

# **Development and Implementation of an Environmental Training Program for Manure and Compost Haulers/Applicators in the Texas High Plains**

Texas Cattle Feeders Association  
Texas AgriLife Extension Service  
Texas AgriLife Research  
West Texas A&M University  
FY09 CWA Section 319(h)

## **Quarterly Report Number 1**

Covering work accomplishments during January through March, 2010  
April 13, 2010

### **TASK 1: Project Administration**

**Subtask 1.1** TCFA/ AgriLife Extension will prepare electronic quarterly progress reports (QPRs) for submission to the TSSWCB. QPRs shall document all activities performed within a quarter and shall be submitted by the 15th of January, April, July and October. QPRs shall be distributed to all project partners. (Start Date: Month 1; Completion Date: Month 36)

- **Procedures have been implemented to collect project information and work accomplished for each task and subtask.**
- **First quarterly report – submitted to TSSWCB on April 13, 2010.**

**16% Complete – On-going**

**Subtask 1.2** TCFA will perform accounting functions for project funds and will submit appropriate Reimbursement Forms to TSSWCB at least quarterly. (Start Date: Month 1; Completion Date: Month 36)

- **Subcontract in place between TSSWCB and TCFA.**
- **Subcontract in place between TCFA and Texas AgriLife Extension Service/Texas AgriLife Research.**
- **TCFA controller has been briefed on the project and will be the lead person for tracking, billing and fiscal reporting.**

**5% Complete – On-going**

**Subtask 1.3** TCFA/ AgriLife Extension will attend and participate in public meetings, such as watershed stakeholder meetings, Clean Rivers Program meetings, and Soil and Water Conservation District (SWCD) meetings, in order to communicate project goals, activities and accomplishments to affected parties. (Start Date: Month 1; Completion Date: Month 36)

- **The date for the first Project Advisory Group meeting and project kick-off has been set for June 16, 2010 at the Texas A&M Research and Extension Center in Amarillo.**

**2% Complete – On-going**

**Subtask 1.4** The TCFA/ AgriLife Extension will host coordination meetings through video conferencing or other means with TSSWCB, project partners, and any subcontractors, as appropriate, at least quarterly in the first year to discuss project activities, project schedule, communication needs, deliverables and other requirements. Meetings will be held as needed in the second and third year of the project. (Start Date: Month 1; Completion Date: Month 36)

- **TCFA staff met on March 18, 2010 for a review and orientation on the project goals, tasks, subtasks and identification of staff involvement, as appropriate.**
- **A project management team (TSSWCB/TCFA/Texas AgriLife Extension Service/Texas AgriLife Research/West Texas A&M University) planning meeting was held by conference call on April 6, 2010.**

**2% Complete – On-going**

**Subtask 1.5** TCFA/ AgriLife Extension will develop and disseminate project informational materials, including, but not limited to, flyers, brochures, letters, news releases, and other appropriate promotional publications. As appropriate, TCFA will include information about the project in the TCFA e-Newsletter, in TCFA membership mailings, at the TCFA Annual Convention, and at the Annual Meeting of Texas SWCD Directors (TSSWCB must approve all announcements, letters and publications prior to distribution). (Start Date: Month 1; Completion Date: Month 36)

- **A news release is being drafted to coincide with the Project Advisory Group/project kick-off meeting scheduled for June 16, 2010.**

**0% Complete – On-going**

**Subtask 1.6** AgriLife Extension will develop (months 1-3), host and maintain (months 4-36) an internet webpage for the dissemination of project information. (Start Date: Month 1; Completion Date: Month 36)

- **The development of an initial project webpage was discussed during the project planning conference call on April 6. This will be put in place in the first part of the next quarter.**

**0% Complete – On-going**

**Subtask 1.7** AgriLife Extension will hire a Project Manager to coordinate and manage the work of project partners and subcontractors, to facilitate the project advisory group, to assist with the environmental knowledge assessment, to lead the development of the environmental training curriculum, to lead program delivery, and to assist with BMP effectiveness monitoring. (Start Date: Month 1; Completion Date: Month 4)

- **The position description for the project manager was approved by Texas A&M University administration in early April 2010. The position announcement has been posted and applications are being received. Intentions are to hire a project manager during April 2010.**

**15% Complete – On-going**

**Subtask 1.8** TCFA, in collaboration with project partners, will develop and submit a Final Report at the culmination of the project. This final report will document project performance related to each project goal and measure of success. A draft of this final report will be submitted to TSSWCB for review prior to completing the document. (Start Date: Month 34; Completion Date: Month 36)

**0% Complete – On-going**

## **TASK 2: Quality Assurance**

**Subtask 2.1** AgriLife Extension / AgriLife Research will develop a QAPP for activities in Task 9 consistent with EPA Requirements for Quality Assurance Project Plans (QA/R-5) and the TSSWCB Environmental Data Quality Management Plan.

All monitoring procedures and methods prescribed in the QAPP shall be consistent with the guidelines detailed in the TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, Sediment, and Tissue (RG-415) and Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data (RG-416). (Start Date: Month 1; Completion Date: Month 6)

- **A project QAPP is under development. The QAPP will include provisions consistent with other recently developed QAPPs for monitoring, sample collection and laboratory analysis.**
- **QAPP completion is planned during the first part of the next quarter.**

**2% Complete – On-going**

**Subtask 2.2** AgriLife Extension / AgriLife Research will submit revisions and necessary amendments to the QAPP as needed. (Start Date: Month 7; Completion Date: Month 36)

**0% Complete – On-going**

### **TASK 3: Environmental Knowledge Assessment**

**Subtask 3.1** AgriLife Extension will prepare a survey instrument, as appropriate, to assess the current level of environmental understanding and employee training offered by manure/compost haulers. (Start Date: Month 1; Completion Date: Month 5)

**0% Complete – On-going**

**Subtask 3.2** AgriLife Extension will update existing lists of manure/compost haulers in the Texas High Plains and conduct a pre-survey by mail, phone or in person (if needed) with haulers. (Start Date: Month 4; Completion Date: Month 9)

- **An existing list of custom manure/compost haulers/applicators developed by TCFA and Texas AgriLife Extension Service as part of past projects is being reviewed and updated.**

**2% Complete – On-going**

**Subtask 3.3** AgriLife Extension will establish current state-of-knowledge by haulers for environmental management and training through compilation of pre-survey results and development of an interpretive summary. (Start Date: Month 9; Completion Date: Month 11)

**0% Complete – On-going**

**Subtask 3.4** AgriLife Extension will conduct a post-survey of manure/compost haulers to assess adoption and implementation of BMPs and employee/equipment operator training programs. (Start Date: Month 32; Completion Date: Month 36)

**0% Complete – On-going**

### **TASK 4: Project Advisory Group**

**Subtask 4.1** TCFA will meet with AgriLife Extension specialists and Extension agents in Potter, Lubbock and Wilbarger counties and USDA-NRCS Zone 1 personnel to brief them on the objectives of the project, to solicit nominations for the advisory group and to identify potential demonstration sites and potential crop producer collaborators. (Start Date: Month 1; Completion Date: Month 3)

- **Email communication with an overview of the demonstration project and Scope of Work was sent to County Extension Agents (CEAs) located in Castro County, Collingsworth County, Deaf Smith County, Gray County, Parmer County, and Wheeler County.**

**1% Complete – On-going**

**Subtask 4.2** TCFA will identify members for the project advisory group. The advisory group will, at a minimum, consist of CAFO operators, manure and compost haulers, livestock industry organizations (i.e., Texas Farm Bureau (TFB), Texas Association of Dairymen (TAD), Texas and Southwestern Cattle Raisers Association (TSCRA), commodity organizations (i.e., Corn Producers Association of Texas, Plains Cotton Growers, Texas Grain Sorghum Producers Board), AgriLife Extension, TSSWCB, SWCDs, Texas Department of Agriculture (TDA), U.S. Department of Agriculture- Natural Resources Conservation Service (USDA-NRCS), Certified Crop Advisors (CCAs) and crop producers, stakeholders of the pilot watersheds (Buck Creek and Sweetwater Creek) and demonstration site cooperators. (Start Date: Month 1; Completion Date: Month 6)

- **A draft list of Project Advisory Group members has been developed and reviewed by the project management team.**
- **The Project Advisory Group list will be finalized during a project management team conference call set for April 26, 2010.**

**50% Complete – On-going**

**Subtask 4.3** TCFA shall host meetings and/or conference calls of the project advisory group at least twice in the first year and annually thereafter. (Start Date: Month 6; Completion Date: Month 36)

- **A meeting date of June 16, 2010 has been set for the first Project Advisory Group.**
- **An announcement of the meeting is planned to be mailed/emailed in mid-May.**

**5% Complete – On-going**

**Subtask 4.4** The project advisory group will discuss and prioritize criteria for selection of demonstration sites and provide input on the evaluation of BMP effectiveness. BMPs for protection of wellheads and sensitive areas, type of manure/compost application equipment and measurements of compaction, nutrient stratification and nutrient availability in no-till vs. conventional tillage, nitrogen mineralization rates, and other demonstration concepts. (Start Date: Month 6; Completion Date: Month 12)

**0% Complete – On-going**

**Subtask 4.5** The project advisory group shall review project objectives, provide input on project activities, provide input into development of an environmental training curriculum for manure/compost haulers, program delivery, and CEU processes. (Start Date: Month 11; Completion Date: Month 16)

**0% Complete – On-going**

## **TASK 5: Manure Spreader Calibration Kits**

**Subtask 5.1** TCFA will identify options for field calibration of manure/compost spreader trucks. Options may include single-pass calibration using the calibration kits to be assembled in Subtask 5.2 and/or calibration using a whole-truck method (scale weights and area to which manure/compost has been applied). (Start Date: Month 4; Completion Date: Month 9)

**0% Complete – On-going**

**Subtask 5.2** TCFA will assemble manure/compost spreader truck calibration kits. Thirty kits to be assembled initially. Distribute one calibration kit to each manure/compost hauling company in Texas High Plains at no charge at public project events. Additional kits will be provided at a nominal charge. (Start Date: Month 9; Completion Date: Month 16)

**0% Complete – On-going**

**Subtask 5.3** AgriLife Extension will verify field-scale technique for whole-truck calibration. This method would serve as a complement to the single-pass calibration kits and would require gross wt., tare wt., effective spreader width and length of spreader travel. (Start Date: Month 5; Completion Date: Month 12)

**0% Complete – On-going**

## **TASK 6: Curriculum Development**

**Subtask 6.1** TCFA/ AgriLife Extension will produce educational materials, pamphlets and video (if appropriate) to provide for concise and accurate descriptions of manure calibration equipment options. Types of materials will be determined by the project advisory group (TSSWCB must approve all educational materials prior to distribution). (Start Date: Month 13; Completion Date: Month 36)

**0% Complete – On-going**

**Subtask 6.2** AgriLife Extension will deploy educational materials at a national scale through the Livestock and Poultry Environmental Learning Center and the Extension Community of Practice ([www.extension.org](http://www.extension.org)). (Start Date: Month 32; Completion Date: Month 36)

**0% Complete – On-going**

**Subtask 6.3** AgriLife Extension will provide a template for field-level feedback from manure and compost haulers to verify implementation of single-pass and whole-truck methods. (Start Date: Month 32; Completion Date: Month 36)

**0% Complete – On-going**

## **TASK 7: Demonstration and Program Delivery**

**Subtask 7.1** Select 3 to 4 demonstration sites based on the recommendations of the advisory group. Factors in selection of demonstration sites may include crop types, soil types, manure vs. compost, application rates, location of water wells, ability to sample down-gradient soils and date of previous manure/compost application, if any. At least 1 demonstration site will be selected within the Buck Creek Watershed and at least 1 demonstration site will be selected within the Sweetwater Creek Watershed. (Start Date: Month 1; Completion Date: Month 9)

- **Initial contact has been made with County Extension Agents in several locations throughout the Texas High Plains to encourage them to begin identifying potential landowners to serve a project collaborators/demonstration sites.**

**5% Complete – On-going**

**Subtask 7.2** Train custom manure hauler owners, equipment operators, certified crop advisors and crop producers on the principles of environmental management for land application of manure. (Start Date: Month 14; Completion Date: Month 36)

**0% Complete – On-going**

**Subtask 7.3** TCFA/ AgriLife Extension will host field days at each demonstration site at least once in Year 2 and once in Year 3. (Start Date: Month 13; Completion Date: Month 36)

**0% Complete – On-going**

**Subtask 7.4** TCFA will organize, in conjunction with all project partners, six seminars/workshops across the Texas High Plains for program delivery in Year 3. (Start Date: Month 13; Completion Date: Month 36)

**0% Complete – On-going**

**Subtask 7.5** TCFA will provide project results to state livestock organizations in Oklahoma, New Mexico, Kansas, Colorado and Nebraska. (Start Date: Month 32; Completion Date: Month 36)

**0% Complete – On-going**

**Subtask 7.6** TCFA will present results of the project to the Property Rights and Environmental Management Committee at a National Cattlemen's Beef Association Annual Convention. (Start Date: Month 29; Completion Date: Month 30)

**0% Complete – On-going**

## **TASK 8: Technical Assistance**

**Subtask 8.1** Utilize group workshops, field days and hands-on demonstration of BMPs and ensure availability of education materials through websites. Notify custom manure haulers of the availability of on-site technical assistance and field training for owners and operators, and encourage implementation of USDA-NRCS conservation practices by landowners through the Environmental Quality Incentives Program (EQIP). (Start Date: Month 8; Completion Date: Month 12)

**0% Complete – On-going**

**Subtask 8.2** AgriLife Extension will establish a system of tracking and providing notifications on the availability of technical and financial assistance (i.e., mail, email, website subscription) to custom manure and compost haulers in the Texas High Plains region. (Start Date: Month 13; Completion Date: Month 36)

**0% Complete – On-going**

**Subtask 8.3** TCFA, with assistance from local SWCDs, USDA-NRCS and the TSSWCB Hale Center Regional Office, will promote the availability of technical assistance and encourage adoption and implementation of USDA- NRCS conservation practices (or best management practices (BMPs)), described in the USDA-NRCS Field Office Technical Guide (FOTG) as effective at mitigating the environmental impact of manure/compost application.

TCFA, with assistance from local SWCDs and the TSSWCB Hale Center Regional Office, will promote the availability of technical assistance and encourage the development and implementation of TSSWCB-certified Water Quality Management Plans (WQMPs). A WQMP is a site-specific plan developed through and approved by SWCDs which includes appropriate land treatment practices, production practices, management measures, and technologies that prevent and abate agricultural and silvicultural nonpoint source pollution. The BMPs prescribed in a WQMP are defined in the NRCS FOTG. WQMPs afford agricultural producers an opportunity to comply with state water quality laws through traditional voluntary incentive-based programs.

TCFA, with assistance from local SWCDs and USDA-NRCS, will promote availability and utilization of cost-share funds through the EQIP State Resource Concern for AFO-CAFO Beef – Water Quality/Air Quality to aid in implementation of BMPs related to manure/compost application.

TCFA, with assistance from local SWCDs and the TSSWCB Hale Center Regional Office, will promote availability and utilization of cost-share funds through the WQMP Program (historically known as 503 cost-share) to aid in implementation of BMPs related to manure/compost application. (Start Date: Month 13; Completion Date: Month 36)

- **A project briefing/orientation conference call has been set for April 26, which will include the field representatives for Soil and Water Conservation Districts and the USDA-Natural Resources Conservation Service – Zone 1 office (Lubbock/Amarillo region).**

**2% Complete – On-going**

**Subtask 8.4** TCFA/ AgriLife Extension will explore options for future development of a certification program for manure and compost haulers based on the outcomes of the training and demonstration efforts of this project.. (Start Date: Month 32; Completion Date: Month 36)

**0% Complete – On-going**

## **TASK 9: BMP Effectiveness Monitoring**

**Subtask 9.1** TCFA/ AgriLife Extension and AgriLife Research, as appropriate, will establish control and treatment plots at one location in the Sweetwater Creek watershed, one location in the Buck Creek watershed and one location on the Caprock. Treatments may include application of manure and/or compost at single-year vs. multi-year agronomic rates. (Start Date: Month 6; Completion Date: Month 9)

**0% Complete – On-going**

**Subtask 9.2** At one demonstration location, AgriLife Research will install automatic water samplers to collect runoff from the control and treatment plots. Water samples will be analyzed for nutrients and bacteria by the Texas AgriLife Research Laboratory at Vernon.. (Start Date: Month 6; Completion Date: Month 9)

**0% Complete – On-going**

**Subtask 9.3** At least annually, TCFA will collect soil samples from control and treatment plots using GPS grid soil sampling. Samples will be collected at the 0-6 inch depth and 6-24 inch depth across the grid. Composite samples will be submitted to a commercial soil testing laboratory for macronutrient, micronutrient, pH and organic matter. In a similar manner, soil samples will be collected at two distances down-gradient of the plots. Distances will be determined by site-specific topographic features of the site locations. (Start Date: Month 6; Completion Date: Month 36)

**0% Complete – On-going**

**Subtask 9.4** Water samples will be collected by TCFA from all water wells located within the boundaries of the control and treatment plots as well as any water wells (where access is granted) within 500 feet down-gradient of the plot locations. Water samples will be analyzed for bacteria and nutrients. (Start Date: Month 6; Completion Date: Month 36)

**0% Complete – On-going**

**Subtask 9.5** TCFA will collect representative manure and/or compost samples prior to all planned land application events. Samples will be analyzed by a commercial testing laboratory for macronutrients, micro nutrients and moisture content. Split samples will also be provided to AgriLife Research for the BST library. (Start Date: Month 6; Completion Date: Month 36)

**0% Complete – On-going**

## **Activities Planned for Next Quarter**

- **Conduct interviews, as needed, and hire a project manager.**
- **Prepare and submit a QAPP to the TSSWCB.**
- **Finalize the subcontract between TCFA and WTAMU.**
- **Host a conference call for local SWCD and USDA-NRCS representatives.**
- **Finalize the list of Project Advisory Group members.**
- **Host the first meeting of the Project Advisory Group.**
- **Prepare and distribute a news release about the project, to coincide with the Project Advisory Group meeting.**
- **Identify and select project demonstration sites/landowner cooperators.**
- **Launch an initial project webpage inclusive of basic project goals and tasks.**
- **Develop a draft questionnaire, for review and approval at the Project Advisory Group meeting, to be used for assessing current environmental knowledge of manure/compost haulers.**