

**ATRAZINE REMEDIATION IN THE LAKE LAVON
WATERSHED of GRAYSON COUNTY, TEXAS**



FINAL REPORT

**ATRAZINE REMEDIATION IN THE LAKE LAVON
WATERSHED of GRAYSON COUNTY, TEXAS**

under the

Clean Water Act, Section 319(h)

Cooperative Agreement No. 01-7

between the

Texas State Soil and Water Conservation Board

and the

**Upper Elm-Red
Soil and Water Conservation District**

In collaboration with

**Grayson County Extension Service
Texas Department of Agriculture
Natural Resources Conservation Service**

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Introduction

Atrazine, a growth inhibitor involving the photosynthetic process, is a herbicide commonly used by corn and grain sorghum growers to control weeds. The herbicide is considered unsafe by the Environmental Protection Agency when concentrations exceed the MCL for drinking water, which is 3 parts per billion. Its use in the Lake Lavon Watershed created a need for remediation.

The Lake Lavon Watershed is located on the East Fork of the Trinity River and encompasses land located in four counties, namely Collin, Fannin, Grayson and Hunt. This report is concerned with that part of the drainage area located in Grayson County and further identified as the North Texas Atrazine Project # 01-7, (District 524-Grayson).

The prevalent *Blackland Prairie* soils in the area support cultivated crops such as cereal grain, corn, grain sorghum and soybeans with the less productive land being utilized for hay and pasture, mainly for cattle, goats and horses. Weed control in corn and grain sorghum crops with the use of Atrazine created a level of the chemical sufficient for detection in the Lake Lavon drinking water supply. This non-point source pollution placed the watershed on the *State of Texas 303(d)* list.

Awareness of the situation was through contacts by Texas State Soil and Water Conservation Board representatives who met with the local board in 1999. The Upper Elm-Red SWCD sponsored an awareness meeting for corn and grain sorghum producers which was held at the Howe Community Center in Howe, Texas on February 16, 2000 at 6:00 p.m. Treatment for pollution abatement efforts in Grayson County was through a joint agreement between the Texas State Soil and Water Conservation Board and the Upper Elm-Red Soil and Water Conservation District. Funding was provided by EPA's Clean Water Act, 319 Grant Program.

The remediation project was via cost shared and non-cost Best Management Practices (BMPs). Cost shared practices were selected by the local board from TSSWCB Approved Practices List. Non-cost shared practices were those NRCS approved Practices needed in Resource Management System planning. Invitations to participate in the program were extended by letter and media releases to selected corn and grain sorghum producers and were offered on a non-discriminatory basis.

Scope of the Project

The Lake Lavon Watershed of Grayson County drains approximately 100,000 acres of land located in the southern part of the county. The boundary of the area can be described as follows: Starting at the southeast corner of the Grayson County line which is located on East County Line Road, just North of the West Shady Grove Church, on SH 121 about 3 miles southwest of Trenton; then west along the Grayson-Collin County line approximately 19 miles to a point southeast of Gunter; then generally northward along the highs separating the drainage areas approximately 10½ miles and reaching a point about 1 mile north of Dorchester; then generally eastward to Tom Bean on SH 11 and continuing generally along and south of SH 11 toward Whitewright; then continuing southeasterly to a point on the Grayson-Fannin County line approximately 2 miles south of US 69 on the East County Line Road; then south nearly 4 ½ miles to the point of beginning. (See maps, Appendix D). The project was set up for 10 water quality management plans utilizing \$100,000 to assist landowners in implementing water quality BMPs.

The duration of the project was initially set for three years. An extension of twelve months was requested and obtained. A cooperative agreement No.01-7 between the Texas State Soil and Water Conservation Board and The Upper Elm-Red Soil and water Conservation District became effective on July 1, 2001. This agreement stated authorization granted to the TSSWCB by the TEXAS AGRICULTURE CODE 201.026 to assist the United States Environmental Protection Agency under assistance.

Agreement No. 01-7 delineates the separate and mutual terms and responsibilities of the TSSWCB and The Upper Elm-Red SWCD. In summary the TSSWCB agreed to reimburse the Upper Elm-Red Soil and Water Conservation District for specified deliverables according to the terms of the agreement.

The Contract officially began on July 1, 2001 with an ending date originally set for March 31, 2004. A twelve-month extension was requested based on weather related problems with BMP implementation and USDA guidelines for sequence of the implementation of certain practices. This extension made the contract end on March 31, 2005. The contract will be fulfilled when final reimbursement is made by the TSSWCB for agreed-to deliverables submitted by the Upper Elm-Red SWCD.

Narrative of Accomplishments

The district was approached in 1999 by the TSSWCB and informed of the proposed atrazine abatement project. An informational meeting composed of local producers and representatives from TAEX-Grayson County, Texas Department of Agriculture, USDA-NRCS, TSSWCB and Upper Elm-Red SWCD directors was held on February 15, 2000 at Howe, Texas. The Upper Elm-Red SWCD voted unanimously to enter into contract with the TSSWCB. Upon signing, the contract became effective on June 16, 2001.

The project technician was hired and began work in December, 2001. Preparations for accomplishing the tasks were made by providing office space, buying supplies and equipment. Corn and grain sorghum producing farms and farm operators in the watershed were identified from FSA records.

The district directors approved parameters of the project by prioritizing crops and land use for BMP application. High, medium and low priority levels were set. Corn and grain sorghum producing cropland received top priority, other cropland with erosion problems received medium priority and abandoned cropland, pasture and hayed land receiving low priority. The total production unit was planned through the Resource Management System guidelines.

Funding limitations were imposed on each plan. The maximum dollar limit for a unit associated with a farm ID number was set at \$10,000. A limit of 75% funding level was attached to each funded practice based on the lower amount of the actual producer cost of the practice or the USDA approved average cost of the practice.

Using the guidelines and information above, land users in the watershed were notified of the project. Sign-up for the project began in February 2002 and were accepted in chronological order. This assured fair and impartial access to the allocated funds. After the initial sign-up funds were then made available on a chronological first-come-first-serve basis.

Implementation of practices began in FY 02 and continued through the last Quarter of the project ending in the Second Quarter FY-05. Initially, failed practices through no fault of the producer were ineligible for refunding. This was changed in cases where funds were available 512 practices.

Monthly reports to Upper Elm-Red SWCD board were made. Monthly time logs and expenditures for supplies were sent to the TSSWCB. Requests for reimbursement were made in a timely manner and the reimbursements were punctual. Quarterly progress reports were made. A final report of the project was presented for review by the TSSWCB and three electronically reproduced reports were submitted.

Project Accomplishments by Task

Final Report

North Texas Atrazine Remediation Project

TSSWCB # 01-7

Program Element	Subtasks	Project Activities	Deliverables Submitted	Completion Status
<i>TASK 1: Program Coordination & Management</i>	1.1 Hire Planner	Project planner started in December, 2001	Filed in SWCD minutes	100%
	1.2 Reports to Board	Oral and written reports to Board	Filed in SWCD minutes	100%
	1.3 Quarterly Reports	Progress and MBE/WBE Reports	Copies submitted to TSSWCB	100%
	1.4 CCE Management	Computers Installed For Use In Project Planning		100%
	1.5 Planner Training	a. 2 Training Sessions at TSSWCB, Temple b. Training Sessions from TSSWCB Regional, Dublin c. Ongoing Training From NRCS Personnel d. Formal Training on Windows XP and Microsoft Outlook Microsoft XL and Microsoft Word e. Prescribed Burn Training		100%
	1.6 Meetings	a. District board meetings b. NRCS team meetings	Filed in SWCD minutes Filed in SWCD minutes Filed in SWCD minutes	100% 100% 100%
	1.7 Contract Extension	Requested and received extension of contract #01-7 to 3/31/05	Letter submitted	100%
	1.8 Final Report	Draft submitted for checking. Three electronic copies made	3 copies submitted	100%
<i>TASK 2: Water Quality Education and Demonstration Of BMPs</i>	2.1 Formal Presentations	No formal presentations of record		
	2.2 Project Description	Individualized descriptions made to cooperators		

<p><i>TASK 3: Development & Implementation Of 10 WQMPs</i></p>	<p>3.1 WQMP Requests</p> <p>3.2 District Activities</p> <p>3.3 NRCS Programs</p> <p>3.4 Planning</p> <p>3.5 Mapping</p> <p>3.6 Cost Share Requests</p> <p>3.7 Status Reviews</p>	<p>42 requests for planning assistance received</p> <p>Assisted with District activities of seed sales Assisted with District windbreak tree sales Assisted with NRCS Programs as requested</p> <p>EQIP local work group committee member</p> <p>27 plans certified</p> <p>ArcView plan mapping and Garmin GPS practice certification</p> <p>Revisions to cost shared practices were approved by district</p> <p>Status Reviews completed on some plans</p>	<p>Copies submitted</p> <p>Copies submitted</p> <p>Copies submitted</p> <p>Copies submitted</p>	<p>270%</p> <p>100%</p> <p>100%</p>
<p><i>Task 4: Inventory of Land use Practices Im- plemented in The Lake Lavon Watershed</i></p>	<p>4.1 Planned Practices</p> <p>4.2 Implemented Practice</p>	<p>XL Spread sheet of planned practices will be added as a separate document.</p> <p>XL Spread sheet of implemented practices also added as a separate document</p>	<p>Copy submitted</p> <p>Copy submitted</p>	<p>100%</p> <p>100%</p>

APPENDIX A

NEWS ARTICLES

February 4, 2000

Corn and Milo Producers:

The Upper Elm-Red Soil and Water Conservation District (SWCD) will hold a meeting with a meal and Continuing Education Units (CEU's) for producers who either use or may use the herbicide Atrazine in their farming operations.

This is your invitation to attend the meeting on February 15, 2000 at 6:00 p.m. at the Howe Community Center in Howe, Texas. The meal will precede the meeting.

As you know, Atrazine has been detected in drinking water from several Texas lakes. With runoff from cropland draining into Lake Lavon, education of the Atrazine issue for our local producers is of utmost importance.

The Upper Elm-Red SWCD in an effort to assist in the continued availability of effective herbicides and to assist in the assurance of clean drinking water has developed an Atrazine action plan.

The plan includes a workshop concerning Atrazine use, methods to effectively prevent runoff from treated fields, and programs available to assist in the installation of best management practices.

Our speakers include Lee Munz, Project Manager, from the Texas State Soil and Water Conservation Board,

It is of utmost importance for Atrazine users to attend this educational workshop.

Please mark your calendars to attend. In addition to a fine meal and a program designed to help producers prevent or eliminate a potential environmental problem you will receive two (2) CEU hours (1 laws/regs and 1 general) toward your private applicator's license.

For additional information or to **confirm your attendance** contact Steve Uselton at 903-892-4525 extension 3 or come by the SWCD office, 406B. West Lamar, Sherman, Texas.

UNITED STATES DEPARTMENT OF AGRICULTURE
FARM SERVICE AGENCY (FSA)
FSA NEWSLETTER

Grayson County Texas

December - 2001

Grayson County Office, 406A W. Lamar St., Sherman, TX 75090 Phone (903) 892-4525 FAX (903) 868-0494

2002 FARM PROGRAM PAYMENTS -- All persons sharing in "Production Flexibility Contracts" (PFC) under the 7-year AMTA farm program have been mailed letters concerning payments for 2002. Payments of 100% or two 50% payments can be issued in any month up to August 1, 2002. If no payment is requested, the total final payment will be issued not later than September 30, 2002. **Payments can be issued ONLY if the farm PFC contract has been updated and signed.** Please contact this office to arrange an appointment for updating your contracts.

FARM PROGRAM CONTRACT CHANGES -- Those persons associated with a contract filed under the 7-year AMTA farm program (*Production Flexibility Contracts*) are required to report any changes such as change of ownership, operator, shares or non-ag use in regard to the farm under contract. Failure to report changes could result in the loss of annual payments or refunds.

LOAN DEFICIENCY PAYMENTS -- Due to continuing low prices, Loan Deficiency Payments ("*LDP's*", "*POP*" payment), may be available to grain, cotton and soybean producers. (The commodity must have been produced on a farm with a PFC contract and an acreage report filed.) Under this option, producers forgo a Marketing Assistance Loan and direct payments are made for actual harvested and stored production. The payment is based on daily market rates received at the FSA office. If this daily market rate (*less a specific county differential amount*) falls below the county Marketing Assistance Loan rate for the crop for the county where the crop is stored, then the LDP payment is in effect. To qualify, producers must file an application for an LDP payment and provide production evidence to show where the crop is stored. Production evidence must identify the producer, the crop year, the farm where the crop was produced, gross and net bushels (*bales & lbs. for cotton*) and the crop name. Only crops in which a producer has "*beneficial interest*" is eligible. In general, this means that a producer must still own and control the crop. A crop which has been sold or the producer has lost control of is not eligible. If the crop is farm stored, it must be measured. (*There is a cost for this measurement*.) The same "*beneficial interest*" requirements still apply. Since LDP payment rates can vary daily, the rate in effect on the date the application is filed at the FSA office (*with all required signatures*) is used.

ATRAZINE REMEDIATION PROJECT -- The Upper Elm-Red Soil and Water Conservation District in conjunction with the Texas State Soil and Water Conservation Board in implementing a new project for the watershed above Lake Lavon. The project will primarily be for corn and grain sorghum growers who use Atrazine on their fields in this watershed. The producers who qualify for the program can earn up to \$10,000.00 in cost-share money to implement practices such as grass planting, grass filter strips, grassed waterways, terraces, and in some cases ponds. These practices will be used to help filter the sediment that is going into Lake Lavon. Producers who are interested in this program should contact the Sherman office of the Natural Resources Conservation Office at (903) 892-4525. **En. 3**

Upper Elm-Red Soil and Water Conservation District
Rt. 2 Box 34-b, Gainesville, TX 76240

January 14, 2005

To: 319 Program Plan-Holder Addressed

From: Johnnie J. Kay, Project Technician

Subject: Water Quality Management Plans

The Atrazine Remediation Project # 01-7 which authorizes your water quality management plan will end Effective March 31, 2005. Your planned practices will remain in effect for their planned duration of 5 or 10 years as denoted in your plan. However, all cost shared practices will need to be completed early in March to allow time for processing your payments.

The Upper Elm-Red Soil and Water Conservation District has employed me to make a final report on the project. A review of your plan will be made for an assessment of what has been done, and what needs to be done for its completion. A visit to your farm will be necessary. I would like to take some pictures for records.

You can reach me at the USDA-NRCS, Sherman Field Office, 406 B West Lamar, Sherman, Texas 75090 and by telephone at 903. 892.4525 Ext. 3.

I look forward to working with you on this project to conserve soil and water quality.

APPENDIX B
Photographs of Project

Board of Directors



Directors of the Upper Elm-Red Soil and Water Conservation District # 524 are taking care of business. Present at the regular monthly meeting in Gainesville on March 11, 2005 and seated clockwise are Donnie Martinek, member; Charles Bayer, secretary; Carolann Corado, manager; William Hermes, chairman; James K. Brite, Jr., vice chairman; William T. Meador, member and Gary Conner, USDA-NRCS



Cropland that is planted to improved or native grasses is better protected against erosion. The practice improves water quality through a long-range plan which does not include cultivating the soil on a regular basis. This will promote a natural process of restructuring the soil by the plant roots. The planting patterns on this field afford adequate protection against chemical runoff. Pasture and Hay planting (512) was planned on 929 acres in the project.



FORAGE HARVEST MANAGEMENT WAS PLANNED ON 419 ACRES OF HAYLAND



Field borders were installed to prevent sediment from leaving the field and entering nearby streams. In this project, 12,650 feet of field borders were planned.





Seasonal Crop Residue management is essential for reducing run-off between crops. A total of 945 acres of Residue Management and 883 Acres of Conservation Tillage were planned for this project.



This grassed waterway prevents a gully from forming along the steep slope between this county road and cultivated cropland. Residue Management is also an applied practice on the cropland.



One of the 16 ponds planned for the project.



Seven plans involved Cross Fencing for grazing Management. A total of 10,875 feet of fencing was planned to provide for proper grazing.





Garmin GPS with a DGPS Beacon Receiver electronics were utilized in Performance Certification of practices. Acreage and/or length measurement is calculated in ArcView with Customer Service Toolkit. A waterway is being measured in this photo.



Contour Buffer strips of grass provide effective protection from soil erosion. The fibrous grass roots strengthen the strip and trap sediments. Nine hundred and fifty- six acres of contour were planned in this project.





Seasonal crop residue management on this field gives added protection between crops in reducing sediment runoff.



Seedbed preparation in the fall and planting a cool season crop assures readiness for sprigging in the spring. After application of Roundup, this fifty foot field border can be sprigged with relatively little soil loss.



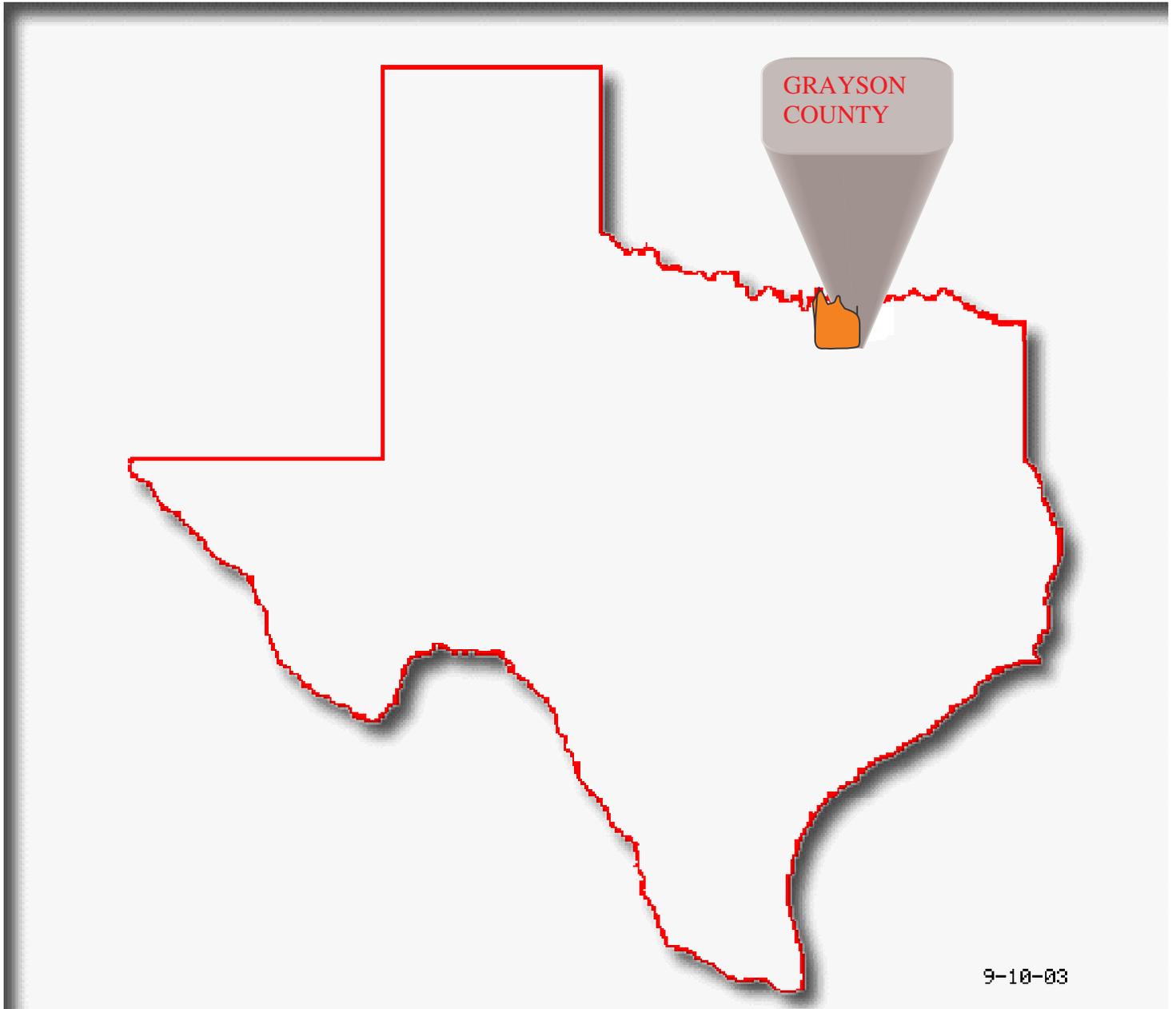
Pasture and Hay Planting (929 acres) with Forage Harvest Management (419 acres), Prescribed Grazing (1781 acres) and Pest management (3329 acres) Nutrient Management (3276 acres) along with the necessary perimeter and cross fencing assures that over 3% of the one hundred thousand acres of total land mass in the project area is protected from Non-point Source Pollution.



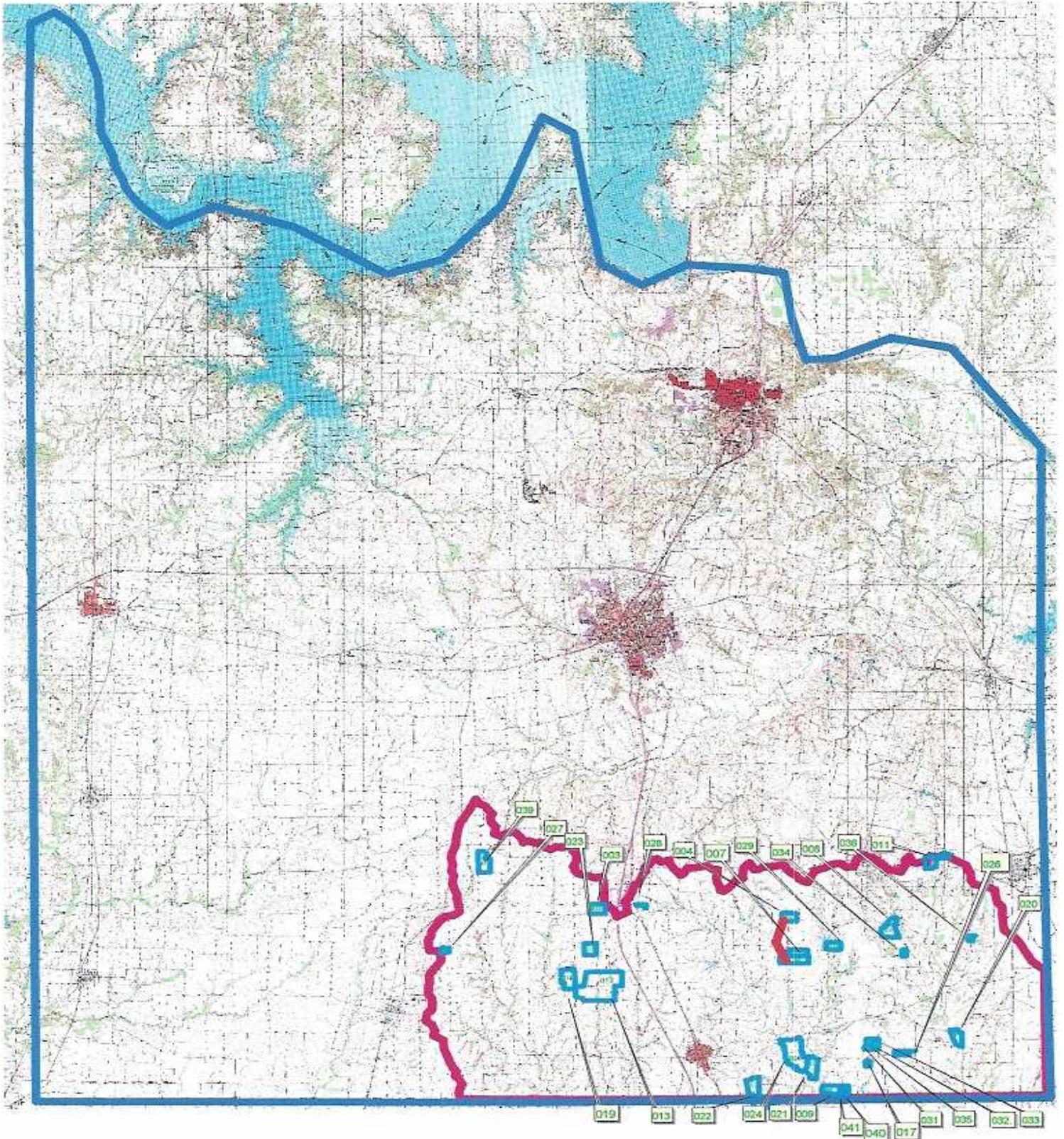
APPENDIX C

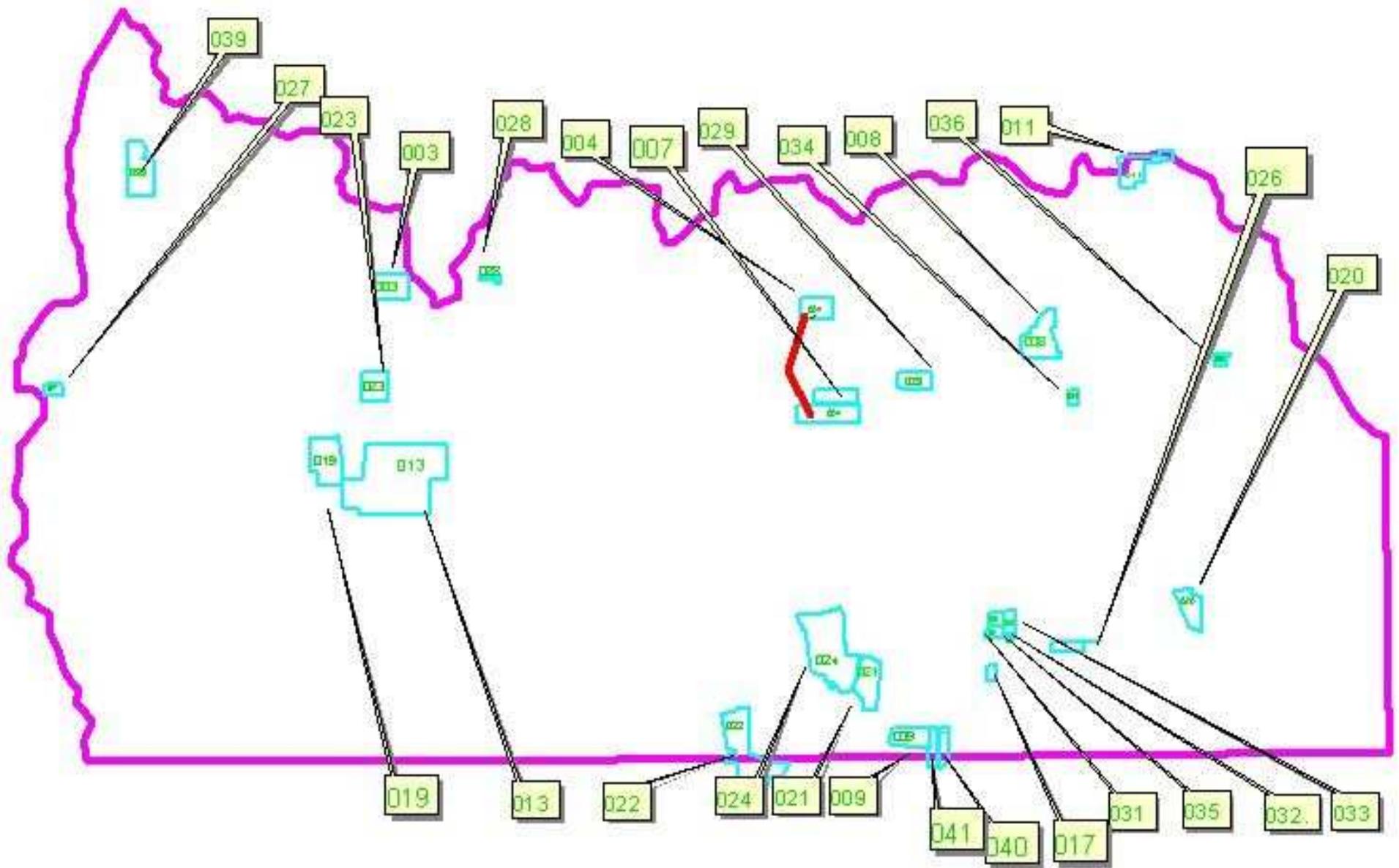
MAPS

LOCATION OF PROJECT



Project Location within Grayson County, Texas





Project Outline on Plain Background with WQMPs Identified via Callouts

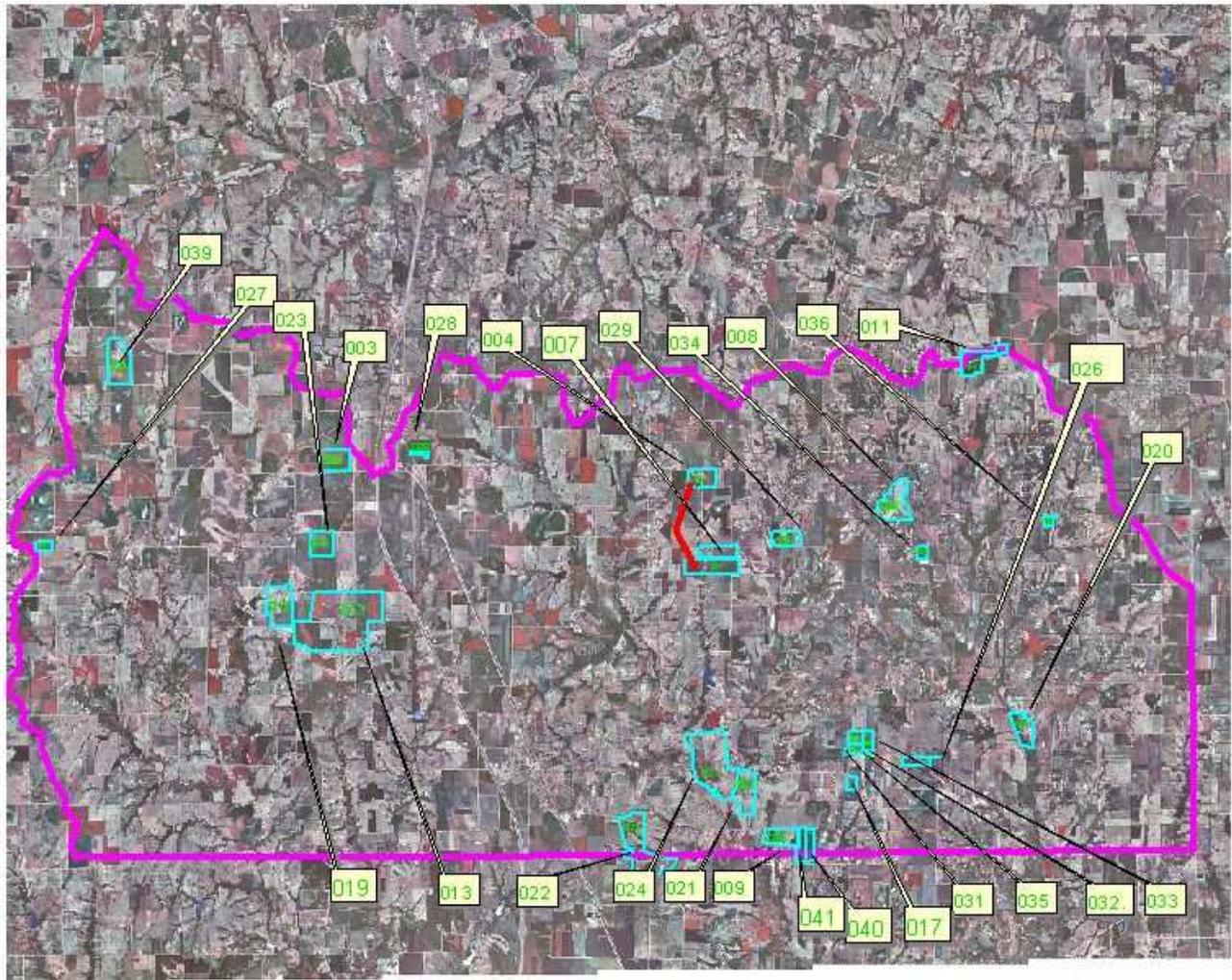
NORTH TEXAS ATRAZINE REMEDIATION PROJECT

Atrazine Project # 01-7

Sherman, Texas
Date: 02/09/2005

27 WQMP's

Johnnie J. Kay
Upper Elm-Red SWCD



Legend

-  WQMP's
-  Boundary Map



APPENDIX D

XL SPREAD SHEET OF PRACTICES

INCLUDED AS A SEPARATE DOCUMENT