

**Technical Oversight Committee Meeting**  
 April 23, 2002, B-1 Storch Room  
 South Florida Water Management District Headquarters  
 3301 Gun Club Road  
 West Palm Beach, Florida 33414

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**Attendees:**

Garth Redfield, TOC Chair, SFWMD  
 Carlos Adoriso, SFWMD  
 Nick Aumen, NPS/ENP  
 Bill Baxter, USACE  
 Tim Bechtel, SFWMD  
 Bahram Charkhian, SFWMD  
 Linda Davis, SFWMD  
 Naomi Duerr, SFWMD  
 Tony Federico, MFL, Consultant to  
 Agriculture  
 Gary Goforth, SFWMD  
 Larry Grosser, SFWMD  
 Delia Ivanhoff, SFWMD  
 Jennifer Jorge, SFWMD  
 Bob Kadlec, Consultant to DOI  
 Don Kent, Community Watershed Fund,  
 Consultant to Agriculture  
 Julia Lacy, SFWMD  
 Paul McCormick, NPS/ENP  
 Paul McGinnes, SFWMD  
 Damon Meiers, SFWMD

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Cheol Mo, SFWMD  
 Frank Nearhoof, FDEP  
 Vincent Peluso, SFWMD  
 Barbara Powell, SFWMD  
 Pete Rawlik, SFWMD  
 Keith Rizzard, SFWMD  
 Dan Scheidt, EPA , Atlanta  
 Lisa Smith, SFWMD  
 Ron Smola, USDA/NRCS  
 David Struve, SFWMD  
 Kim Taplin, USACE  
 Sharon Trost, SFWMD  
 Carrie L. Trutwin, SFWMD  
 Mike Waldon, USFWS  
 Bill Walker, DOI, Consultant  
 Jeff Ward, representing Sugar Cane  
 Growers Cooperative (SCGC)  
 Ken Weaver, FDEP  
 Mike Zimmerman, NPS/ENP

**Introductory Comments – Garth Redfield, TOC Chair, SFWMD**

Garth Redfield opened the meeting at 10:05 a.m. He noted that the minutes from the January TOC meeting, as well as the agenda for today's (April 23) meeting, had been distributed to members and interested parties. He said there had been no changes to the agenda (Attached) and asked if anyone in attendance had any suggested changes. Nick Aumen requested that the topic of the online monitoring of total phosphorus be added to the agenda; Redfield agreed to add the topic. Mike Waldon pointed out that on page four of the January 29 minutes, where the text reads Mike "Zimmerman" it should, instead, read Mike "Waldon." The change was made and Redfield declared the January 29 TOC meeting minutes final.

**Agenda Item #1.** Tim Bechtel presented the Water Quality Conditions (WQC) Report (Attachment 1; Quality Assessment is Attachment 2). Bechtel reported that in October 2001 the geometric mean exceeded the interim limit for the Refuge, while noting that this is the first exceedance in a 12-month period. A discussion ensued, during which Frank Nearhoof noted that the TOC had discussed the issue of model uncertainties at the previous TOC meeting in January and had previously concluded that there is a possibility the mathematical model for calculating limits might not be as robust as it needs to be. Nearhoof asked whether anyone from the TOC had followed up on a suggestion made at the previous meeting to have Bill Walker take a closer look at the data. Redfield said no follow-up had yet been done. Nearhoof suggested that if the TOC

is planning to look at data, then it should look at data from both the Refuge and the Shark River Slough (SRS). Redfield agreed.

Bechtel asked whether the October 2001 exceedance was or was not considered a true exceedance of the interim limit. Redfield said that technically it is not an exceedance. Bill Walker asked whether the District had looked at other constituents, such as sodium, calcium or conductivity. Bechtel said he had not looked at other constituents but that he had looked at which sites had been potentially affected by water moving into the interior marsh. Walker and Bechtel discussed the value of looking at chloride levels at the various sites. Mike Waldon expressed a concern that since STA-1W has come online and STA-1E is coming online in the near future, the flow patterns will change and phosphorus concentrations could increase in the interior due to the different position of the inflows. Also, he said that instead of water moving around the rim canal and going out the S-10s, it may tend to go into the interior with the closing of the S-6 pump.

Nick Aumen pointed out that the TOC is always in a position of having insufficient information with which to try and explain patterns in monitoring data. He noted that the District has developed the first cut of a hydrology model of the Refuge that should help. It shows considerable intrusion of water into the interior at very high stages. He would like to have a water quality model linked to the existing model to provide a better understanding of water quality patterns. Redfield asked if there was any further discussion regarding the Refuge. There was none.

Bechtel presented water quality data for Shark River Slough (SRS), also included in the quarterly conditions report. He noted that the interim limit would become effective in 18 months and that the SRS had exceeded the limit in the last two annual data cycles. Bechtel noted that total phosphorus (TP) was coming via the S-12s and S-333 Water Conservation Area 3A. Nearhoof pointed out that, going from east to west at those structures, the water quality generally improves (water from S-12A is likely to display lower TP values than that from structures located further east – S-333 and S-12D). Water management has recently been changed to preferentially move through the eastern-most structures. The likely outcome of that, he said, is that combined TP numbers are going to tend to be somewhat higher, as seen in the last two years. Redfield suggested that Bechtel look into whether the data do indeed currently reflect that pattern. Bechtel pointed out that the dataset from each separate structure would need to be examined.

Bill Walker noted that most flow went through S-333, but that the whole point of tracking the combined inflows to the Everglades National Park (ENP) was so water could be moved through different directions and the equation would not have to be re-derived. He said he had trouble with the idea of dismissing information solely because of a change in operation. Redfield said no one was suggesting the information be dismissed; rather, the TOC simply wants to understand why the data are above the interim limit. Nearhoof agreed that no one was suggesting that the data pattern should be dismissed, but there is a potential, based on what is known about the structures, that the way they are being operated could be influencing water quality. Bill Walker insisted that the point of tracking water quality is to track what is going into ENP, and the notion that anyone can figure out why is unrealistic because there is not a perfect predictive model that shows how the WCAs behave with respect to water, let alone phosphorus. Redfield sharply disagreed with the notion that the TOC should not explore data patterns of TP anywhere in the EPA. The District, as the agency responsible for compliance, has to know if there are structures delivering unusually high values so water management can be tuned to minimize inputs.

Bechtel went on to present water quality data for Taylor Slough. He noted that when the District first started operating pump station S 332-D, both the U.S. Army Corps of Engineers (USACE) and the District were collecting data and that the two datasets were very different. The data differences have since been largely resolved, and the District, which is now doing all the monitoring in the area, would like to drop the dual analysis and go with operating structures 174, 332-D, and 18-C.

Nearhoof provided an update on the status of construction activity in the C-111 area. There was discussion as to whether there might be a need to reconsider monitoring regimes once all the construction is completed. There was extended discussion regarding the flow of water into the ENP from various structures. Kim Taplin pointed out that the construction began in March and it should be completed by the end of June. Nick Aumen noted that there had been a request to change the sampling frequency from weekly to biweekly. He inquired as to the status of that request, since that would presumably be one of the data sources. Nearhoof noted that the DEP had concurred with the recommended changes and had authorized that by letter. Aumen said it was not clear from the letter exactly what the changes were regarding sampling in detention areas. He asked Nearhoof for clarification. Nearhoof suggested that Aumen speak directly to Ken Weaver about it. Weaver suggested that Temperince Bennett be included in the discussion.

Redfield asked for clarification on the appropriate sampling regime to be used to track inflows into Taylor Slough. He asked the TOC to provide guidance in choosing stations that are most representative of what is entering ENP. There was continued discussion regarding exactly what various locations represent. Nearhoof said the decision to use the 332-D was the right decision because where there is a detention pond, it is going to substantially improve water quality. Aumen disagreed, insisting that the data do not show that. Kadlec said that in the absence of information, the conservative thing to do would be to measure what goes through the 332-B pump. Nearhoof said he did not agree with that. Bechtel insisted that the best place to do the monitoring is at the S-332D and the adjacent spillway, S-174. Redfield noted an affirmative nodding of heads from a majority of TOC attendees.

Redfield asked Bechtel to verbally confirm his plan for reporting back to the TOC the next quarter. Bechtel said he would get the 332-B data from Weaver. Redfield asked what Bechtel was planning regarding reporting the two sets of data. Bechtel recommended that the District drop 175 and 332 because they do not represent what is flowing into Taylor Slough. There was continued discussion regarding flow into the slough. Redfield again asked which data the TOC would like the District to use. Bechtel said he would like to report discharges through S-334 and S-332D, and then add the S-332B data and start analyzing that for comparison. There was further discussion regarding flow into Taylor Slough. Redfield suggested that the conservative thing to do would be to report all the data in the next report. Bechtel concurred.

Aumen requested that the U.S. Army Corps of Engineers (USACE) do a presentation at a future TOC meeting on C-111 construction and the projected impact on flows. Redfield suggested that three months was probably not enough time to prepare a presentation. Kim Taplin said that because the USACE is in the process of drafting a monitoring plan and hopes to get baseline data before the pumps come on, there would not be time to prepare a full presentation for the next TOC meeting. Lisa Smith noted that the operating plan that will be used when the structures come online is part of the Interim Operating Plan. All monitoring plans are being developed by an interagency facilitation team comprised of the ENP, the District, the USACE and the U.S. Fish and Wildlife Service (USFWS). Aumen suggested it would be helpful to talk not only about the monitoring regime for water quality, but also about the operating protocol for

structures. Nearhoof pointed out that the FDEP, as the entity that issues the operating permit, was missing from the list of members of the interagency facilitative team. He suggested the agency be included because it does not make any sense to leave the FDEP out of the loop. Ron Smola asked that the U.S. Department of Agricultural (USDA) also be included as a member of the interagency team. Redfield noted there was agreement to have an agenda item to discuss flows and monitoring in Taylor Slough/C-111 at the next TOC meeting. He asked the USACE to take the lead on that presentation.

Aumen suggested that the labs that will be involved in the monitoring should also participate in the Round Robin to avoid problems with detection limits, performance issues, etc. Bill Walker suggested that the question for the TOC is whether to continue to have the District do all the monitoring. The District would have to pick up S-332B and C as part of its monitoring network, and this might be simpler than trying to juggle information between different labs. Lisa Smith noted that SFWMD will assume responsibility for monitoring once construction in C-111 is completed and the structures are conveyed to the District. She added that the USACE is also cost-sharing the monitoring with the District, picking up 50 percent of the cost of the monitoring, which she called "a very significant change." Cheol Mo asked Smith if plans would include the flow monitoring and all water quality monitoring. Smith said they would include surface water, groundwater, ecological, and flow monitoring.

**Agenda Item #2.** Going back to the Environmental Conditions Update, Aumen expressed concern about increasing concentrations in Shark River Slough. He said the ENP/Department of the Interior (DOI) would like to conduct an analysis and present a report at the next TOC meeting. Redfield said the TOC wanted to understand where the high numbers are coming from. Aumen suggested it would be nice to have input as to how the operation has changed. Redfield asked Walker if a partnership between him and District data people would be helpful. Walker said it would be. Redfield suggested that Walker and Bechtel get together and decide on an approach. Bob Kadlec noted that that would focus only on ENP inflow. Redfield suggested that Nearhoof provide some input since he had raised the issue of variability in the Refuge. Nearhoof said he was unsure whether the violations were reflective of water quality issues, per se, or of natural conditions. He suggested that if they are the result of natural conditions, then they shouldn't continue to be reported as violations. Bill Walker pointed out that he had not seen an analysis of that and that it would be worth looking at the data and correlations between concentrations and stages because maybe there is something to it. Redfield agreed that the TOC should at least get the data on the table. He noted that the TOC had agreed, then, to look at data from both the Refuge and Shark River Slough and would put that down as an agenda item for the next TOC meeting. Nearhoof asked that the FDEP, specifically Ken Weaver, be kept in the loop on the analysis and its progress. Redfield asked if there were any other comments on Item 1. There were none.

**Agenda Item #3.** Bahram Charkian and Pete Rawlik presented a report accompanying a request to terminate a water quality sampling at ????. Rawlik noted that at the last TOC meeting he had requested that sampling at G-211 be dropped, and that today's presentation was a recap of that. After recapping, he reiterated that the District would like to drop the G-211 site because there was no longer a need to monitor there. Sharon Trost concurred, saying she was in favor of dropping the site. Charkian noted that he had spoken with the District's CERP project manager, who had also recommended that sampling at the site be discontinued. Nearhoof asked if the site was

under any kind of permit. TOC members agreed that the site was not under permit, and Nearhoof agreed that the site should be dropped.

**Agenda Item #4.** Redfield gave a presentation on monitoring of atmospheric deposition of phosphorus (Attachment 3). District Technical Publication #360 (Attachment 4) containing a detailed summary of papers on phosphorus deposition was made available to the TOC. After summarizing the scientific basis for the atmospheric deposition, he indicated that the District was recommending discontinuation of atmospheric deposition monitoring for phosphorus. The bottom line is that the certainty of deposition rates cannot be improved by further monitoring with bucket collectors, and the variability and uncertainty about what is actually being measured are too high to provide interpretable data. He also noted that a proposed research program, developed with District funding, to improve deposition estimates had been presented to the TOC earlier and had received a lukewarm response from the committee. No agency offered assistance, financial or in-kind, to implement the expensive study, and as a result the study was not funded.

Charkian presented information on the current collection of precipitation chemistry (Attachment 5). Naomi Duerr asked Charkian to explain how he had arrived at the conclusion that there was no legal requirement to monitor atmospheric deposition of phosphorus. Charkian replied that after discussing the issue with District project managers and end-users, he had concluded that there was no legal requirement to monitor. Tony Federico said he had seen this issue come up repeatedly, and he expressed the concern that in the past the District had been reluctant to put a monitoring requirement into a permit, because once it is there it is difficult to change. Federico insisted that there is a long-term benefit to continued monitoring of atmospheric deposition of phosphorus.

Sharon Trost recalled some concerns with deposition monitoring dating back to the 1990s. There were serious problems with the data because of the attractiveness of the monitoring sites to birds, and consequently the sites were not yielding good quality data. Federico suggested that there are ways to address contamination issues and ways to screen data. There was continued discussion regarding the value of further, long-term monitoring of the sites, whether doing so would yield any relevant or useful data, and whether cost would be a limiting factor. Naomi Duerr asked TOC attendees if they would be amenable to hearing a proposal of an alternative method of collecting this information, including a reduction in the number of sites being monitored. Keith Rizzardi asked whether the District should be required to continue to spend money on monitoring programs that do not work. Aumen suggested that, before the next TOC meeting, members should give some thought to and come up with a compromise. Bob Kadlec suggested that perhaps there should have been internal clients for the data. Redfield suggested that all five agencies do some background thinking and come to the next TOC meeting with information on anything they had learned from the data that he has not already provided. He also agreed it would be beneficial if some of the internal clients that were mentioned attended the next TOC meeting.

**Additional Agenda Item on Monitoring Program Changes.** After a lunch break, Chad Kennedy gave a presentation on monitoring in Manatee Bay and Long Sound (Attachment 6), requesting that monitoring in the area be reduced from 27 sites to four. (Note: this item was presented as a courtesy to the TOC because the subject is not included in monitoring under the Consent Decree). There was discussion regarding what the subsequent impacts of such a reduction in monitoring might be, and whether the data could be obtained from other sources. Aumen suggested that the five agencies

represented at the TOC needed to do a better job of coordinating the various water quality monitoring efforts. Redfield asked if the Florida Bay/Long Sound issue needed to be a follow-up item for the next TOC meeting. Duerr concurred, indicating that additional information needed to be provided on monitoring programs in the area.

**Agenda Item #5.** Frank Nearhoof presented Item 5, announcing that the DEP was in the process of reviewing a three-volume technical support document that was now going through rule hearings. Redfield asked for questions or comments. Dan Scheidt asked when the document would be final. Nearhoof said that the DEP views the document as final at this time. However, he acknowledged the possibility that the document could become “undrafted” during the course of discussion and review. Redfield asked if there was any further comment. There was none.

**Agenda Item #6.** Jennifer Jorge presented an update on the District’s Advanced Treatment Technology projects, emphasizing STA-based approaches (Attachment 7). After the presentation, Bob Kadlec commented regarding the use of bypass as part of the evaluation methodology using the 10-year period of record. He noted that the Settlement Agreement (SA) does not talk about 10- and 20-percent STA bypass, and he asked for clarification. Goforth suggested that Kadlec recommend a resolution. Goforth also suggested that the matter should be an issue for future TOC consideration.

Kadlec registered a complaint that data users were being forced to wait for data to be published in the 2003 Everglades Consolidated Report. Redfield pointed out that while data users would have to wait for the 2003 ECR to be published to get the compiled data, drafts would be available prior to that at the ECR public review workshop in September. Bill Walker suggested that the TOC begin by clarifying which data need to be summarized, and then have the data reported routinely in a spreadsheet that everyone can access. Redfield suggested that that should come out of the STA design group. He asked if there were any additional questions or comments on Item 6. There were none.

**Agenda Item #7.** Redfield requested that anyone should notify him with any changes to the 2003 ECR. Bob Kadlec registered a complaint that the ECR appears to have superseded more timely, topical reports and that it does not contain specific data in which some are interested. He pointed out that work in the field does not show up until the next year. Redfield acknowledged the problem and said the demands for technical analyses greatly exceed the District’s ability to provide them. He encouraged TOC members to deal with their senior managers to obtain additional staff and resources to conduct technical analyses.

**Additional Agenda Item on Continuous TP Analysis in the Field.** Nick Aumen presented information on a continuous analyzer for total phosphorus manufactured by an Australian company (data from system is in Attachment 8). There was discussion about the product, and Kadlec suggested that the manufacturer should find a way to participate in the next Round Robin. Redfield suggested that a presentation of more detailed information about the analyzer be added as an agenda item for the next TOC meeting. He asked if there was any further public comment. There was none.

**Agenda Item #8.** Kim Taplin announced that a public meeting regarding the IOP for C-111 and modified water deliveries was being noted in the Public Register and would take place May 23. Redfield asked if there were any other comments. Don Kent requested more information on Bill Walker’s DMSTA model. Walker noted that there was

a Website devoted to the topic. Redfield suggested that something on the topic be added to the ECR.

Redfield thanked the TOC for their attendance and participation and adjourned the meeting.