Amendment #1 to the

Cypress Creek Basin
Clean Rivers Program
FY 2004/2005
Quality Assurance Project Plan

Prepared by the Cypress Creek Basin Planning Agency
In Cooperation with the
Texas Commission on Environmental Quality (TCEQ)

Northeast Texas Municipal Water District
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5 March 2004

Justification: This document details the changes made to the Cypress Creek Basin Clean Rivers Program FY2004-2005 Quality Assurance Project Plan to update Appendix A (Task 3 Work Plan - Water Quality Monitoring), Appendix B (Sampling Process Design and Monitoring Schedule Plan), and Appendix D (Chain of Custody Forms).

Summary of Changes: The following information has been amended or added to reflect changes to the laboratory analysis methodology to two parameter units within the FY2004 Table A7.1 (Data Objectives for Field and Laboratory Measurements), task descriptions for sections 3.1, 3.2, 3.3 and 3.4 of the FY2004-2005 QAPP Task 3 Work Plan, the FY2004 monitoring schedule to update Segments 0401 and 0409, the systematic station monitoring sites map (Figure 2) and the conventional water sample parameter chain of custody forms.

Detail of Changes:

Table A7.1 - Data Objectives for Field and Laboratory Measurements

- Replace EPA Method 446.0 with EPA Method 445.0 for laboratory testing of chlorophyll-a (Storet Code 32211) and pheophytin (Storet Code 32218) found in Table A7.1 originally provided in the FY2004-2005 QAPP.

Appendix A - Task 3 Workplan Revision

- Minor changes were made to the task descriptions for Sections 3.1 and 3.2 to reflect the selection of two new systematic/intensive stations added as a result of TCEQ makeup and extra funding for FY2004-2005.
- TCEQ funding was approved for a targeted flow study and a bacterial water quality special study that originally were not planned for the Cypress Creek Basin during the FY2004-2005 contract period. Task descriptions were developed for each and are contained in Sections 3.3 (Targeted Monitoring) and 3.4 (Special Studies) of the revised work plan.

Appendix B Section 3.0, Monitoring Sites in Table B1.2 for Segment 0401

- Add 1metals-in-sediment sample to the Station 10283 FY2004 collection schedule that was inadvertently omitted in the FY2004-2005 QAPP.
- Add a total of 15 field measurements (12 coupled with bacteria and 3 together with the 24-Hr dissolved oxygen measurements) to the Station 10286 FY2004 collection schedule that was inadvertently omitted in the FY2004-2005 QAPP.
- Add 3 field measurements to the Station 10294 FY2004 collection schedule that was inadvertently omitted in the FY2004-2005 QAPP.
- Add 12 field measurements to the Station 14236 FY2004 collection schedule that was inadvertently omitted in the FY2004-2005 QAPP.
- Add 12 *E. coli* bacteria samples to the Station 15249 FY2004 collection schedule that was inadvertently omitted in the FY2004-2005 QAPP.
- Add one new intensive/systematic sampling station, Harrison Bayou at FM 134, approximately 4 miles south of Karnack, Texas (TCEQ Station ID No. 15508) to initiate additional FY2004 CRP sampling. Sample monitoring will include the quarterly collection of field and conventional water quality parameters, stream flow measurements and *E. coli* analysis. Total and dissolved metals in water will be sampled on an annual basis. Routine 24-hr dissolved oxygen (DO) measurements and biological collections of fish and benthic macroinvertebrates to assess the stream Aquatic Life Use (ALU) will be monitored twice and at a minimum of 30 days apart.

Appendix B Section 3.0, Monitoring Sites in Table B1.2 for Segment 0409

- Add 1 24-Hr. dissolved oxygen data set to the Station 17953 and Station 17954 FY2004 collection schedule that was inadvertently overlooked during the FY2003 collection period.

Appendix B Figure 2, Systematic Station Monitoring Sites

- Replace Figure 2 to update the addition of Station 15508 (Harrison Bayou at FM 134).
- Include Station 10256 that was inadvertently omitted on Figure 2 in the FY2004-2005 QAPP.

Appendix D - Chain of Custody Forms

- Change the EPA Method for chlorophyll-a and pheophytin laboratory analysis from 446.0 to 445.0 on the requested lab tests list shown on the four Conventional Water Sample Parameters Chain-of-Custody Forms for FRA6 (A and A1), PPA2 (A) and PPA7 (A).

Distribution: QAPP Amendments will be distributed to all personnel on the distribution list maintained by the Cypress Creek Basin Planning Agency.

These changes will be incorporated into the QAPP document and TCEQ, Northeast Texas Municipal Water District (NETMWD) and Paul Price Associates, Inc. will acknowledge and accept these changes by signing this amendment.

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Walt Sears, Jr., General Manager Date
Northeast Texas Municipal Water District
Cypress Creek Basin Planning Agency

_____

Paul Price, Project Manager Date
Paul Price Associates, Inc.

_____

Peggy Jones, Quality Assurance Officer Date
Paul Price Associates, Inc.

_____

David Thomas, Technical Coordinator Date
Paul Price Associates, Inc.

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Patricia Wise, Project Manager Date
Clean Rivers Program

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, Lead Quality Assurance Specialist, Clean Rivers Program — Date

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Laurie Curra, Project Quality Assurance Specialist, Clean Rivers Program — Date

Table A7.1 - Measurement Performance Specifications

PARAMETER	UNITS	MATRIX	METHOD	STORET	AWRL	Lab Reporting Limit (RL)	RECOVERY AT RLs	PRECISION (RPD of LCS/LCS dup)	BIAS (%Rec. of LCS)	Lab
FIELD PARAMETERS (cont'd)										
Flow measurement method	1-gage 2-electric 3-mechanical 4-weir/flume 5-doppler	Water	TCEQ SOP	89835	NA*	NA	NA	NA	NA	CRP Sampling Staff
Flow severity	1-no flow, 2-low, 3-normal, 4-flood, 5-high, 6-dry	Water	TCEQ SOP	01351	NA*	NA	NA	NA	NA	CRP Sampling Staff
Present Weather	1-clear 2-partly cloudy 3-cloudy 4-rain	NA	NA	89966	NA	NA	NA	NA	NA	CRP Sampling Staff
Wind Intensity	1-calm 2-slight 3-moderate 4-strong	NA	NA	89965	NA	NA	NA	NA	NA	CRP Sampling Staff
Water Surface	1-calm 2-ripples 3-waves	NA	NA	89968	NA	NA	NA	NA	NA	CRP Sampling Staff
CONVENTIONAL AND BACTERIOLOGICAL PARAMETERS										
TSS	mg/L	Water	EPA 160.2	00530	4	4	NA	20	NA	Ana-Lab
TDS, dried at 180 degrees C	mg/L	Water	EPA 160.1	70300	10	10	NA	20	NA	Ana-Lab
Sulfate	mg/L	Water	EPA 300.0	00945	10	10	75-125	20	80-120	Ana-Lab
Chloride	mg/L	Water	EPA 300.0	00940	10	10	75-125	20	80-120	Ana-Lab
Chlorophyll-a, spectrophotometric method	ug/L	Water	EPA 445.0	32211	5	5	75-125	20	NA	Ana-Lab
Pheophytin, spectrophotmetric method	ug/L	Water	EPA 445.0	32218	3	3	75-125	20	NA	Ana-Lab
E. coli, IDEXX Colilert (Bacteria)	MPN/100mL	Water	SM 9223-B	31699	1	1	NA	0.5***	NA	CRP Sampling Staff
Fecal coliform, membrane filtration	org/100mL	Water	SM 9222-D	31616	1	1	NA	0.5***	NA	CRP Sampling Staff
Ammonia-N, total	mg/L	Water	EPA 350.1	00610	0.02	0.02	75-125	20	80-120	Ana-Lab
Alkalinity, total	mg/L	Water	EPA 310.1	00410	10	10	NA	20	80-120	Ana-Lab
Hardness, total (as CaC03)	mg/L	Water	EPA 130.2	00900	5	5	NA	20	80-120	Ana-Lab
Nitrite-N	mg/L	Water	EPA 300.0	00615	0.02	0.02	75-125	20	80-120	Ana-Lab
Nitrate-N, total	mg/L	Water	EPA 300.0	00620	0.02	0.02	75-125	20	80-120	Ana-Lab
Total phosphate-P	mg/L	Water	EPA 365.2	00665	0.06	0.06	75-125	20	80-120	Ana-Lab

TASK 3: WATER QUALITY MONITORING

Objectives: Data collection efforts will focus on providing information to support:

- Temporal and spatial analysis of water quality
- Knowledge of water quality and flow for unclassified streams
- Evaluation and development of state-wide, regional, and site-specific water quality standards
- Permit criteria related to the flow status of receiving streams
- Priority monitoring
- Use attainability assessments
- Special studies

Task Description: The continued implementation of a basin-wide water quality monitoring plan is the primary focus for this biennium. The monitoring plan for Fiscal Year 2004-2005 includes fixed-station monitoring and systematic monitoring.

3.1 and 3.2 Monitoring Description

A minimum of 11 routine and systematic sites will be examined quarterly for field, flow (where applicable), conventional chemistry, and indicator bacteria. Diurnal studies that include pH, dissolved oxygen, conductivity and temperature will be conducted twice during the index period (between March 15 and October 15), with one during the critical period (between July 1 and September 30) at a minimum of 11 sites. Metals in water will be sampled once a year at 11 sites and metals in sediment once a year at 5 sites. Biological studies including habitat analysis, benthic studies and nekton counts will be conducted once during the index period and once during the critical period at 7 sites.

All monitoring procedures and methods will follow the guidelines prescribed in the Cypress Creek Basin QAPP and the TCEQ *Surface Water Quality Monitoring Procedures Manual, Volume 1*.

Progress Report

Each Progress Report will indicate the number of sampling events and the types of monitoring conducted, to include all types of monitoring.

Biological Data Reporting

Biological/habitat data reported to the TCEQ under an approved QAPP, will be summarized at the end of each fiscal year and submitted electronically and in hard copy using the Biological Data Reporting Packet outlined in Exhibit 3C in the CRP Guidance. Two copies of the report with color photos will be submitted.

3.3 Targeted Monitoring

The TCEQ selected and prioritized streams for flow studies for the permits listed below. Northeast Texas Municipal Water District (NETMWD) will measure stream flows monthly upstream of the selected permitted dischargers for at least 18 months. The information collected will be used to determine the seven day, 2 year low flow (7Q2) for the permittee's receiving streams. This 7Q2 will then be used in setting permit discharge limits.

This study will involve reconnaissance and site selection; monthly flow and field measurements, photographs, and field observations at each of the sites; and a report when the study has concluded. Flow will be measured and reported according to Exhibit 3D of the CRP Guidance and Reference Guide and the TCEQ *Surface Water Quality Monitoring Procedures Manual Volume 1*. Additionally, the NETMWD will provide monitoring updates with the CRP quarterly progress report.

Permit Holder	Permit Number
Robroy Industries - Texas, L.P.	**01052-000**
Gilmer Potteries, Inc.	**01361-000**
Anthony Forest Products Co., Inc.	**03811-000**
Ward Lumber Co, Inc.	**04189-000**
Ward Timber Co., Inc.	**04190-000**
City of Pittsburg – Dry Creek	**10250-001**
City of Pittsburg – Sparks Branch	**10250-001**

3.4 Special Studies

Tankersley Creek Bacterial Source Tracking Special Study – The results of the Tankersley Creek Indicator Bacteria Special Study conducted during FY2003 supported the current 303(d) listing of Tankersley Creek. Therefore, additional characterization of fecal coliform and *E. coli* counts of potential sources in the upper Tankersley Creek watershed is warranted. The key objective of the bacterial monitoring is to start delineating the importance of contributory non-point sources found in the tributaries of Tankersley Creek upstream of FM 127 compared with downstream locations at and downstream of the Southwest Wastewater Treatment Plant. Dry weather fecal and *E.coli* samples will be collected monthly from 12 locations over a 12-month period to characterize concentrations from particular land-use sources (e.g., litter application fields, on-site septic tanks, wastewater treatment plants) that potentially contribute to the ambient water bacterial levels. Characterization of the bacteria levels from these sources and attainment of the human contribution to these sources will provide added information in order to understand and manage bacteria levels in ambient waters.

Equipment: No new equipment will be needed to accomplish the work in this task.

Deliverables & Dues Dates: **September 1, 2003 through August 31, 2004**

Task 3.1 - Routine Monitoring & 3.2 - Systematic Monitoring

A. Conduct water quality monitoring and summarize activities in Progress Report - December 15, 2003; March 15 and June 15, 2004

B. Biological Data Reporting Packet - due dates coordinated with CRP Project Manager

Task 3.3 - Targeted Monitoring

A. Flow monitoring - measure flow and field data monthly, record field observations, and take photographs on 7 streams to support specific permits and report activities in Progress Reports- March 15 and June 15, 2004

Task 3.4 – Tankersley Creek Bacterial Source Tracking Special Study

A. Conduct water quality monitoring - measure temperature, dissolved oxygen, pH, conductivity and Secchi depth, collect monthly fecal coliform and *E. coli* samples, record field observations at 12 locations and provide report activities in Progress Reports- March 15 and June 15, 2004

September 1, 2004 through August 31, 2005

Task 3.1 - Routine Monitoring & 3.2 - Systematic Monitoring

A. Conduct water quality monitoring and summarize activities in Progress Report - September 15 and December 15, 2004; March 15 and June 15 and August 31, 2005

B. Biological Data Reporting Packet- August 31, 2005

Task 3.3 - Targeted Monitoring

A. Flow monitoring - measure flow and field data monthly, record field observations, and take photographs on 7 streams to support specific permits and report activities in Progress Reports- September 15 and December 15, 2004; March 15 and June 15 and August 31, 2005

B. Submit Final Report electronically on disk including summary tables and photographs- August 31, 2005.

Task 3.4 – Tankersley Creek Bacterial Source Tracking Special Study

A. Conduct water quality monitoring - measure temperature, dissolved oxygen, pH, conductivity and Secchi depth, collect monthly fecal coliform and *E. coli* samples, record field observations at 12 locations and provide report activities in Progress Reports- September 15 and December 15, 2004; March 15, June 15 and August 31, 2005.

B. Submit Special Study Draft Report electronically on disk including all key monitoring elements on July 30, 2005.

C. Submit Special Study Final Report electronically on disk including all key monitoring elements on August 31, 2005.

Table B1.2 Sample Design and Schedule, FY 2004 for the Cypress Creek Basin

Basin_id: 4
Segment: 0401 Caddo Lake

Region	Station ID	Site Description	Start Date	End Date	SC1/ SC2 *	Prog Code **	Monitoring Frequencies (per year)															
							TSWQS Bacteria	24hr DO	Flow	AqHab	Routine Benthics	Routine Nexton	TSWQS Metals Water	Organic Water	Metals Sed	Organic Sed	Conv	Amb Tox Wat	Amb Tox Sed	Bacteria	Fish Tissue	Field
5	10283	Caddo Lake mid-lake	9/1/03	8/31/04	NT/CL	RT	12								1					12		12
5	10286	Caddo Lake near mouth of Harrison Bayou	9/1/03	8/31/04	NT/CL	IS	12															12
5	10286	Caddo Lake near mouth of Harrison Bayou	9/1/03	8/31/04	NT/CL	DI		3														3
5	10294	Carter Lake in Caddo Lake	9/1/03	8/31/04	NT/CL	DI		3														3
5	14236	Clinton Lake in Caddo Lake	9/1/03	8/31/04	NT/CL	IS	12															12
5	14236	Clinton Lake in Caddo Lake	9/1/03	8/31/04	NT/CL	DI		3														
5	15249	Caddo Lake near shore at end of FM 2198	9/1/03	8/31/04	NT/CL	RT	12						2		1		4			12		12
5	15249	Caddo Lake near shore at end of FM 2198	9/1/03	8/31/04	NT/CL	DI		3														
5	15508	Harrison Bayou at FM 134	2/1/03	8/31/04	NT/CL	IS	4		4	2	2	2	1					4				4
5	15508	Harrison Bayou at FM 134	2/1/03	8/31/04	NT/CL	DI		2														

* NT=NETMWD, CL=Caddo Lake, FC=Franklin Count Water District, and PP=Paul Price Associates, Inc.
** RT=Routine water sampling baseline, DI=DIEL sampling, IS=Intensive Systematic, and SS=Special Study

Table B1.2 (Concluded)

Basin_id: 4
Segment: 0409 Little Cypress Bayou (Creek)

Region	Station ID	Site Description	Start Date	End Date	SC1/ SC2	Prog Code	Monitoring Frequencies (per year)															
					*	**	TSWQS Bacteria	24hr DO	Flow	AqHab	Routine Benthics	Routine Nexton	TSWQS Metals Water	Organic Water	Metals Sed	Organic Sed	Conv	Amb Tox Wat	Amb Tox Sed	Bacteria	Fish Tissue	Field
5	17954	South Lilly Creek at FM 2454	9/1/03	8/31/04	NT/CL	IS	4		4	2	2	2	1				4					4
5	17954	South Lilly Creek at FM 2454	9/1/03	8/31/04	NT/CL	DI		4														
5	17953	South Lilly Creek at Woodchuck Road	9/1/03	8/31/04	NT/CL	IS	4		4	2	2	2	1				4					4
5	17953	South Lilly Creek at Woodchuck Road	9/1/03	8/31/04	NT/CL	DI		4														
5	10335	Little Cypress Creek at SH 155	9/1/03	8/31/04	NT/CL	IS	4		4	2	2	2	1				4					4
5	10335	Little Cypress Creek at SH 155	9/1/03	8/31/04	NT/CL	DI		2														

* NT=NETMWD, CL=Caddo Lake, FC=Franklin Count Water District, and PP=Paul Price Associates, Inc.
** RT=Routine water sampling baseline, DI=DIEL sampling, IS=Intensive Systematic, and SS=Special Study

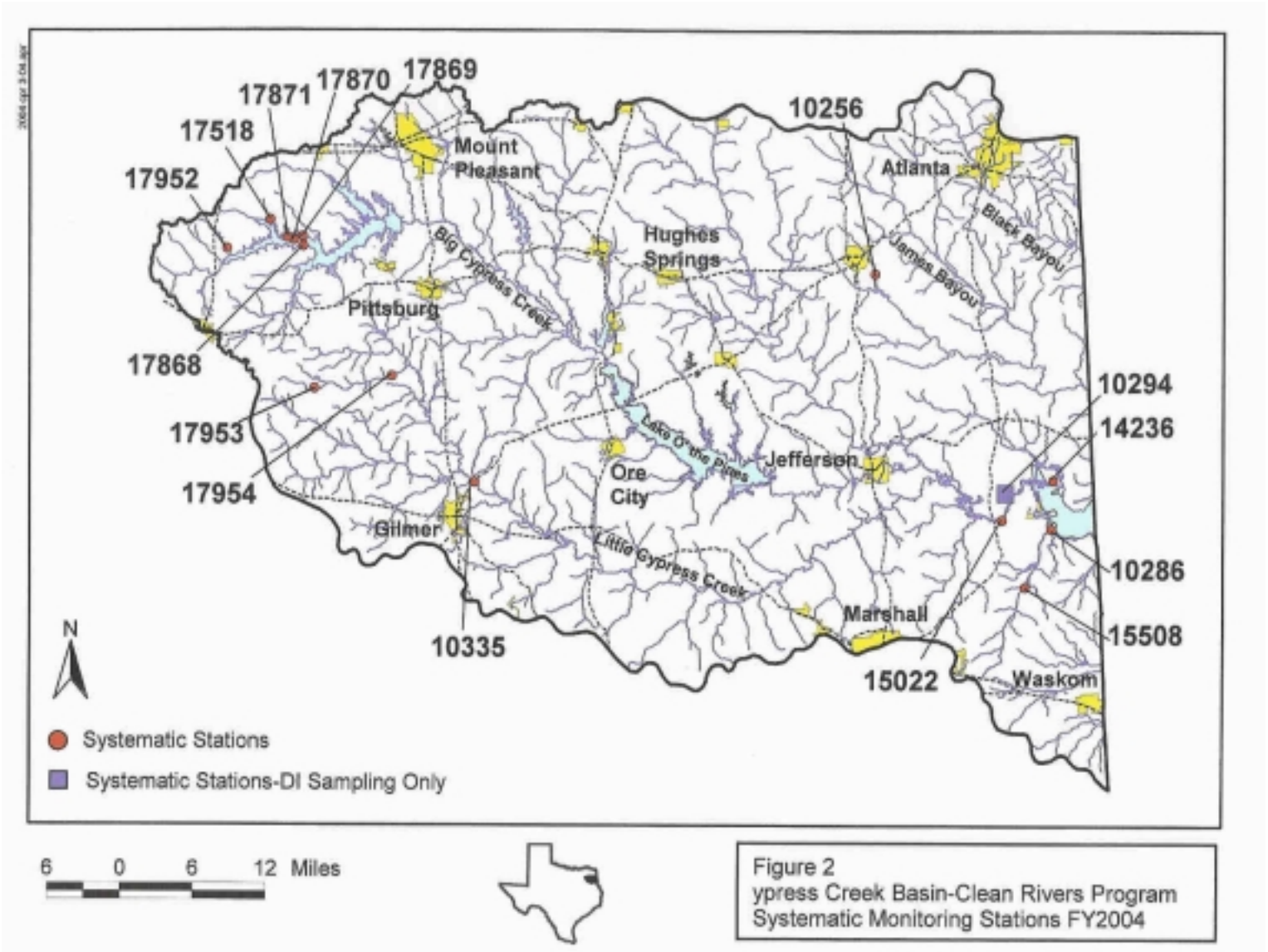

Figure 2
ypress Creek Basin-Clean Rivers Program
Systematic Monitoring Stations FY2004

Appendix D – Conventional Water Sample Parameters not including fecal coliform analysis FRA6 (A)

Appendix D – Conventional Water Sample Parameters not including fecal coliform analysis FRA6 (A)

Appendix D - Conventional Water Sample Parameters including fecal coliform analysis FRA6 (A1)

Appendix D - Conventional Water Sample Parameters including fecal coliform analysis FRA6 (A1)

Appendix D - Conventional Water Samples Parameters PPA2 (A)

Appendix D - Conventional Water Samples Parameters PPA2 (A)

Appendix D - Conventional Water Samples Parameters PPA7 (A)

Appendix D - Conventional Water Samples Parameters PPA7 (A)