

**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.  3  From  04/01/2009  Through  06/30/2009 .

**I. Abstract**

Work conducted during this quarter of the project has focused on developing the historic and initial load duration curves for each sampling site. These curves will be presented at the next stakeholder meeting scheduled for July 21<sup>st</sup> in Wellington. Work has also begun on setting up the SELECT model. All required data layers have been collected and integrated into the model; this information will be verified by landowners at the upcoming stakeholder meeting. Once verified, an initial SELECT analysis will be conducted for the watershed.

**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. No activity to report at this time.

**25% 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 15<sup>th</sup> 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 3 report to TSSWCB on 7.15.09.

**37% Complete**

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

The following actions have been completed during this reporting period:

- a. As of May 31, 2009 less than 5% of project funding had been expended. The remaining project balance is \$40,409.

**5% 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. All appropriate data layers were obtained during the quarter in preparation for SELECT model analysis. Stakeholder verification will be obtained prior to the initial modeling runs which will commence following the July 21<sup>st</sup> meeting.

**20% 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. Initial LDCs have been developed for all sampling sites. These curves will be presented at the upcoming stakeholder meeting on July 21<sup>st</sup>. Input received their will help in refining these curves as will additional water quality and flow data.

**45% 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. No activity to report at this time.

**0% 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. No activity to report at this time.

**0% 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. A QAPP revision to include the development of LDCs for nitrate loads was submitted to EPA; approval is pending.

**25% 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:

- Data analysis and modeling will continue during the next quarter.
- Information presentations will be given at the next scheduled stakeholder meeting about LDCs and the SELECT model. Feedback from landowners and stakeholders will be sought as inputs to the SELECT model at this meeting as well.