

**Texas AgriLife Research
Texas Water Resources Institute**

**Modeling Support for Buck Creek Watershed Protection Plan Development
FY 08 CWA 319(h)
TSSWCB Project No. 08-05**

Quarter no. 4 From 07/01/2009 Through 09/30/2009.

I. Abstract

Work conducted during this quarter of the project has focused on completing Load Duration Curves (LDCs) and developing the draft SELECT model outputs. The LDCs were presented to stakeholders at the public meeting held July 21st in Wellington. Draft SELECT outputs have been developed and will be presented to the stakeholders at the upcoming meeting scheduled for October 27th. Work has also been initiated on the final report for the project that describes inputs and outputs for LDC development and SELECT modeling as well as discusses the implications of the results.

II. Overall Progress and Results by Task

TASK 1: Project Coordination and Administration

Subtask 1.1: TWRI will coordinate project efforts with all project partners, as well as with the Watershed Protection Plan Development for Buck Creek project (TSSWCB project 06-11). TTVN meetings or teleconferences will be held, as appropriate, with project partners to discuss project activities, project schedule, lines of responsibility, communication needs, and other requirements.

The following actions have been completed during this reporting period:

- a. A TTVN meeting was held on August 5th to discuss project activities and upcoming schedules.

75% Complete

Subtask 1.2: TWRI will prepare electronic quarterly progress reports (QPRs) that document all activities performed within a quarter and shall be submitted to the TSSWCB no later than the 15th of January, April, July and October. All QPRs will be provided to project partners in this project and project 06-11, including Research, Texas AgriLife Extension Service, Red River Authority, and the Hall-Childress, Salt Fork, and Donley County SWCDs and placed on the project website maintained by TWRI.

The following actions have been completed during this reporting period:

- a. Submitted Year 1, Quarter 4 report to TSSWCB on 10.09.09.

50% Complete

Subtask 1.3: *TWRI will submit appropriate Reimbursement Forms.*

The following actions have been completed during this reporting period:

- a. As of August 31, 2009 approximately 8% of project funding had been expended. The remaining project balance is \$38,947.

8% Complete

TASK 2: Modeling of Bacteria Loads using the LDC/SELECT approach

Subtask 2.1: *BAEN will conduct SELECT modeling analysis efforts to estimate bacteria loadings across the Buck Creek and identify critical bacterial loading areas within the watershed.*

The following actions have been completed during this reporting period:

- a. Stakeholder verified data layers for use in the SELECT model at the July 21st meeting.
- b. Draft SELECT outputs were developed this quarter and will be presented at the October 27th stakeholder meeting. Modifications will be made as needed.

90% Complete

Subtask 2.2: *BAEN will examine temporal and spatial trends in observed water quality (bacteria) by developing LDCs for one or more representative index sites which accurately characterize data across all flow regimes. The data will be characterized with a trend line based on statistical evaluation of bacteria loads in each flow regime. The LDCs will be used to differentiate between sources of bacteria as related to different flow conditions and to establish load reduction scenarios from the relationships between the observed data and the allowable loads expressed in the curve.*

The following actions have been completed during this reporting period:

- a. LDCs have been completed for each sampling site. Results were presented at the last stakeholder meeting.
- b. This task is now complete.

100% Complete

Subtask 2.3: *Research will incorporate the results of the modeling analysis into the Buck Creek WPP that will be developed in TSSWCB project 06-11.*

The following actions have been completed during this reporting period:

- a. Work has been initiated to incorporate LDC and SELECT results into the WPP.

20% Complete

Subtask 2.4: BAEN and Research, with assistance from TWRI, will develop the technical report for the project for submission to TSSWCB, EPA, and project partners.

The following actions have been completed during this reporting period:

- a. Work has begun on the development of the LDC and SELECT final report.

20% Complete

TASK 3: Quality Assurance Project Plan Development

Subtask 3.1: TWRI will develop a QAPP that will detail project goals and objectives relating to water quality monitoring activities; identify the data needed to fulfill those objectives; list field and laboratory methods; describe procedures and schedules to be followed; and specify a data management structure and the quality assurance protocols.

The following actions have been completed during this reporting period:

- a. The QAPP has been developed and approved by EPA.

100% Complete

Subtask 3.2: Provide annual revisions to the QAPP and amendments, as necessary, to the TSSWCB and EPA.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

50% Complete

III. Related Issues/Current Problems and Favorable or Unusual Developments

IV. Projected Work for Next Quarter

The following will be accomplished during the coming quarter:

- SELECT model outputs will be presented to stakeholders at the next stakeholder meeting. Modifications will be made if needed based on stakeholder comments.
- Work will continue on the development of the final LDC and SELECT report.
- Work will continue on the incorporation of LDC and SELECT results into the WPP.