

Status Report
Modeling Technical Review Group (MTRG)
Savannah Harbor Expansion Project
September 29, 1999

A meeting was held on September 29, 1999 in accordance with the MTRG's recommendation to review the status of the execution of the Field Data Collection Task prior to completion of the field work. The goals of the meeting were as follows:

- Review data collected to date.
- Discussion on water quality analyses..
- Develop recommendations on data collection effort.

This status report provides a summary of the comments received, discussion of the analytical laboratory issues and recommendations made by the MTRG. The MTRG meeting also included a visual presentation of in-stream water quality data collected to date and discussion of preliminary chloride data, dredging history since August 23rd meeting, Hurricane Floyd response, and alternatives for distribution of data to MTRG.

The following persons provided input and/or participated in the MTRG discussions:

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Savannah Laboratory Data

- The Harbor Committee presented some concerns, which had been identified with Savannah Laboratories' data under a separate, but simultaneous Wastewater Characterization Study (WCS) being conducted under the USACE's Savannah Harbor Ecosystem Restoration Project.
- ATM noted a similar discrepancy, as had been identified by the WCS above, on the dissolved versus the total values for the laboratory data reported on the in-stream sampling.
- It had been agreed for both the Field Data Collection Task and the WCS that all samples being analyzed for dissolved components would be filtered upon receipt by Savannah Laboratories and preserved until the analysis would be performed. It was recently discovered that the samples had not been filtered upon receipt, but were filtered when the analysis was performed, which may have affected the values reported.
- There was an issue of testing methods used by the laboratory for TKN, Total Phosphorus, and Orthophosphate and concern that there could potentially be an interference issue with saline waters and samples containing high dissolved solids.

- It was noted that the dissolved parameters are not one of the 8 state variables that the WASP water quality modeling code calculates and are not critical to the modeling effort. However, they are important to quantifying the particulate fractions in the river.
- It was also noted that the analytical phosphorus results are not going to effect the DO cycle in any significant manner in this system, but the nitrogen series is more important.
- Because Hurricane Floyd was approaching Savannah on Tuesday, September 14 during week 7 of the data collection, the final week of sampling was delayed for both the In-Stream Field Data Collection and the Wastewater Characterization Study. After the MTRG identified potential discrepancies in the laboratory data, alternatives were discussed to coordinate the laboratory QA/QC and study plans for the last week of sampling.

Analytical Sampling Recommendations

- The final week of sampling should occur during October 4-8, 1999 for the In-Stream Field Data Collection and the Wastewater Characterization Study.
- TKN, Total Phosphorus, and Orthophosphate should be tested by 2 different methods to determine if interference issues are occurring.
- The In-Stream Field Sampling should occur at the normal 32 instrument stations on high and low slack tide plus Clyo for a total of 65 samples. All 65 samples should be tested for the dissolved and conventional parameters list by Analytical Environmental Services in Atlanta, Georgia. 10 samples should be split and sent to Savannah Labs in Savannah, Georgia and to Columbia Analytical Services in Jacksonville, Florida to run the conventional parameter list.
- The MTRG agreed to provide review and input via email for an "In-Stream Sampling Plan" to be developed by ATM for the final week of sampling to occur October 4-8, 1999.

Field Data Collection Schedule

- The dive crew will begin pulling instruments after October 6 and end on October 10, 1999. The MTRG recommended that the instruments collecting water quality data remain in place until Wednesday of the final week sampling period.
- All instrumentation will be pulled by October 10, 1999 including chloride and bromide instruments, water quality instruments, and weather stations.
- Based on a review of the overall conditions under which the data has been collected, the MTRG agreed that there is no need for the data collection effort to be extended.

Dredging History Since Aug 23rd – Last MTRG Meeting

- The USACE added another dredging contract downstream of Fort Jackson. One dredge will move into the Sediment Basin and work for at least the next month. The second dredge will work from 26+400 to 15+000 for 3 weeks and 15+000 to 0+000 for the following 3 weeks.
- Because of the USACE maintenance dredging, the GPA-21 bottom-mounted station (near the Corps Depot) had to be removed before the maintenance dredging began on 8/26.
- The GPA-02 bottom station (near the bottom reach of the channel) was also removed on 8/31 due to maintenance dredging, and as of the meeting date the maintenance dredging was still occurring.

Chloride and Bromide Data

- The MTRG discussed the status of the chloride data collected to date.
- Since the Clyo flows have ranged from 5,400 to 8,800 cfs between August 1 and September 27, 1999, chloride levels had been measured under a variety of tidal and fresh flow conditions.
- Since ATM has not seen a chloride and bromide response to freshwater flow and/or conductivity at the I-95 Bridge, the lower boundary of the chloride sub-model may need to be moved to the Houlihan Bridge

where there is a salinity signal. There is a long-term USGS station at this location along with ATM's GPA-09 bottom and surface instruments.

- USGS conductivity data at Houlihan Bridge and the I-95 Bridge from 1994 to present can also be analyzed for salinity changes.
- ATM should make a request to the City of Savannah for the chloride data at the raw water intake for July through October 1999.

Hurricane Floyd Response

- On September 13, 1999, 5 YSI water quality instruments (out of 55 instruments) were pulled from GPA-26 surface and bottom, GPA-02 surface, and GPA-04 surface and bottom. The ADCP at GPA-04 was also pulled. All of these instruments were tied to a navigational buoy in the channel and the concern was that they would be damaged by the hurricane.
- The field crew was evacuated on Tuesday morning, September 14, 1999 and returned Monday, September 20, 1999 to replace the instruments removed and continue the data collection effort.

Data Distribution to the MTRG

- MTRG members expressed interest in recommending the format for the presentation of specific types of data and for specific periods.
- The MTRG also discussed available software, which could be used with the data for graphical comparisons and simple statistics.