

**Improving Water Quality by Developing, Implementing and
Field Testing Innovative Methods
FY 03 CWA 319(h)
TSSWCB Agreement No. 03-10**

Quarter no. 5 From 10/01/04 Through 12/31/04.

I. Abstract

The project QAPP was approved by EPA during the fifth quarter, which authorized project personnel to begin technology implementation and data collection. Subsequently, Saqib Mukhtar and Ron Jones (TAES Research Associate) met with TIAER Laboratory personnel to finalize proper procedures for sample collection, submission and tracking. Despite the extended preparation time from the QAPP delay, technology providers were not ready to implement technologies during this quarter. Both technologies project implementation within the first months of 2005. Finally due to year one delays, a proposed schedule is listed in Section IV of the report for year two activities.

II. Overall Progress and Results by Task

TASK 1: Demonstration and Evaluation of New Technologies

Subtask 1.1: Identification of potential technology providers. TCE, TWRI, TFB, dairy industry representatives, EPA Region 6, TSSWCB, TCEQ, BRA, NRCS, and TAES will identify and select promising technologies represented by willing technology providers. (month 1 thru 3)

The following actions have been completed during this reporting period:

- a. "Electrocoagulation Technology" proposed by Ecoloclean Industries, Inc. (Huntsville, TX) was selected to be evaluated in year one.
- b. "Phosphorus Removal by Chemical Precipitation and Geotube[®] Dewatering" proposed by Miratech Division (Commerce, GA) was selected to be evaluated in year one.
- c. Once both year one technologies are evaluated, the RFP will be released for technology selection and implementation in year two.

33% Complete

Subtask 1.2: Identification of dairy cooperators in the North Bosque watershed area that use a flush system and lagoons to remove, store, treat, and land-apply effluent (manure and process-generated wastewater). TCE, TSSWCB and TFB will identify dairy operations willing to participate in these demonstrations. (month 1 thru 3)

The following actions have been completed during this reporting period:

- a. "Ecoloclean" will be implemented on OSVE Dairy (proprietor – Mr. Bert Velson) located within the Bosque Watershed.
- b. "Geotube" will be implemented on Triple X Dairy (proprietor – Mr. Wayne Moermen) located within the Leon River Watershed.
- c. Once year two technologies are selected, the technology providers and project personnel will work to identify dairy cooperators for each technology.

33% Complete

Subtask 1.3: On-site installation and start-up of the six pilot-scale technologies to be demonstrated. Technology providers will carry out the task of equipment transport, on-site installation, set-up, and start-up. With permission from the cooperating dairy owner/operator, the technology provider will prepare the site to install and operate the system for demonstration. (First installation by August 2003, last installation 6 months before the end of the 3-year project)

The following actions have been completed during this reporting period:

- a. TCE contacted both “Ecoloclean” and “Geotube” technology providers on 11-5-04 regarding approval of QAPP and ensuing implementation of technologies on selected dairies. At time of contact, “Ecoloclean” predicted their technology would be set up at the OSVE Dairy before the end of the year and “Geotube” projected project startup on the Triple X Dairy in early 2005.
- b. “Ecoloclean” technology provider notified TCE on 12-27-04 that their technology unit was unavailable and projected a three week delay in implementation.
- c. Both technologies should be implemented and operating by the end of February 2005.

0% Complete

Subtask 1.4: QAPP preparation and field data collection and analysis.

TCE will prepare the DQO and QAPP (August 2003 to August 2004)

The following actions have been completed during this reporting period:

- a. EPA approved the project QAPP on 10-29-04.

100% Complete

TCE will collect samples from raw and treated effluent and resulting sludge. One of the evaluation tasks will be to analyze the sludge or by-product remaining after raw material treatment for P stability (August 2003 to May 2006)

The following actions have been completed during this reporting period:

- a. TWRI and TCE set up the agreement with TIAER and sent the purchase order to the TIAER Laboratory on 11-3-04 to perform sample analysis on the two technologies to be implemented for year one.
- b. TCE hired Mr. Ron Jones as a Research Associate on 11-15-04. Mr. Jones will assist in protocol development, actual sample collection and data analysis before, during and after each technology demonstration. Further, he will be the primary contact for the dairy producers, technology providers and TIAER and is responsible for on-site demonstrations and technology performance reports.
- c. Saqib Mukhtar and Ron Jones met with TIAER on 11-23-04 to discuss Laboratory requirements for sample submission, collection, analysis, etc.
- d. Sampling equipment was purchased and sent to the TIAER Laboratory for sample collection preparation (acid washing).

5% Complete

Subtask 1.5: Develop reports and outreach education materials. TCE in cooperation with TWRI will produce educational brochures and publications on effectiveness of this innovative technology. Quarterly and final reports will be prepared and submitted in a timely manner.

The following actions have been completed during this reporting period:

- a. Submitted Year 2, quarter 1 report to TSSWCB on 1-15-05

50% Complete

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

Because selected technology providers were unable to begin work upon QAPP approval, the project has once again been delayed. Both technologies project installation in the first months of 2005. While data collection from these technologies will produce valid results, TCE project personnel regret the numerous delays encountered during the first year. With that said, TCE anticipates year two work to be conducted on a more timely basis. Given the delay, however, TCE proposes a project schedule for year two work in the section IV of the report.

IV. Projected Work for Next Quarter

The following will be accomplished during the coming quarter:

- a. By the end of February 2005: Begin to implement selected technologies at both dairies, begin data collection (once technologies reach optimum operation efficiency) and begin sample analysis.
- b. By mid-March 2005: release RFP for year two technology selection process.
- c. By mid-March 2005: revise project scope of work to include additional or new technologies currently not listed in contract scope of work.
- d. By the end of April 2005: distribute proposals received for year 2 work to advisory committee members for review and beginning of selection process.
- e. Between March and May 2005 (depending on technology provider's ability to optimize system): coordinate site visits to allow advisory committee members to view year one technologies and review preliminary data. Also review and rank proposals received to select year two technologies.
- f. By fall 2005: implement selected technologies for year two and begin data collection once technologies reach optimum operation efficiency.