

2<sup>nd</sup> Quarter and Annual Progress Report  
FY2000 Project 1200  
Grant #C9996103-08-01  
July 2, 2003

Last Update: July 2, 2003  
J. Wise

**Project No: 1200 Strawberry River Nonpoint Source Assessment Survey**

Work plan approved August 1, 2000.

**Task 1: Watershed Land Use Assessment**

March 31, 2001

1.1 The land use inventory is approximately 20% complete

June 30, 2001

1.1 The land use inventory is approximately 30% complete

September 31, 2001

1.1 The land use inventory is approximately 75% complete

March 31, 2002

1.1 Additional land use data has been collected. Additional visits to some of the dairies was made to refine discrepancies between data bases. The land use inventory is approximately 85% complete

June 30, 2002

1.1 Additional land use data has been collected. More visits to the dairies were made to refine the data base. The land use inventory is approximately 90% complete

September 30, 2002

1.1 Additional land use data has been collected. The land use inventory has been completed.

MARCH 31, 2003

The development of GIS base maps has started. These maps will be used to display not only the land use data, but the fish community, macroinvertebrate community and water quality sampling stations sites.

JULY 2, 2003

The GIS base maps have been developed.

**Task 2: Surface Water Assessment**

December 31, 2000

2.1 QAPP plan for the project was approved August 16, 2000.

2.2 Sites have been identified for USGS stream gage installations.

2.4 Water quality sample sites have been located and GPS data collected from the sites.

March 31, 2001

2.4.2 Water samples were collected from the sites. Base Flow.

June 30, 2001

2.4.2 Water samples were collected from WQ sites 5/1/01.

2.4.2 Water samples were collected from WQ sites 6/19/01.

2.4.2 Additional Bacteria samples were collect from WQ sites 6/6/01.

2.6.1 Diel DO stations have been selected.

2.7.1 Macroinvertebrate stations have been selected.

2.8.1 Fish community sample sites have been selected.

September 31, 2001

2.4.2 Water samples were collected from WQ sites 8/27/01.

2.4.2 Additional Bacteria samples were collect from WQ sites four times  
7/2/01, 7/23/01, 9/13/01, 9/27/01

2.6.2 72-hour diel DO was collected at 12 sites

2.7.2 Macroinvertebrate samples were collected for 14 sites;  
5 sites not sampled because of no flow.

2.8.1 Fish community samples were collected from 16 sites.

December 31, 2001

2.4.2 Water samples were collect from WQ sites 11/06/01

2.7.3 Half of the macroinvertebrate samples have been picked.

2.8.1 Fish community samples have been sorted, identified, and cataloged.

March 31, 2002

2.3.2 Historical water quality data has been collected.

Some analysis has been accomplished on the data.

Outside water quality data has been solicited.

2.4.2 Water samples were collect from WQ sites 01/22/02, low flow  
Water samples were collect from WQ sites 01/24/02, storm flow  
Water samples were collect from WQ sites 03/12/02, storm flow

2.7.4 The fall macroinvertebrate samples have been picked.  
Half of the macroinvertebrate samples have sorted and identified.

2.8.1 Fish community data has been analyzed.

All fish data has been entered into ADEQ Fish Community database.

June 30, 2002

2.4.3 Water samples were collect from WQ sites 04/08/02 and 04/29/02, both storm flows,  
and on 06/17/02, low flow

Additional bacteria samples were collect from WQ sites on 06/05/02.

2.7.5 Continued identifying macroinvertebrates from the fall samples. Spring  
macroinvertebrate samples have been collected form each of the sites.

September 30, 2002

2.4.4 Water samples were collect from WQ sites on 8/27/02, summer low flow.

Bacteria samples were collect from WQ sites on 07/23/02, 8/27/02, 9/4/02 and  
9/19/02.

Water quality data collected to date has been tabulated for final report preparation.

Bacteria data collected to date has been tabulated for final report preparation.

- 2.7.6 Identification has been completed on the fall macroinvertebrate samples. Continued identifying macroinvertebrates from the spring samples.
- 2.6.3 72-hr, DO was taken at 143L, 143M, 143I, WWTP, 143IB, 143IBB
- 2.6.4 72-hr, DO was taken at 143B, 143P, SBR01, SBR02, SBR03, and WHI 24
- 2.8.1 Fish were collected at three sites from North Big Creek

December 31, 2002

- 2.4.5 Water samples were collect from WQ sites on 12/30/02, late fall low flow. Water quality data collected to date has been tabulated for final report preparation. Bacteria data collected to date has been tabulated for final report preparation.
- 2.7.7 Continued identifying macroinvertebrates from the spring samples.
- 2.8.2 Fish identification has been completed on the samples collected from North Big Cr.

MARCH 31, 2003

- 2.4.6 Water samples were collect from WQ sites on 2/24/03, and 3/19/03; both were storm flow samples.
- 2.7.8 Continued identifying macroinvertebrates from the spring samples.

JULY 2, 2003

- 2.4.7 Water samples were collect from WQ sites on 6/19/03, storm flow samples. Continued building water quality, fish community, etc, data tables
- 2.7.9 Continued identifying macroinvertebrates from the spring samples.

SEPTEMBER 30, 2003

- 2.4.6 All water quality data has been entered into the Departments on-line searchable data base. It is being prepared to be entered into STORET. All the data has been prepared for the final report.
- 2.7.4 All macroinvertebrate samples have been picked, identified and the data has been prepared for the final report.
- 2.8.4 All fish community data has been prepared for the final report.

**Task 3: Ground Water Assessment**

- 3.2.1 Some wells have been located for sampling.
- 3.2.2 Outside ground water data has been requested.

June 30, 2002

- 3.2.3 Additional well and landowner data has been gathered.

September 30 2002

- 3.1.1 Well log data has been gathered from several hundred wells in the watershed.
- 3.2.1 Ground water samples were collected from 64 wells and/or springs.  
Bacteria samples were collected from 22 wells and/or springs.  
GPS data was collected from each of the wells and/or springs.

December 31, 2002

- 3.2.1 Ground water data has been tabulated. Data from the wells collected has been sent to the well owners.  
Additional work has been accomplished to collect samples from a number of the wells that showed elevated nutrients for additional analysis.

MARCH 31, 2003

- 3.2.1 Additional ground water samples were collected from 18 wells and/or springs that were previously been tested and were shown to have elevated nitrate concentrations. The samples were shipped to the USGS lab in Colorado for a specific battery of test. The data has been received from the samples, but is not yet tabulated or analyzed..

JULY 2, 2003

Began compiling ground water quality data and building tables for final report.  
Began analyzing ground water quality data for report.

### **SEPTEMBER 30, 2003**

- 3.2.7 All ground water data has been prepared for inclusion into the final report.

## **Task 4: Stream Bank Assessment Survey**

July 31, 2001

- 4.1.1 Conservation District data has been obtained as a portion of basin wide survey.
- 4.1.1 ADEQ surveyed stream banks between Hwy. 354 and Hwy. 289.

September 31, 2001

- 4.1.1 ADEQ began surveying stream banks in Lawrence County.
- 4.1.2 Several stream banks were visited for possible intensive surveying.
- 4.1.2 Stream banks have been identified for intensive work up.

December 31, 2001

- 4.1.2 A stream bank was surveyed. Bank pins were installed.

March 31, 2002

- 4.1.1 Additional stream bank surveys were initiated in Lawrence County.
- 4.1.2 The streambank was resurveyed in January and the bank pins were repositioned.

December 31, 2002

- 4.1.2 The stream bank was resurveyed. Most of the bank pins were missing.

## **Task 5: Report Preparations**

January 2, 2001

5.1, 5.3 Quarterly Progress Report and Quarterly QA Report submitted to ASWCC.

March 31, 2001

5.1, 5.3 Quarterly Progress Report and Quarterly QA Report submitted to ASWCC.

July 2, 2001

5.1, 5.3 Quarterly Progress Report and Quarterly QA Report submitted to ASWCC.

September 31, 2001

5.1, 5.3 Quarterly Progress Report and Quarterly QA Report submitted to ASWCC.

December 31, 2001

5.1, 5.3 Quarterly Progress Report and Quarterly QA Report submitted to ASWCC.

5.2, 5.4 Annual progress report submitted to ASWCC.

March 31, 2002

5.1, 5.3 Quarterly Progress Report, Quarterly QA Report, and Quarterly MBE/WBE report submitted to ASWCC.

June 30, 2002

5.1, 5.3 Quarterly Progress Report, Quarterly QA Report, and Quarterly MBE/WBE report submitted to ASWCC.

September 30, 2002

5.1, 5.3 Quarterly Progress Report, Quarterly QA Report, and Quarterly MBE/WBE report submitted to ASWCC.

December 31, 2002

5.1, 5.3 Quarterly Progress Report, Quarterly QA Report, and Quarterly MBE/WBE report submitted to ASWCC.

MARCH 31, 2003

5.1, 5.3 Quarterly Progress Report, Quarterly QA Report, and Quarterly MBE/WBE report submitted to ASWCC.

5.5 Preparation of the draft report has begun.

JULY 2, 2003

5.1, 5.3 Quarterly Progress Report, Quarterly QA Report, and Quarterly MBE/WBE report submitted to ASWCC.

5.5 Preparation of the draft report has continues.

### **SEPTEMBER 30, 2003**

5.1, 5.3 Quarterly Progress Report, Quarterly QA Report, and Quarterly MBE/WBE report submitted to ASWCC.

5.5 Draft versions of the background, introduction, watershed description, fish community and macroinvertebrate sections of the final report have been completed. Preparation of the other sections continue. The draft report is approximately 70% complete.



<b>Work Plan Task Completion Progress</b>			
<b>Task # subtask</b>	<b>Description</b>	<b>Remaining Work</b>	<b>% Complete</b>
1	Watershed Land Use Assessment		100
1.1	Survey watershed for land use	None	100
1.2	Inventory poultry operations	None	100
1.3	Inventory swine operations	None	100
1.4	Inventory cattle operations	None	100
1.5	Inventory dairy operations	None	100
1.6	Inventory other land uses	None	100
1.7	Determine Lats & Longs	None	100
1.8	Prepare data for report	Prepare GIS Layers and map	95
2	Surface Water Assessment		95
2.1	QAPP approval	None	100
2.2	USGS gaging stations	Spring sampling	100
2.3	Outside data assimilation	None	100
2.4	Collect water samples	Spring sampling	100
2.5	Diurnal DO samples	None	100
2.6	Macroinvertebrate assessment	Spring sampling	100
2.7	Fish community assessment	None	100
2.8	Prepare data for report	Analyze data	90
3	Ground water Assessment	None	95
3.1	Outside data assimilation	None	100
3.2	Locate and sample wells/springs	None	100
3.3	Prepare data for report	Analyze data for report	80
4	Stream Bank Assessment		90
4.1	Inventory streambanks	None	100
4.2	Intensive streambank survey	None	100
4.3	Resurvey streambank	*None	100
4.4	Pictorial documentation	None	100
4.5	Prepare data for report	Analyze data for report	50
Note	The streambank will be surveyed again the fall of 2003		
5	Report Preparations		70
5.1	Quarterly Progress Reports	2 reports pending*	75
5.2	Annual Progress Reports	2 reports pending	75
5.3	Quarterly QAQC Reports	2 reports pending	75
5.4	Annual QAQC Report	2 reports pending	75
5.5	Draft Report	Continue report preparation	60
5.6	Final Report	Review of draft	0
	* shortened project time by 4 quarters		
Total Project Completion as of June 30, 2003			90

**Appendix 1: STRAWBERRY RIVER SAMPLE SITES**

SITE ID	WATER BODY	County	WS	Samples				Latitude Longitude
	LOCATION (Sec., Twnshp, Rnge)			W	M	F	O	
WHI0143A	Strawberry River	Fulton		X				36 16 23.68N 91 54 24.59W
	at Ar. Hwy. 9 bridge, 4.0 m. N. of Oxford (Sec 26, T19N, R9W)							
UWSBR01	Strawberry River	Izard		X				36 14 00.24N 91 48 59.66W
	south of Ar. Hwy. 354 W. of Horseshoe Bend (Sec 11, T18N, R8W)							
WHI0143E	Little Strawberry River	Fulton		X				36 15 55.11N 91 46 56.76W
	at Co. Rd. bridge W. of 289 at Morriston (Sec 36, T19N, R8W)							
WHI143H	Little Strawberry River	Izard		X				36 14 01.90N 91 47 23.51W
	at Ar. Hwy 354 bridge, 1.5 mi. E. of Wiseman (Sec 12, T18N, R8W)							
WHI143B	Strawberry River	Izard		X				36 10 41.89N 91 44 21.94W
	Ar. Hwy 56 bridge 1.8 mi. E. of Ar. Hwy. 289 (Sec 33, T18N, R7W)							
UWSBR02	Strawberry River	Sharp		X				36 05 55.42N 91 36 31.33W
	at US 167 2.5 mi. N. of Ar. Hwy. 56 (Sec. 27, T17N, R6W)							
WHI0143L	Piney Fork Creek	Izard		X				36 04 24.71N 91 44 05.33W
	at Co. Rd. west of Zion (Sec. 3, T16N, R7W)							
WHI0143M	Piney Fork Creek	Sharp		X				36 04 49.52N 91 36 39.03W
	at US 167 1.5 mi. N. of Ar. Hwy. 56 (Sec. 34, T17N, R6W)							
WHI0143I	North Big Creek	Sharp		X				36 13 21.30N 91 34 50.01W
	at Ar. Hwy 354, 1.4 mi. E. of US 167 (Sec 12, T18N, R6W)							
UWNBC01	North Big Creek	Sharp		X				36 08 17.34N 91 30 11.85W
	Co. Rd. off Ar. Hwy 354 SE. of Center (Sec 10, T17N, R5W)							
WHI0143P	Strawberry River	Sharp		X				36 06 37.22N 91 26 58.59W
	Ar. Hwy 58, 3 mi. N. of Ar. Hwy 58 (Sec 19 T17N R4W)							
WHI0143N	Mill Creek	Sharp		X				36 07 12.65N 91 24 13.02W
	Strawberry River rd. S. of Sitka (Sec 16, T17N, R4W)							
WHI024	Strawberry River	Lawrence		X				36 01 39.67N 91 19 31.03W
	at Ar. Hwy. 115 N. of Strawberry (Sec 17, T16N, R3W)							



**Table 1: STRAWBERRY RIVER SAMPLE SITES (cont.)**

SITE ID	WATER BODY	County	WS	Samples				Latitude Longitude
	LOCATION (Sec., Twnshp, Rnge)			W	M	F	O	
WHI0143K	South Big Creek	Sharp		X				36 00 49.42N 91 29 28.62W
	Ar. Hwy 58, 1.0 mi. N. of Ar. Hwy. 115 (Sec 23, T16N, R5W)							
WHI0143J	South Big Creek	Lawrence		X				36 01 12.12N 91 20 09.88W
	Ar. Hwy. 117, 0.2 mi. S. of Ar. Hwy 115, (Sec. 20, T16N, R3W)							
WHI0143S	Cooper Creek	Lawrence		X				36 02 01.08N 91 18 26.08W
	Co. Rd. bridge, 0.8 mi. E. of Ar. Hwy 115, (Sec 16, T16N, R3W)							
UWRDC01	Reed's Creek	Lawrence		X				35 58 57.28N 91 20 12.68W
	Ar. Hwy 117, 2.8 mi. S. of Ar. Hwy 115 (Sec 32, T16N, R3W)							
UWSBR03	Strawberry River	Lawrence		X				35 55 06.11N 91 12 51.70W
	Ar. Hwy. 361 2.2 mi. E. of Ar. Hwy. 25 (Sec 30, T15N, R2W)							
WHI0143Q	Caney Creek	Lawrence		X				35 54 24.12N 91 17 25.76W
	Ar. Hwy 25 1.0 mi. S. of Saffell, (Sec 27, T15N, R3W)							
WHI0143R	Caney Creek	Lawrence		X				35 54 45.46N 91 15 02.18W
	Co. Rd. 346, 1.0 mi. S. of Ar. Hwy 361, (Sec 25, T15N, R3W)							

W	-	Water Sample Site	Sec.	-	Section Number
M	-	Macroinvertebrate Sample Site	Tnsp.	-	Township
F	-	Fish Community Sample Site	Rng.	-	Range
S	-	Sediment Sample Site	Co. Rd.	-	County Road
O	-	Diurnal Dissolved Oxygen Sample Site			