

MEMORANDUM

TO: Everglades Technical Oversight Committee

From: Glenn R. Schuster, P.E., USACE

Date: Oct 4, 2001

RE: Data Quality and Laboratory Cooperation

In January of 2000 Planning Division, USAED Jacksonville was given the task of collecting and analyzing water samples in the C-111 basin. At the time no special instructions were given to COE staff concerning Q/A requirements for total phosphorus data and it was assumed that the existing Q/A protocols would be sufficient. Approximately 6 months later it was brought to the attention of the Corps that the data, although completely acceptable under the then current Q/A protocols was not considered of high enough quality to satisfy the needs of FDEP and SFWMD in executing their responsibilities. After considerable discussion between COE, FDEP and SFWMD staffs it was concluded that the data below 20 ppb generated between January and June 2000 should be flagged and qualified. Although this data meets all Q/A and contractual requirements in place at the time it does not meet the very high standards incorporated in the Draft FDEP Guidelines for Selecting Laboratories for Everglades Phosphorus Measurements. Following the standard laboratory practice used by FDEP and SFWMD of flagging all data below PQL as estimated, data below 16 ppb will be flagged with a "J" (estimated value below PQL). Data between 16 and 20 ppb will be flagged with a "?*" (Meets Q/A standards in place at time of analysis but does not meet higher standards of the Draft Guidelines for Selecting Laboratories for Everglades Phosphorus Measurements). Changes in laboratory practices including upgrading Q/A protocols to the new FDEP Everglades standards were instituted which have eliminated the data quality issues and have brought the three labs into close agreement on TP analysis.

Close cooperation between laboratories performing phosphorus analysis in support of the Everglades restoration is essential. Data generated by different labs must be compatible, of high quality and supported by comprehensive QA/QC programs. In addition the methods used to collect and analyze samples must be such that variation from lab to lab is kept to a minimum. With the idea of reducing the potential for data variation between labs the follow actions were taken;

- (1) Coordination between labs to standardize laboratory quality assurance procedures and laboratory analytic procedures.
- (2) Initiation of a series of meetings between laboratory Q/A personal, chemists and managers to ensure open and free communication between labs as a means of promoting cooperation and resolution of data discrepancies.

To further enhance inter-agency cooperation and maintenance of the highest possible standards of data quality the following recommendations are offered;

- (1)-Contract with an outside agency such as USEPA or USGS to conduct the total phosphorus Round Robin. Incorporate known values, particularly at low levels, as an integral part of the Round Robin. Blind known samples must be included with all splits as a check on lab QA/QC procedures.
- (2)-Develop/coordinate standard field sampling procedures. Develop a standard operating procedure to be used by all agencies conducting field sampling in the Everglades. Recommend using the SFWMD field-sampling manual as the basis for further discussion of this issue. The Corps currently follows the guidance of the SFWMD field-sampling manual.
- (3)-Establish a clearing house to track and coordinate all sampling/monitoring activities in the Everglades. There are numerous agencies collecting water, soil and tissue samples in the Everglades with little or no effort being made to ensure data compatibility, reduce overlap or combine efforts to reduce costs.
- (4)-Continue coordination of a database format compatible with end users systems. Microsoft Access is currently used for the Corps data. The Corps database format has been coordinated with FDEP and SFWMD. Access is a PC product that is readily convertible to a Unix compatible format. Eventually the databases will all have to be in a Unix compatible format due to the large number of data points that will be in the system.
- (5)-Recommend SFWMD or other agency, co-locate three auto samplers at three sites currently being monitored with autosamplers by the Corps, at similar intake depths/locations and on the same program. Recommended period for the study to be 6 months to 1 year. This would help determine if there are variability/reliability issues with the use of autosamplers. The Corps currently has a limited study underway to compare grab samples taken at the same time, location and depth that the autosamplers are currently sampling. We expect results from this study in 6-8 months.

These recommendations and comments are offered as a basis for further discussion. A joint effort to bring laboratory and field procedures into alignment to the maximum extent possible will benefit all participants in the effort to restore the Everglades.