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

July 19, 2016

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

TOC Representatives:

Julianne LaRock, TOC Chair, SFWMD	Mark Shafer, USACE
John Barkett, Special Master *(by phone)*	Donatto Surratt, ENP
Frank Powell, FDEP	Yongshan Wan, Refuge

Note: *This meeting was recorded by a court reporter and copies are available for purchase. For more information, contact Florida Court Reporting (561-689-0999). Handouts and presentations are available on the TOC website (www.sfwmd.gov/toc). A video of the meeting is available online at http://sfwmd.iqm2.com/Citizens/Media.aspx.*

10:00 a.m. **1. TOC Opening Business** – Julianne LaRock, SFWMD

1A. Welcome, Announcements, and Identification of Phone Participants

Julianne LaRock called the meeting to order and welcomed attendees. Phone participants introduced themselves. Julianne introduced Yongshan Wan as the new TOC representative for the Refuge (replacing Lori Miller), and Jim Nutt as the District's lead counsel for TOC (replacing Kirk Burns). Yongshan notified the TOC that Refuge staff will no longer accompany District staff for water quality sampling at the 14 compliance stations in the Refuge.

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

Julianne LaRock reviewed the agenda and the list of files recently posted on the TOC website or sent by email. There were no requests for changes to the agenda.

Donatto Surratt noted that final data for the Refuge's enhanced water quality monitoring network program, covering June 2005 to April 2016, has been posted on the TOC website. John Barkett requested that Donatto give an interpretation of the data to give it more context relative to improvement noted over the years, and Donatto agreed to give a presentation about it at a future TOC meeting.

1C. Approval of Meeting Summary for April 26, 2016

Julianne LaRock explained that changes to the draft meeting summary that had been requested by Donatto Surratt prior to the meeting were made. The TOC did not request any further changes, and approved finalizing the draft meeting summary for April 26, 2016.

Associated Online Documents:

- Final Agenda for July 19, 2016
- Draft Meeting Summary for April 26, 2016
- Final Meeting Summary for April 26, 2016

10:15 a.m. **2. First Quarter 2016 Settlement Agreement Report** – Jonathan Madden, SFWMD

Jonathan Madden presented results for the first quarter of 2016 (January–March), including provisional results for tracking Shark River Slough.

Refuge geometric mean TP values for January–March 2016 were below the long-term level. The high water emergency order and associated operations occurred during this period, resulting in significant volumes of water moving through the system. Provisional Refuge calculations for April–June 2016 also have geometric mean TP values below the long-term level.

Interim flow-weighted mean TP values for Shark River Slough for the 12-month periods ending in January, February, and March 2016, were below the long-term limits for each period, and the percent of events greater than 10 ppb was below the guideline for the three periods.

Flow-weighted mean TP values for Taylor Slough and coastal basins for the 12-month periods ending in January, February, and March 2016, were below the long-term limit for each period, and there were no sampling events greater than 10 ppb during these periods.

Regarding Shark River Slough, Jonathan explained that the S-355A and S-355B structures are gated, gravity spillways that were open and allowed to flow March 1-11 as part of the temporary deviations. Because the L29 canal stage was high, not much flow could be realized, so the gates were closed and the District installed temporary pumps adjacent to S-355B. There are no data for the period when the gates were open; there are only data for when the temporary pumps were in use (5.8 kac-ft at the S-355B temporary pump, as noted in the presentation on slide 6). There was no interval in which the pumps were flowing and the gates were open at the same time. Donatto asked how to distinguish between the S-355B temporary pumps and the S-355B structure. Jonathan suggested that perhaps the Appendix A sub-team would discuss this.

Mark Shafer pointed out that the provisional Shark River Slough data shown in the quarterly presentations are not included in the quarterly report, and recognized that the TOC had previously determined that this was an appropriate response to address the delay in receiving final flow data. Mark requested that the provisional Shark River Slough information that appears in the presentation be added to the summary table (slide 2 in the presentation) in future quarterly Settlement Agreement Reports, along with the note that it is provisional, as a convenience for TOC representatives and the public. Donatto motioned to agree, and the majority of TOC representatives confirmed. Julianne LaRock expressed the importance of making it clear that the data are provisional. Donatto requested that the types of visuals (graphs, etc.) used in the presentation be included in the reports as well.

Frank Powell asked whether flow data from the 2006 S-356 pump test data were incorporated into that water year. Jonathan indicated that the data were incorporated and that the test was for a short time with relatively low flows; water quality data were not collected coincident with the other structures; and there was only one water quality data point associated with flow.

TOC Action Item #1: Provisional Shark River Slough information will be added to future quarterly Settlement Agreement reports in some manner, along with a clear note that the data are provisional.

Associated Online Documents:

- Settlement Agreement Report, First Quarter 2016 (January–March 2016)
- Settlement Agreement Report, First Quarter 2016 Presentation
- Quality Assessment Report for Water Quality Monitoring, First Quarter 2016
- Refuge TP Compliance Table, Updated through First Quarter 2016
- Provisional Shark River Slough TP Tracking Report, First Quarter 2016

10:45 a.m. **3. Status of Long-term Trends for Refuge and Everglades National Park TP Compliance** – Stuart Van Horn, SFWMD

Stuart Van Horn gave a presentation on long-term trends for the Refuge and Everglades National Park, consolidating information that had previously been presented in a piecemeal manner. Stuart gave an overview of the consent decree language describing long-term goals for each area, status and trends, and a summary of the observations. Since the interim level became effective in February 1999, and despite seasonal fluctuations in interior marsh concentrations and occasional excursions, there has been an overall decreasing trend in TP concentrations in the Refuge. This has been observed using linear regression, moving average, and Seasonal Kendall Trend analyses. The observed average TP concentration for the past 5 years is 7.2 ppb, which is about 3.2 ppb better than the average computed compliance long-term level and approximately equivalent to the long-term goal of 7 ppb for the Refuge. Three of the last 60 months resulted in a 14-station geometric mean TP concentration above the long-term level, with an average deviation of 0.4 ppb above the level. The remaining 53 months within the compliance stage range averaged 3.4 ppb better (below) than the long-term level.

In Everglades National Park, the 5-year average TP inflow concentration is 8.8 ppb for Shark River Slough and 5.5 ppb for Taylor Slough and coastal basins, as compared to their respective goals of 8 ppb and 6 ppb. Despite three exceedances since 2007, the 5-year average TP concentration into Shark River Slough is 1.2 ppb better than the average TP compliance long-term limit based on the annual flow volumes. Observed TP concentrations to Taylor Slough and coastal basins have been better than the fixed long-term limit of 11 ppb and also averaging better than the goal of 6 ppb. The variability in the annual long-term limit based on flow volumes to Shark River Slough means that the expectation for each period's inflows is not 8 ppb. The primary goal of achieving the long-term limits of the Settlement Agreement is to meet the Outstanding Florida Waters water quality criteria at the structures and immediately downstream in Everglades National Park. Marsh sites in and surrounding the Park and upstream (WCA-3) of Shark River Slough are much lower than 8 ppb, and marsh sites in Taylor Slough and the coastal basins are much lower than 6 ppb. The 5-year average geometric mean concentration of the marsh sites in Everglades National Park is 4.1 ppb, and marsh sites in the southern WCA-3A are very low as well. Complete details are included in the presentation linked to below. A few typos in the presentation slides were indicated by Stuart Van Horn (note: the presentation will be corrected and reposted to the website).

John Barkett asked if there has been an observed vegetative response to the trends. Stuart explained that there has been a noticeable slowing in the advance of cattail in many areas, but it is not clear whether the cattail-dominated areas will decrease. John Barkett suggested that vegetative response be tracked in addition to the TP levels, and Stuart said that would have to be considered by the scientists.

Yongshan Wan asked whether the laboratory's margin of error is factored into the compliance analysis. Stuart noted that the lab's margin of error for TP is +/- 2 ppb and the method detection limit (MDL) is 2 ppb. This has been debated in the past, but a margin of error is not provided as part of the compliance calculation. Donatto indicated that variability such as this was taken into account within the calculation for the long-term limit, which was developed when the MDL was twice as high.

Joffre Castro (ENP) noted that TP levels in canal water are much higher than what is observed in the marsh and suggested that it would be good to show in the presentation.

Dan Scheidt (EPA) asked if there were any values below the former MDL of 4 ppb, and suggested revising the figure on slide 3 to have a common floor of 4 ppb as a type of "sensitivity analysis". Jonathan Madden indicated that there were no values below 4 ppb during this period. Stuart said they would go back and clarify.

Dan Scheidt (EPA) asked how the initial 5-year period (1999-2004) was selected. Stuart explained that it was chosen to concentrate on when the Settlement Agreement started with the interim limits, which was in January 1999.

Dan Scheidt (EPA) asked whether the District has looked into why the downward trend in the Refuge occurred (e.g., as a result of STA or BMP performance). Stuart indicated that the District has not looked at it in detail and that there are different mechanisms in play, including more STA acreage, the correlation between TP levels and stage regimes within the Refuge, and flow dynamics in the Refuge.

Dan Scheidt (EPA) asked why the TP level is higher in some marsh stations (such as CA36) in WCA-3. Stuart explained that this is not indicative of upstream inflows, but other potential factors related to the proximity of the stations to the Miami Canal. There was further discussion about CA324, whether trends have been looked at for individual stations, and whether improvement is being observed. Paul Julian (FDEP) explained that the area around CA324 is relatively dry, often leading to higher TP values. Station CA36 is near a break in the levee so TP levels tend to be higher because of the influence of canal water.

Frank Powell (FDEP) suggested that a complete package should undergo a full evaluation, including STA and BMP performance, and perhaps differing periods of record (such as 10-year or longer), as well as trend analyses on specific marsh stations in WCA-3 and the Refuge, including those that transitioned from impacted to unimpacted.

Julianne asked how long a period is needed to constitute "long-term" Settlement Agreement compliance, and questioned whether it is in the purview of the TOC to look at long-term periods, noting that the TOC ordinarily looks at monthly and annual compliance. Donatto said that he feels it is appropriate to look at long-term periods and that this has been captured and reflected in recent TOC resolutions. Frank Powell expressed that he also feels it is appropriate to look at both annual and long-term periods, but that he would want to define the intent of the long-term limit. There was no majority consensus among TOC members to elevate the issue to agency principals for guidance. Mark Shafer indicated that he sees the value in periodic trend reporting in relation to evaluating how to deal with exceedances.

Donatto asked that a legend be added to the Refuge Marsh Sites graph on slide 3 to clarify what the straight colored lines represent. Stuart explained that the blue line is a simple linear regression and the dashed red line represents a Kendall Tau analysis.

Associated Online Documents:

- Status of Long-Term Trends for Refuge and Everglades National Park TP Compliance Presentation

12:00 p.m. **4. Update on Vertical Datum Establishment and Use at USGS Gauges 1-7, 1-8C, and 1-9 within WCA-1** – Jeffrey Navaille, USACE

Jeffrey Navaille noted that communication between USGS, USACE, and SFWMD staff is occurring, and progress being made, but a definitive solution has not yet been reached. Julianne LaRock requested an update at the next TOC meeting, and Jeffrey agreed.

TOC Action Item #2: At the next TOC meeting, Jeffrey Navaille will give an update on progress towards a solution to the vertical datum establishment and use at USGS gauges 1-7, 1-8C, and 1-9 within WCA-1.

12:01 p.m. **5. Update on Appendix A Sub-team** – Paul Julian, FDEP

Paul Julian reported that the team met on July 12 and reviewed the S-356 proof of concept modeling output. State parties are reviewing this now. The sub-team is considering meeting again at the end of September, depending on staff availability and whether a meeting is needed at that time.

Mark Shafer asked if there is a plan to prepare a method for inclusion of S-356 in the Settlement Agreement report for water year 2016 (October 2015-September 2016). Paul indicated this is uncertain and Stuart discussed the challenges of trying to incorporate S-356, noting that it is not straightforward how to apply the compliance equations consistent with precedents of monitoring and use of that data in calculations for both the flow weighted mean calculation and the limits. In the past, very specific monitoring and calculation regimes have been required for compliance calculations, and complications are now compounded by the introduction of S-356. There is uncertainty as to how the structure will operate in the future (e.g., the question of whether S-356 returns Everglades National Park seepage water or seepage coming in from WCA-3B) or how to monitor it.

There was further discussion among TOC representatives about S-356, including the question of how long the TOC can delay including it, what information is collected that can make the process faster, the possibility of using interim methodologies in the meantime, and reimplementation of increments of the pump tests. Yongshan Wan reminded that the overall goal is to protect the ecosystem, so the condition of water at the pump station should be taken into account when considering further pump testing. Julianne requested that the sub-team place formal items on the agenda for future TOC meetings where they will be raising questions such as this so that everyone can come prepared to talk about it. Stuart recommended that TOC representatives discuss with their principals due to the complexities associated with S-356 and the resulting delays.

12:18 p.m. **6. Public Comments**

Drew Martin (representing self) expressed appreciation for the work of the TOC and that things seem to be moving in the right direction with TP levels, but wished there was a more noticeable response in return to native vegetation. Drew questioned whether reduced flow being sent through is a factor in why TP levels are lower, and expressed the importance of

being able to continue meeting the criteria at higher flow volumes so that more water can be sent to the estuaries and other natural areas where it is needed.

Melodie Naja (Everglades Foundation) asked whether a link to the Emergency Order High Water After Action Report could be added to the TOC website and whether there has been any study to investigate intrusions from STA-1W outflow concentrations to the Refuge.

Melodie Naja also asked about the water quality impact of increased flows to Taylor Slough as a result of projects recently approved by the District's Governing Board.

Drew Martin requested that people on the TOC email distribution list be added to the permit application notification.

12:30 p.m. **7. TOC Closing Business** – Julianne LaRock, SFWMD

The next quarterly meeting is scheduled for October 18.

Julianne LaRock adjourned the meeting.