

REPORT 95-10

LEAK DETECTION / LOCATION SURVEY REPORT

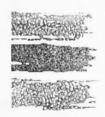
FOR

EAST MEDINA COUNTY

WATER SUPPLY CORPORATION

AUGUST 10, 1995 - OCTOBER 10, 1995





EDWARDS UNDERGROUND WATER DISTRICT

6.25-7.5

November 14, 1995

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RJCK ILLGNER GENERAL MANAGER Mr. Glen H. Stewart Manager East Medina County Water Supply Corporation Rt. 1 Box 259 B Devine, Texas 78016

Dear Mr. Stewart:

We are pleased to submit this final report of the leak detection survey performed on parts of the East Medina County Water Supply Corporation's (EMCWSC) water distribution system. This report lists findings by separate categories for your convenience.

The Edwards Underground Water District (District) appreciates the cooperation and assistance you have provided during the survey. The District hopes that the information provided herein will be beneficial to the corporation in identifying and targeting areas of actual water loss and potential water loss.

This survey has demonstrated the water saving potential of the Leak Detection Program. Maintaining the best possible program is vital in order to continue the successes realized. For this reason, the District is soliciting your comments, both positive and negative, and any suggestions you may have on how to improve our program.

Please respond to this request candidly, as the District cannot improve on deficiencies or support positive measures without the knowledge of such conditions.

Mr. Glen Stewart November 14, 1995 - Page 2

The Edwards Underground Water District appreciates your water conservation efforts and sincerely regrets any inconvenience the abrupt termination of this survey may have caused. The District hopes to have the opportunity to complete your leak detection/location survey sometime in the future. Should you require additional information regarding this report or have any water related questions, please do not hesitate to call.

Sincerely,

Mark L. McGinnis Leak Detection Technician I

MLM:JRS/ bmc Enclosures

002jrs

James R. Shipley

Leak Detection Technician II

LEAK DETECTION / LOCATION SURVEY REPORT FOR EAST MEDINA COUNTY WATER SUPPLY CORPORATION

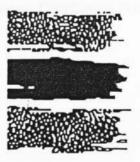
August 10, 1995 -- October 10, 1995

By

Mark L. McGinnis and James R. Shipley of the

EDWARDS UNDERGROUND WATER DISTRICT

Division of Planning and Environmental Management Leak Detection/Location Program November, 1995



Edwards Underground Water District 1615 N. St. Marys P. O. Box 15830 San Antonio, Texas 78212-9030 210-222-2204

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ENCLOSURES TO REPORT

A. Revised Master Water System Distribution Plats

SUMMARY

On February 17, 1995, the Edwards Underground Water District (EUWD) received a request from the East Medina County Water Supply Corporation (EMCWSC) to perform a leak detection/ location survey on its water distribution system. A pre-survey conference was held at the EMCWSC office to discuss the work to be performed. It was agreed that EUWD would perform sonic leak detection on all available access points and computerized leak location as needed. A final report, including any unusual system condition found and an updated master water plat would be submitted to East Medina County Water Supply Corporation, by EUWD at the conclusion of the survey.

Mark L McGinnis of EUWD began the survey on August 10, 1995, and the survey was terminated on October 10, 1995. Over the course of the survey, a total of 287 access points were surveyed including 219 customer service connections, 240 valves, and 34 other access points covering 12.74 miles of distribution main.

10 utility side leaks and 28 customer side leaks were detected for a total of 38 leaks. The utility side leaks included 2 meter box leaks, 7 main leaks, and 1 service leak. An estimated 1,730 gallons of water per day has been saved by the repair of the 10 utility side leaks. The leaks discovered during the survey range from 720 gallons per day to small meter box leaks.

As part of the survey, 6 services and 17 valves of various types were located that were not shown on the master water plats. EUWD surveyors were unable to survey 13 valves and 3 services shown on the master water plats.

DISCUSSION

A. Total Access Points Surveyed: 287

The following is an outline of the various access points used during the survey:

Customer service connections: 219
 Main valves: 54
 Fire hydrants: 0
 Others: 14

B. Total Miles of Distribution Main Surveyed: 12.74

C. Total Leaks Detected: 38

Service line and fire hydrant leaks were located by acoustic leak detection or by visual inspection. Meter box leaks and customer side leaks were located through house to house surveying.

1. Meter Box: 2

Perry service on Lower La Coste Road, Plat 7 Payne service on Trappe Road, Plat 7

2. Main: 7

One Horse Ranch Road across from Mc Milliam, Plat 7

F.M. 463 - Fahrenhold, Plat 7

F.M. 463 - Gates - In field, Plat 7

F.M. 463 - Gates - In field, Plat 7

F.M.463, Plat 13

C.R. 570 across from Smith, Plat 6

Lower LaCoste Road, Plat 20

3. Service: 1

Rihn Lane, Plat 20

4. Customer Side: 28

Addresses of customer side leaks were given to the utility at the end of the survey.

D. Total Estimated Water Saved by Repair of Detected Utility Side Leaks in Gallons Per Day: 1,730

Leakage estimates for service lines and mains are based on hole size and system pressure in pressure per square inch. This information was furnished by East Medina personnel when EUWD was not on site at the time of repair.

Meter Box: 18.2 Mains: 1,685.5 Service: 25.9

Customer leaks were generally small. No attempt was made to estimate this leakage. Customers were notified by doortag or in person when possible or will be notified by East Medina personnel.

E. Field Survey Findings Vs. Master Water Plats.

1. Water System Access Points That Could Not Be Located: 16

Main Line Valves: 13

Plat #	Location	# of Valves
6	C.R. 570 south of Southern Pacific Railroad tracks	1
6	Francisco Road	1
6	C.R. 570 at 205.5	2
13	C.R. 679 approximately 1,400' west of F.M. 471	1
13	C.R. 679 approximately 700' west of F.M. 471	1
14	C.R. 5714 at F.M. 714	2
14	F.M.471 southwest of C.R. 5702	1
19	C.R. 583 at Trappe Road	2
19	Trappe Road at Coal Mine Road	2

Services: 3

14	Service for Garza west of F.M. 471
18	C.R. 582 service between Verstuyft and Mangold
20	Service for Shattuck

Suspected locations were surveyed by EUWD with a ferromagnetic detector, when practical to locate these items. When successful, these locations were marked. It is conceivable that additional valves remain unlocated within the system.

2. Access Points Added To Plats: 23

Valve: 8

Plat #	Location	# of Valves
7	F.M. 463 approximately 1,800' east of C.R. 570	1
13	C.R. 679 at F.M. 471	1
13	C.R. 679 approximately 1,600' west of F.M. 471	1
13	C.R. 679 approximately 2,300' west of F.M. 471	1
14	F.M.471 southwest of C.R. 5702	1
19	C.R. 582 at C.R. 583	1
20	Lower La Coste Road pressure station	2

Blow Off Valves: 9

13	C.R. 679 approximately 2,300' west of F.M. 471
1.2	Nam Change Pagamoir

- 13 Near Chacon Reservoir
- 18 Fisher house west of F.M. 2790
- 18 C.R. 582
- 19 C.R. 582 approximately 3,800' north of C.R. 582
- 19 North of Trappe Road
- 20 C.R. 570
- 20 West of Lower LaCoste Road
- 20 Road name unknown

Services: 6

6 On 1. 5" main west of pla	nt # 1
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- 14 F.M. 471 between C.R. 5714 and C.R. 5702
- 14 West of F.M. 471
- 18 C.R. 582 west of Naeglin service
- 19 C.R. 582 approximately 500' northeast of C.R. 583
- North of Lower LaCoste Road and west of C.R. 570

F. Revisions To Master Water System Distribution Plats Included With This Report

Sections of plats 6, 7, 13, 14, 18, 19, 20, and 26B were used in this survey. A key map has been provided for your convenience. All items labeled on the original plat as removed, deleted, or not installed, have been left off the revised plats. Only mains and services highlighted in yellow were surveyed.

Abbreviations Used on the Revised Distribution System Plats:

UTL -- Unable To Locate

NC -- Needs Cleaning

RTG -- Raise To Grade

ARV -- Air Relief Valve

PRV -- Pressure Regulating Valve

BFP -- Back Flow Preventor

NR -- Needs Repair

FHWV -- Fire Hydrant With Valve

FH -- Fire Hydrant Without Valve

All mains were surveyed from all available access points.

All valves located were surveyed. When direct contact could not be made, a probe rod was used.

Any item circled and highlighted in blue on the plats indicates that it was added, could not be located, or needs repair. All items are labeled on the plats.

All mains, water services, and valves added to the plats are for access point accounting. The location and placement of these items on the plats are intended to indicate what was actually found during the field survey. Placement of main valves on the plat is the surveyor's <u>best guess</u> of what they control. Every effort was made to ensure the accuracy of these plats, but EUWD does not guarantee their accuracy.

RECOMMENDATIONS AND COMMENTS

- I. Placement of well flow meters should be checked against meter manufacturer specifications for recommended straight pipe lengths both upstream and downstream of meter. All meters have limitations due to piping configurations. An improperly located or installed meter will degrade the inherent specified accuracy below an acceptable level. Meters installed in close proximity to a bend, valve, or other fitting that is likely to disturb the flow conditions at the meter could invalidate the manufactures meter calibration. EUWD recommends that all well meters be tested in place yearly for accuracy.
- II. Review the existing water distribution system and planned water system improvements to ensure sufficient access points are in place to facilitate future leak detection/ location surveys.
- III. Consider ductile iron pipe for the primary main line material used for new installation and main replacement. As the production cost of water increase, the need for routine systemwide leak detection surveys will also increase. Leak sounds generated in metallic pipe are louder and have a tendency to travel further than those developed in non-metallic pipe. Ductile iron pipe has a proven history of long service life and its sound carrying characteristics for leak detection are far superior to any other type of pipe material.

Your efforts and timely repair of the leaks discovered in this survey have saved a significant amount of precious water. Our thanks to all the staff for your efforts in helping to conserve the Edwards Aquifer.

Sincerely,

Mark L. McGinnis Leak Detection Technician I James R. Shipley Leak Detection Technician II

James R Shiples

MLM:JRS/bmc 002a.jrs