2023.

The TOC will host the following quarterly meeting on Tuesday, December 5, 2023.

Julianne adjourned the meeting.

Agency acronym definitions:
DOI – Department of Interior
ENP – Everglades National Park
FDEP – Florida Department of Environmental Protection
LNWR – Arthur M. Marshall Loxahatchee National Wildlife Refuge
NPS – National Park Service
SFWMD – South Florida Water Management District
USACE – United States Army Corps of Engineers
USEPA – United States Environmental Protection Agency