

## Texas AgriLife Research

### Agricultural NPS Remediation in the Cedar Creek Reservoir Watershed Section 319(h) Nonpoint Source Program FY 2007 Project 07-14

Quarter no. 9 From 1/1/10 Through 3/31/10

#### I. Abstract

Revisions to the QAPP were made, submitted and approved this quarter. The fall cover crop was harvested in the cropland BMP plots and preparations for spring planting began. Water sampling and data collection continues. Zach Kinsey has assisted with planning five additional WQMPs during this quarter. Samples were collected from recent rain events and are being analyzed. A multi-county beef and forage day was held and surveys to assess knowledge gain were handed out. TWRI continued coordinating project activities, attending stakeholder meetings and reporting. A conference call was scheduled for April 8 to discuss the overall project status.

#### II. Overall Progress and Results by Task

##### **TASK 1: DEVELOP AND IMPLEMENT WATER QUALITY MANAGEMENT PLANS**

*Subtask 1.1 The Kaufman-Van Zandt SWCD will hire a technician to provide technical assistance to landowners on the development of WQMPs. The TSSWCB Mount Pleasant Regional Office will train the technician.*

The following actions have been completed during this reporting period:

- The Kaufman-Van Zandt Soil and Water Conservation District hired Zach Kinsey to serve as the technician for this project on February 20, 2008.

**100% Complete**

*Subtask 1.2 The SWCD technician will attend monthly SWCD board meetings to discuss technical assistance activities, project schedule, lines of responsibility, communication needs, and other required tasks with project participants.*

The following actions have been completed during this reporting period:

- Zach Kinsey attended SWCD board meetings on January 6, February 3 and March 3 to update them of field visits, conservation planning and program status.

**55% Complete**

*Subtask 1.3 The SWCD technician will coordinate with other agencies and programs providing landowners incentives for adopting Best Management Practices.*

The following actions have been completed during this reporting period:

- Zach Kinsey has assisted with the planning of WQMP #024, 030, 054, 055, 056 and has cooperated with NRCS employees to improve water quality within the Cedar Creek Watershed.

**57% Complete**

*Subtask 1.4 The SWCD technician 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:

- No activity this quarter.

**50% Complete**

*Subtask 1.5 The SWCD technician will prepare materials for inclusion in quarterly reports and the final report for submittal by TWRI to the TSSWCB.*

The following actions have been completed during this reporting period:

- Zach Kinsey provided information for the quarterly report.

**65% Complete**

*Subtask 1.6 The Kaufman-Van Zandt SWCD will be allocated \$300,000 in 319(h) funding to provide cost-share to landowners in the Cedar Creek Watershed to implement BMPs that reduce nutrient and sediment runoff to local waterbodies. In addition, TRWD will provide \$50,000 in cost-share funds. The maximum cost-share rate shall not exceed 70% of the cost of implementation of the BMP with 60% coming from 319(h), 10% from TRWD funds, and 30% from the landowner. Landowners shall be eligible to receive a maximum cost-share amount of \$15,000 from the TSSWCB 319(h) funds. Cost share will be based on actual cost not to exceed average cost of the practice.*

The following actions have been completed during this reporting period:

- All practices on WQMP#505-09-046 have been completed and paid (11.7 acres of grass planting, nutrient management and pest management), as of February 17, 2010. Total cost-share for installation was \$1,710.09.

**35% Complete**

*Subtask 1.7 The SWCD technician will send out notifications announcing the availability of assistance for implementing WQMPs/BMPs and will assist the SWCD in accepting and prioritizing the WQMP applications. The TSSWCB project manager must approve all announcements, letters and publications developed before distribution.*

The following actions have been completed during this reporting period:

- Zach Kinsey assisted the SWCD in accepting three requests for planning. These applicants were prioritized, and planning was initiated.

**60% Complete**

*Subtask 1.8 The SWCD technician, with assistance from NRCS and the TSSWCB Mount Pleasant Regional Office, will provide landowners information on appropriate BMPs and will work with landowners in developing and implementing a minimum of 20 WQMPs.*

The following actions have been completed during this reporting period:

- No activity this quarter.

**35% Complete**

*Subtask 1.9 The TSSWCB Mount Pleasant Regional Office will provide technical review and certification of WQMPs. During this process, TSSWCB will certify all WQMPs and ensure that they are consistent with state water quality standards.*

The following actions have been completed during this reporting period:

- No activity this quarter.

**30% Complete**

*Subtask 1.10 The SWCD technician will conduct status reviews on all WQMPs to ensure BMP implementation schedules are being followed.*

The following actions have been completed during this reporting period:

- No activity this quarter.

**0% Complete**

*Subtask 1.11 The SWCD technician will assist landowners in the SWCD with the acquisition of current soil tests though utilization of project funding. Funding for 100 soil tests annually will be provided.*

The following actions have been completed during this reporting period:

- Throughout the project thus far, 120-150 soil test bags have been given out to 40 producers (2-3 bags per producer). There has been little response from the landowners and in most cases if they do utilize the bags, they only do one and they do it themselves.

**0% Complete**

*Subtask 1.12 The SWCD will have an audit completed at least once during the project period.*

The following actions have been completed during this reporting period:

- No activity this quarter.

**0% Complete**

*Subtask 1.13 The SWCD technician, with assistance from the NRCS and TSSWCB Mount Pleasant Regional Office, will compile information on the location and types of BMPs for each WQMP implemented within the Cedar Creek Reservoir, Kings Creek, and Cedar Creek Watersheds.*

The following actions have been completed during this reporting period:

- A spreadsheet is included at the end of this report that lists the plan number, county, number of acres and practices installed/cost-shared through this project to-date. Approximately 37 plans are in progress with more in line.

**30% Complete**

**TASK 2: VERIFY BMP EFFECTIVENESS**

*Subtask 2.1 Texas AgriLife Research will develop a Quality Assurance Project Plan (QAPP) that will detail project goals and objectives, the data needs to fulfill those objectives, lists field and laboratory methods, procedures and schedules to be followed, and specify a data management structure and quality assurance protocols. The QAPP will be developed using guidelines in EPA QA/R-5, "EPA Requirements for Quality Assurance Project Plans".*

The following actions have been completed during this reporting period:

- The QAPP was reviewed and approved by TSSWCB and EPA

**100% Complete**

*Subtask 2.2 Texas AgriLife Research will provide annual revisions to the QAPP and amendments, as needed, to the TSSWCB and EPA. (Start Date: Month 6; Completion Date: Month 36)*

The following actions have been completed during this reporting period:

- Revisions were sent to TSSWCB on January 22.
- Additional revisions were requested by TSSWCB. These revisions were made and the correct QAPP was approved March 8.
- The QAPP signature pages were signed and submitted on March 14.

**50% Complete**

*Subtask 2.3 Texas AgriLife Research will construct 10 replication plots 2,500 square feet in size and measuring 50X50 ft to evaluate agricultural BMPs for cropland and pasture lands.*

*Texas AgriLife Research will install run off collection instruments and soil moisture monitoring equipment in the runoff plots and gather benchmark runoff data from each plot before initiating BMPs.*

The following actions have been completed during this reporting period:

- Water samples and data collection continues in the cropland and pastureland plots using the installed ISCO samplers.
- Harvested the fall cover crop in the cropland BMP plots. Preparation of the soil has begun for spring planting.
- Pasture land plots have been physically disturbed through light tilling to simulate overgrazed pasture conditions in preparation for implementation of best management practices including nutrient management and range seeding (Figure 1).



**Figure 1: Disturbed pasture land plots**

### **90% Complete**

*Subtask 2.4 Texas AgriLife Research will collect runoff data including flow intensities and volumes, sediment loads, total and soluble N and P concentrations, pH, electrolytic conductivity, total and dissolved organic carbon, and dissolved oxygen content. Treatments will consist of the following: 1) Control, 2) Residue management, 3) Buffer Strips, 4) Fertilizer and Nutrient Management, and 5) Cropland converted to forage production.*

The following actions have been completed during this reporting period:

- Samples have been collected from recent rain events, and are in the process of being analyzed in the laboratory (Figure 2).



**Figure 2: Runoff sample collection**

**50% Complete**

*Subtask 2.5 Texas AgriLife Research will use runoff data and data from other sources to calculate the nutrient and sediment load reductions resulting from the project for inclusion in the final report.*

The following actions have been completed during this reporting period:

- No activity this quarter.

**35% Complete**

### **TASK 3: PROVIDE WATER QUALITY EDUCATION**

*Subtask 3.1 Texas AgriLife Extension and Texas AgriLife Research will assimilate and evaluate the adequacy of existing educational resources and resource needs to provide educational support for the project.*

The following actions have been completed during this reporting period:

- No activity this quarter.

**85% Complete**

*Subtask 3.2 Texas AgriLife Extension and Texas AgriLife Research will provide biannual educational/training events on single- or multi-county level to: 1) improve landowner knowledge and understanding of BMPs for nutrient management and erosion control, 2) provide information on project activities and results and 3) provide additional training on implementing and sustaining BMPs. NRCS, TSSWCB, and Kaufman-Van Zandt SWCD personnel will be requested to be speakers to provide information on cost share and technical assistance programs available to assist producers.*

The following actions have been completed during this reporting period:

- No activity this quarter.

**66% Complete**

**REVISED 4/14/2010**

*Subtask 3.3 Texas AgriLife Extension and Texas AgriLife Research will conduct a preliminary survey of a select group of initial event participants to evaluate knowledge about surface water conditions in the watershed and assess current knowledge and use of erosion control and nutrient management practices. Follow-up surveys will be conducted in subsequent years to evaluate changes, if any, in producer awareness and BMP implementation.*

The following actions have been completed during this reporting period:

- A multi-county beef and forage day event was held March 25. A survey was handed out to participants to evaluate their knowledge gained. We are awaiting the final results.

**20% Complete**

#### **TASK 4: COORDINATE PROJECT ACTIVITIES AND REPORTING**

*Subtask 4.1 TWRI, with input from the Project Partners, 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:

- TWRI will submit the Year 3, Quarter 9 Progress Report on April 13, 2010

**50% Complete**

*Subtask 4.2 TWRI will coordinate quarterly TTVN meetings or teleconferences, 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:

- TWRI scheduled a conference call with Zach and Clint to discuss the status of the project. The call is scheduled for April 8, 2010.

**45% Complete**

*Subtask 4.3 TWRI will attend meetings with the TSSWCB project manager, SWCD, and other meetings, as needed, to review project status, deliverables, etc.*

The following actions have been completed during this reporting period:

- No activity this quarter.

**33% Complete**

*Subtask 4.4 TWRI will assist Project Partners with the completion and submittal of a final report to the TSSWCB at the culmination of the project. This report will be completed and provided to the TSSWCB in electronic format (i.e. compact disc, etc.).*

**REVISED 4/14/2010**

The following actions have been completed during this reporting period:

- No activity this quarter.

**0% Complete**

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

- Due to excess rain events throughout the past year and this spring in particular, producers have not been able to plow and/or plant as planned. Therefore, a no-cost extension of time will be requested next quarter to extend the end date to allow more time for project deliverables to be met.



#### **IV. Projected Work for Next Quarter**

- Zach will continue working on WQMPs.
- Working through the County Extension Agents in Kaufman, Henderson, Van Zandt and Rockwall counties, the project team will continue to coordinate educational events in the Cedar Creek Watershed.
- Continue working with the Kaufmann-Van Zandt SWCD, TSSWCB, USDA-NRCS, Texas AgriLife Research, Texas AgriLife Extension Service, TWRI and TRWD in moving forward with project deliverables and reporting progress on a quarterly basis. Efforts will be made to publicize the project and raise awareness of water quality issues within the study area.
- Request no-cost extension on this project.

Plan Number	County	Acres	PRACTICES	Red - Installed/Cost-Shared																		
				512 - Pasture/Hayland Planting	512 - Pasture and Hay Planting (legumes/c	600 - Terraces	412 - Grassed Waterways	330 - Contour Farming	382 - Fence (4 wire standard)	393 - Filter Strip	386 - Field Border	342 - Critical Area Planting	511 - Forage Harvest Management	328 - Conservation Crop Rotation	528A - Prescribed Grazing	590 - Nutrient Management	595 - Pest Management	590 - Nutrient Management (establishment)	595 - Pest Management (establishment)	329 - Conservation Tillage	344 - Residue Management-Seasonal	645 - Upland Wildlife Habitat Management
				ac.	ac.	ft.	ac.	ac.	ft.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.
14	Kaufman	174.0		23.0																		
16	Kaufman	76.0																				
15	Rockwall	1,500.0																				
17	Kaufman	86.0		30.0	68.0							30.0		51.0		30.0	30.0	30.0				
18	Kaufman	267.8		47.1								37.2		180.2	168.3	180.2	47.1					265.4
19																						
20																						
21																						
22	Kaufman	854.0							6600.0					495.8	399.6	399.6						451.5
23	Kaufman	80.0		29.9										77.8	77.8	77.8	29.9	29.9				
24	Van Zandt	243.0		71.0								240.0		240.0	240.0	240.0	71.0	71.0				169.0
25																						
26	Van Zandt	251.3		73.0					5430.0			73.0		247.3	228.9	228.9	73.0	73.0				247.3
27	Van Zandt			35.0																		
28																						
29																						
30	Van Zandt			40.0																		
31																						
32	Van Zandt	115.9		31.0								83.7		83.7	83.7	83.7	31.0	31.0				115.4
33	Kaufman	15.3		15.1								15.1			15.1	15.1	15.1	15.1				
34																						
35	Van Zandt	67.8		60.0								62.3		62.3	62.3	62.3	60.0	60.0				
36	Kaufman	102.5		82.0								82.1		98.3	82.1	82.1	82.0	82.0				
37	Kaufman	1,139.6		122.4					1663.0			351.3		868.2	812.2	812.2	122.4	122.4				808.1

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			512 - Pasture/Hayland Planting	512- Pasture and Hay Planting (legumes/c	600 - Terraces	412 - Grassed Waterways	330 - Contour Farming	382- Fence (4 wire standard)	393 - Filter Strip	386 - Field Border	342 - Critical Area Planting	511 - Forage Harvest Management	328 - Conservation Crop Rotation	528A - Prescribed Grazing	590 - Nutrient Management	595 - Pest Management	590- Nutrient Management (establishment	595- Pest Management (establishment)	329 - Conservation Tillage	344 - Residue Management-Seasonal	645- Upland Wildlife Habitat Management				
			Red - Installed/Cost-Shared																						
			ac.	ac.	ft.	ac.	ac.	ft.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.			
38	Kaufman	147.0	46.5					476.0				97.9		76.7	105.2	130.0	46.5	46.5				37.6			
39																									
40																									
41	Van Zandt	81.5	43.3									43.3		37.3	80.6	80.6	43.3	43.3							
42																									
43																									
44	Rockwall	304.4	32.2					1100.0				66.2	134.4	167.2	301.6	301.6	32.2	32.2		134.4	134.4				
45	Van Zandt	75.5	35.0									68.5		70.5	68.5	68.5	35.0	35.0				70.5			
46	Kaufman	159.4	11.7									136.6		82.4	149.2	149.2	11.7	11.7							
47	Kaufman	25.4	23.6									23.6		23.6	23.6	23.6	23.6	23.6							
48																									
49																									
50																									
51	Kaufman	39.7	32.0									32.0		32.0	32.0	32.0	32.0	32.0							
52	Kaufman																								
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56	Kaufman																								

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			512 - Pasture/Hayland Planting																			
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			ac.	ac.	ft.	ac.	ac.	ft.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.	ac.
		5,806.1	883.8		0.0	0.0	0.0	15269.0	0.0	0.0	0.0	1442.8	134.4	2894.3	2930.7	2997.4	785.8	738.7	0.0	134.4	2299.2	