

**Pecos River Basin Assessment Program
FY07 CWA Section 319(h)
TSSWCB Project No. 07-06**

Quarter no. 1 From 10/01/07 Through 12/31/07

I. Abstract

Work conducted during this first quarter has focused on many of the preliminary activities associated with the project. Cedar Creek, Segment 1209G, was chosen from the list of potential streams as the local watershed to be sampled during this demonstration project. Sampling sites have been chosen at 4 of the 5 public road crossings, the watershed has been toured and landowner contacts are being made in preparation for sampling activities. The QAPP that covers sampling is currently being drafted and must be approved before sampling activities can commence. We anticipate that this QAPP will be completed late in the 2nd or early in the 3rd quarter.

II. Overall Progress and Results by Task

TASK 1: Project Coordination and Administration

Subtask 1.1: TWRI will prepare electronic quarterly reports for submission to the TSSWCB. All progress reports will be provided to all Project Participants.

The following actions have been completed during this reporting period:

- a. The year 1, quarter 1 report was completed and sent to the TSSWCB on January 15, 2008.

8% Complete

Subtask 1.2: TWRI will coordinate quarterly meetings (in person or TTVN) as appropriate with project participants 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. Several meetings have been held during the last quarter to discuss project activities and progress being made.

10% Complete

Subtask 1.3: TWRI will attend meetings with the TSSWCB project manager and other meetings, as needed, to review project status, deliverables, etc.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter

0% Complete

Subtask 1.4: TWRI will submit appropriate Reimbursement Forms.

The following actions have been completed during this reporting period:

- a. Thus far, no project funds have been expended; therefore, no reimbursement forms have been submitted.

0% Complete

Subtask 1.5: TWRI will develop (Months 1-3), host and maintain (Months 3-36) an internet website for the dissemination of information.

The following actions have been completed during this reporting period:

- a. Work on the project website is underway. Initial website content has been sent to the webmaster.

70% Complete

Subtask 1.6: TWRI and Texas AgriLife Extension will work together to develop the Final report.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Subtask 1.7: TWRI and Extension will work together to develop publications, brochures and reports that can will be disseminated for educational purposes.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Task 2: Development of Quality Assurance Project Plan

Subtask 2.1: 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. Work on the QAPP is progressing. We anticipate that the QAPP will be complete during the next quarter.

35% Complete

Subtask 2.2: 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.

0% Complete

Task 3: Conducting sanitary surveys to identify potential *E. coli* contributing sources in the impaired watershed

Subtask 3.1: Choose a suitable watershed from the provided list of bacteria impaired stream segments

The following actions have been completed during this reporting period:

- a. This subtask is completed. Cedar Creek, Segment 1209G, in the Brazos River basin was selected for this study. This subtask is now complete.

100% Complete

Subtask 3.2: Travel to the selected watershed and conduct a renaissance survey of the watershed and sources

The following actions have been completed during this reporting period:

- a. Dr. Karthikeyan and Lucas Gregory traveled to the watershed December 4th to look for possible sampling sites.
- b. The Brazos County Extension Agent, Eric Zimmerman, has been contacted to assist with establishing landowner relationships.

70% Complete

*Subtask 3.3: Conduct a thorough sanitary survey to identify various wildlife sources that contribute *E. coli* loads during winter. This survey will be conducted by a wildlife expert.*

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Subtask 3.4: Conduct a thorough sanitary survey to identify various domestic livestock and poultry sources and waste streams that contribute E. coli loads during winter. This survey will be conducted by an extension county agent and/or an animal-production agriculture expert.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Subtask 3.5: Verify and update wildlife survey with inputs from stakeholders and Texas Parks and Wildlife personnel and domestic animal survey with inputs from stakeholders, ranchers, and extension county agents.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Subtask 3.6: Conduct a thorough sanitary survey to identify various wildlife sources that contribute E. coli loads during summer. This survey will be conducted by a wildlife expert.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Subtask 3.7: Conduct a thorough sanitary survey to identify various domestic livestock and poultry sources and waste streams that contribute E. coli loads during summer. This survey will be conducted by an extension county agent and/or an animal-production agriculture expert.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Subtask 3.8: Verify and update wildlife survey with inputs from stakeholders and Texas Parks and Wildlife personnel and domestic animal survey with inputs from stakeholders, ranchers, and county Extension agents.

The following actions have been completed during this reporting period:

- a. No activity to report at this time.

0% Complete

Task 4: Conducting demonstration experiments to characterize and quantify E. coli loads from identified sources

Subtask 4.1: Collect feces samples of relevant and dominant identified sources (five maximum) and samples of waste streams (five maximum) identified in Task 4 during winter.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 4.2: Extract feces samples and waste streams for E. coli collected during winter.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 4.3: Analyze samples collected during winter for E. coli using EPA's approved enumeration technique

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 4.4: Calculate the E. coli load resulting from all identified sources collected during winter

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 4.5: Collect feces samples of relevant and dominant identified sources (five maximum) and samples of waste streams (five maximum) identified in Task 3 during summer.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 4.6: Extract feces samples and waste streams for E. coli collected during summer.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 4.7: Analyze samples collected during summer for E. coli using EPA's approved enumeration technique

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 4.8: Calculate the E. coli load resulting from all identified sources collected during summer

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Task 5: Monitoring fate (survival, growth, re-growth, and die-off) of E. coli under different environmental conditions

Subtask 5.1: Prepare collected samples in Task 4.5 for this monitoring study.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 5.2: Measure growth kinetics of E. coli in different sources under varying environmental conditions

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 5.3: Measure survival of E. coli in different sources under varying environmental conditions

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 5.4: Measure re-growth of E. coli in different sources under optimum conditions

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Task 6: Monitoring concentration of *E. coli* in the instrumented stream as a result of rainfall and runoff events

Subtask 6.1: Collect water samples during summer for two rainfall-runoff events.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 6.2: Collect water samples during winter for two rainfall-runoff events.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

Subtask 6.3: Collect stream bed sediments after each water sample collection periods.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

*Subtask 6.4: Analyze water and sediment for *E. coli* concentrations*

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

*Subtask 6.5: Measure growth kinetics, survival, and re-growth *E. coli* in stream bed sediments under different environment conditions*

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

*Subtask 6.6: Mechanically disturb stream bed sediments four times; twice each during summer and winter, collect grab water samples, and analyze the samples for *E. coli**

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

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

- a. Preliminary activities are being carried out at this point.
- b. No actual sampling will take place until the QAPP has been approved by TSSWCB and EPA.

IV. Projected Work for Next Quarter

- Work will continue on the QAPP for the project during the next quarter.
- Work by the County Extension Agent will also continue during the next quarter to establish relationships with local landowners that will be willing to allow sampling on their properties.