

Texas Water Resources Institute

Bacteria Runoff BMPs for Intensive Beef Cattle Operations Agreement No. 68-7442-7-482

Quarter no. 10 From 1/1/10 Through 3/31/10

I. Abstract

Maintenance and runoff collection from the three watershed sites continued this quarter. Five runoff events were sampled this quarter, bringing the total number of runoff events for the project to 19. Next quarter, the sites will be grazed, the berm for BB1 will be repaired, a water line will be run to the sites so that water will no longer have to be hauled, and runoff sampling will continue. Delivery of educational programs accelerated this quarter as well with the delivery of the *Lone Star Healthy Streams* bacteria BMP education program for cattlemen to 1,333 producers and other attendees of educational programs. Delivery will continue next quarter.

II. Overall Progress and Results by Task

TASK 1: Project Coordination and Administration

Subtask 1.1: Preparation of progress reports.

The following actions have been completed during this reporting period:

- a. The Year 3, Quarter 1 Progress Report was submitted on January 15, 2010.

84% Complete

Subtask 1.2: Coordination of meetings 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. On January 21, March 16, and March 26, AgriLife Extension and TWRI met to discuss the project contract, budget, deliverables, activities, and schedule.

84% Complete

Subtask 1.3: Submission of required financial forms every quarter (SF-272 and SF-269).

The following actions have been completed during this reporting period:

- a. As of March 31, 2010, \$53,112 or 72% of federal project funds had been expended.
- b. Progress of Allocations to each Department is as follows:
 - TWRI has expended 73% of their funds
 - SCSC has expended 67% of their funds

72% Complete

Subtask 1.4: Development of the final project report within 90 days of project completion.

The following actions have been completed during this reporting period:

- a. No activity to report this quarter.

0% Complete

TASK 2: Assess Bacteria Runoff from Intensively Managed Beef Cattle Operations

Subtask 2.1: Install three (3) watershed sites at the Texas A&M University Farm in Brazos County to evaluate un-grazed, moderately stocked, and heavily stocked irrigated pasture conditions.

The following actions have been completed during this reporting period:

- a. Equipment installation has been completed and monitoring initiated on September 15, 2008.

100% Complete

Subtask 2.2: Maintain the three watershed sites and assess bacteria concentrations, runoff volume, and precipitation from each of the three (3) sites for a period of two (2) years.

The following actions have been completed during this reporting period:

- a. ISCO maintenance was conducted on each watershed site on January 30, February 5, and March 21.
- b. No grazing treatment was conducted this quarter; however, cattle broke through the electric fence several times between February 1-8 before the problem with the electric fence was solved. This allowed a minor amount of grazing of the study pastures (~17 AUD each). Grazing is planned for next quarter.
- c. The stocking rate at the end of year 1 for site BB2 was 6.1 acres per animal unit while site BB3 was 2.9 acres per animal unit. Due to the drought conditions and early level of establishment of the Tifton 85, stocking rates were considerably lower than the target levels of 2 acres per animal unit for the moderately grazed site BB2 and 1 acre per animal unit for the heavy grazed BB3.
- d. Repair work is needed on the ungrazed site BB1 berm. This work will be completed next quarter.

- e. Next quarter, the sites will be fertilized and a water line will be run to the sites so that water will no longer have to be hauled to the sites.

77% Complete

Subtask 2.3: Evaluate the water quality data collected throughout the project in order to develop timely and up-to-date information for presentation to producers.

The following actions have been completed during this reporting period:

- a. Runoff samples were collected on January 16 and 29 and February 4, 8, and 11. This quarter, *E. coli* levels at the ungrazed site BB1 averaged 4,022 cfu/100 ml, 6,140 cfu/100 ml at the moderately grazed site BB2, and 3,406 cfu/100 ml at the heavy grazed site BB3.

77% Complete

TASK 3: Technical Transfer

Subtask 3.1: Develop and deliver educational materials regarding bacteria runoff and BMPs for reducing it to agricultural producers.

The following actions have been completed during this reporting period:

- a. In September 2007, TWRI developed the website titled “Improving Water Quality of Grazing Lands.” This website displays the efforts of this project and two related projects evaluating BMPs and developing education programs to address bacteria.
 - It can be found at the following web address: <http://grazinglands-wq.tamu.edu/>.
 - The website was viewed by:
 - 12 unique visitors in January 2010
 - 6 unique visitors in February 2010
 - 19 unique visitors in March 2010
 - A grand total of 981 unique visitors since September 2007
 - The website will be updated as new data and information are obtained.
- b. Texas AgriLife Extension Service (Extension) delivered *Lone Star Healthy Streams* presentations on bacteria issues and grazing management to 1,333 producers and others statewide.
 - On January 11, Extension made the LSHS presentation to the Texas Pasture and Forage Work Group and the Texas Beef Workers at the Annual Staff Conference (31 attended).
 - On January 21, Extension introduced the LSHS concept and bacteria issue at a Jackson County educational program (61 attended).
 - On January 26, Extension introduced the LSHS concept and bacteria issue at a Bell County educational program (413 attended).
 - On January 27, Extension introduced the LSHS concept and bacteria issue at the National Cattlemen’s Beef Association annual meeting in San Antonio (246 attended).

- On January 29, Extension presented the LSHS program in Burleson County (269 attended).
- On February 9, Extension introduced the LSHS concept and bacteria issue at the Blackland Income Growth educational program (71 attended).
- On February 18, Extension introduced the LSHS concept and bacteria issue at a Williamson County educational program (176 attended).
- On March 30, Extension introduced the LSHS concept and bacteria issue at the AgriLife Pasture & Livestock Management Program for Novices educational program (66 attended).
- The LSHS presentation will be offered in Caldwell County on April 27 of next quarter.

84% Complete

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

- N/A

IV. Projected Work for Next Quarter

- Prepare and submit Year 3, Quarter 2 Progress Report.
- Submit an invoice for the billing period of 1/1/10-3/31/10.
- Conduct grazing treatment.
- Continue monitoring runoff.
- Continue delivery of educational materials regarding bacteria runoff and BMPs.