

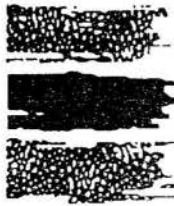
EDWARDS UNDERGROUND
WATER DISTRICT

Report 93-02

**LEAK DETECTION SURVEY REPORT
FOR
THE CITY OF UVALDE**

January 11, 1993 - April 26, 1993





EDWARDS UNDERGROUND
WATER DISTRICT

5.4-5

July 15, 1993

Mayor Bill McWhorter
City of Uvalde
P. O. Box 799
Uvalde, Texas 78801

Dear Mayor McWhorter:

We are pleased to submit this final report of the leak detection survey performed on the City of Uvalde water system. A summary of findings is reported in separate categories for your convenience.

The Edwards Underground Water District (District) appreciates the cooperation and assistance you have provided during the leak detection survey. Special thanks to Mr. James Thurman and Mr. Warren Fulcher for their attention and patience during the survey. The District hopes that the information provided herein will be beneficial to the City in identifying and targeting areas of water loss and potential loss.

The District would appreciate the opportunity to recheck the remaining 8 leak sites after repairs are completed.

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 that have been 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.

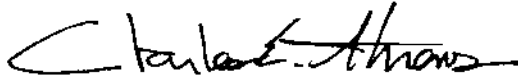
Please respond to this request candidly, as the District cannot improve on deficiencies or support positive measures without the knowledge of such conditions.

Enclosed is a water audit form. The District requests that this form be completed and returned to the District sixty days after all detected leaks have been repaired. This information will assist the District in our continued assessment of the Leak Detection Program.

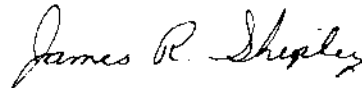
Mayor Bill McWhorter
July 15, 1993 - Page 2

Should you require additional information regarding this report or have any water related questions, please do not hesitate to call.

Sincerely,



Charles E. Ahrens
Water Resources Planner III



James R. Shipley
Leak Detection Technician II

CEA:JRS/bmc

Enclosures

cc: Mr. James Thurmond, City Manager
Mr. Warren Fulcher, Water Superintendent

001jrs



EDWARDS UNDERGROUND
WATER DISTRICT

**LEAK DETECTION SURVEY REPORT
FOR
THE CITY OF UVALDE, TEXAS
JANUARY 11, 1993 - APRIL 26, 1993**

PREPARED BY:

**Division of Planning and Environmental Management
Leak Detection Program**

June, 1993

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- N. Slow Registering Meters

ENCLOSURES TO REPORT

- A. Revised Master Water System Distribution Plats
- B. Blank Follow-up Water Audit Forms

SUMMARY

On October 5, 1992, the Edwards Underground Water District (EUWD) received a completed application form from the City of Uvalde requesting a leak detection/location survey on its water distribution system. A pre-survey conference was held October 22, 1992 at the City of Uvalde City Hall to discuss the work to be performed. It was agreed that EUWD would perform sonic leak detection on all available access points, computerized leak location as needed, record any unusual system conditions found, and submit to the City a revised master water plat with the final report.

Mark L. McGinnis of EUWD began the survey on January 11, 1993, and the survey was concluded on April 26, 1993. Over the course of the survey, EUWD surveyed a total of 6,345 access points including 5,091 customer service connections, 361 fire hydrants, 884 main line valves, and 9 other access points covering 89.89 miles of distribution mains. Computer leak sound correlation was performed on 2 locations.

EUWD technicians detected a total of 362 leaks. This total included 30 meter box leaks, 9 fire hydrant leaks, 9 service line leaks, 3 main leaks, 2 valve leaks, and 309 customer side leaks. EUWD estimates 17,525 gallons of water per day has been saved by the repair of 45 detected leaks as of April 26, 1993. The leaks discovered during the survey range from 2,160 gallons per day to numerous small meter box leaks.

As part of the survey, EUWD located 173 main line valves, 33 fire hydrants, and 20.2 miles of distribution main not shown on the master water plats. EUWD staff was unable to locate 97 main line valves and 17 customer service connections. An additional 112 valve stacks need cleaning and/or repair. EUWD noted 100 water meters that were not registering accurately.

JRS/bmc
001jrs

DISCUSSION

- A. Total Access Points Surveyed..... 6,345

The following number of access points were used during the survey:

1. Customer service connections: 5,091
2. Main Valves: 884
3. Fire Hydrants: 361
4. Others: 9

- B. Total Miles of Distribution Main Surveyed..... 89.89

- C. Total Number of Suspected Leak Sounds Rechecked..... 729

- D. Total Leaks Detected..... 362

Main line, service line, fire hydrant, and valve leaks were located by computer correlation of leak sounds or by visual inspection. Meter box leaks and customer side leaks were located through house to house surveying.

- E. Total Estimated Water Saved by Repair of Detected Leaks In Gallons Per Day as of April 26, 1993..... 17,525 GPD

Leakage estimates for main line, service line, fire hydrants, and valve leaks are based on hole size and system pressure in P.S.I.. This information was furnished by the City of Uvalde personnel when EUWD was not on site at the time of repair. Totals are only recorded for leaks repaired as of April 26, 1993 with leakage estimates.

EUWD would appreciate a list of leakage estimates for all detected leaks repaired after April 26, 1993 for our records.

1. Meter Box Leaks..... 30

Leakage estimates of repaired leaks..... 463 GPD
Leaks repaired..... 30

A list of these leaks is included in Appendix C.

2. Fire Hydrant Leaks..... 9

Some fire hydrants may be reseated by flushing, others will need repair or replacement.

Leakage estimate of repaired hydrants..... 820 GPD
Fire hydrants repaired..... 2
Leaking hydrants to be repaired..... 7

A list of these fire hydrants is included in Appendix B.

3.	Service Line Leaks.....	9
	Leakage estimates of repaired services.....	5,632 GPD
	Service leaks repaired.....	9
	A list of service leaks is included in Appendix A.	
4.	Main Line Leaks.....	3
	Leakage estimates of repaired mains.....	9,864 GPD
	Main leaks to be repaired.....	1
	A list of main line leaks is included in Appendix D.	
5.	Main Valve Leaks.....	2
	Leakage estimates of repaired leaks.....	746 GPD
	Valve leaks repaired.....	2
	A list of these leaks is included in Appendix E.	
6.	Customer Side Leaks.....	309
	Customer side leaks were generally small. EUWD was unable to estimate this leakage. Many meters are registering slow, and are not registering this usage. Customers were notified by door tag or in person when possible or will be notified by City of Uvalde personnel.	
	A list of these leaks is included in Appendix F.	
F.	Slow Water Meters.....	100
	During house to house surveying, water use was detected on these services. Meters were not registering the flow or were observed sticking and/or jumping. Many additional meters had sound of dragging or wear. These meters were not listed.	
	A list of slow meters is included in Appendix N.	
G.	General Maintenance Needed	
1.	Valve Stacks Needing Repair.....	89
	The majority of these valve stacks need to be raised to grade.	
	A list of these stacks is included in Appendix J.	
2.	Valve Stacks Needing Cleaning.....	23
	The condition of these valve stacks make them unusable at this time.	
	A list of these stacks is included in Appendix K.	

3. Curb Stops Not Holding..... 17

These curb stops are passing water in the closed position, but not leaking.

A list of these curb stops is included in Appendix L.

4. Curb Stops Partially Open..... 49

EUWD recommends that these stops be checked to determine if they will hold in the closed position.

A list of these curb stops is included in Appendix M.

5. Valves that could not be surveyed..... 97

Suspected locations were surveyed by EUWD with a ferromagnetic detector to locate buried main valves. When successful, these locations were marked. It is conceivable that additional valves remain unlocated within the system. All valve box lids located were painted blue.

A list of these valves is included in Appendix H.

6. Services that could not be surveyed..... 16

Various reasons prevented the surveying of these services: locked gates, dogs, under piles of trash or brush, under parked vehicles, or unable to locate, etc.

A list of these services is included in Appendix H.

The EUWD technicians consider the conditions recorded in discussion section G of this report to be normal system wear and tear. Most of these conditions are beyond the control of the utility. Street resurfacing, adjustment of street or right-of-way grades, heavy rains, customer and plumbers operating curb stops, etc. The consensus of the EUWD technicians is the overall operation and maintenance of the City of Uvalde system is excellent.

H. Survey Finding vs. Master Water Plat

1. Fire hydrants, main line valves, and feet of distribution system main located but not shown on Master Water Plats.

- A. Fire Hydrants: 33
- B. Main Line Valves: 169
- C. Blow Off Valves: 3
- D. Air Relief Valves: 1
- E. Main Footage: 106,750'

A list of these items is included in Appendix G.

I. Revised Master Water Plats included with this report.

1. 31 plats were hand drawn by EUWD using the City of Uvalde boundary map as a guide. The water distribution system was divided into 77 separate plats. A map key is provided for your convenience. ("As built" plans were used where available). Long distance distribution and transmission mains were field measured from access point to access point. Main size and type of material was furnished by City of Uvalde personnel.

2. Codes

Yellow indicates mains and services were surveyed from access points only.

Blue indicates mains and service were surveyed with a ground microphone and from access points.

3. Abbreviations Used on Revised Master Plats:

UTL - Unable to Locate
UTS - Unable to Survey
NC - Needs Cleaning
RTG - Raise to Grade
CCNH - Curb Cock not Holding
FHVV - Fire Hydrant with Valve
FH - Fire Hydrant Without Valve
ARV - Air Relief Valve
PCV - Pressure Control Valve

4. All mains were surveyed from all available access points. When the spacing of access points was too great to survey properly, a ground microphone was used in combination.
5. All valves located were surveyed. When direct contact could not be made on a valve, a probe rod was used.
6. Fire hydrants labeled on the plat as fire hydrants without lead valves are hydrants where the lead valve could not be located or does not exist.
7. Any item circled on the plat indicates that it was added, could not be located, or needs repair.
8. All mains, fire hydrants, water services, blow-offs, and main line valves hand drawn on the plats, are for access point accounting. The location and placement of these items on the plat is intended to indicate what was actually found in the field survey. Placement of hand drawn main valves on the plat is the technicians best guess of what they control. Every effort was made to ensure the accuracy of these plats, but EUWD does not guarantee their accuracy.

RECOMMENDATIONS

- I. Install meters on all water services, even if the consumer is not to be billed. Set reasonable and prudent usage standards for each type of water use. There is no inducement to the consumer to conserve or use water wisely when water is supplied without charge or without usage limits. The potential benefits of metering to the City are numerous:
 - A. Conservation of a precious and valuable resource.
 - B. Potential reduction in water consumption and related waste water treatment costs.
 - C. Help stretch existing supplies to meet increasing needs. This could help defer the construction of new facilities such as new wells, booster stations, storage tanks, or distribution systems upgrades.
 - D. Allows the City to identify and verify all water use and determine water system efficiency.
 - E. Gives the City the tools needed to select and implement programs to enhance efficiency, prevent loss, and foster water conservation.

- II. During the course of the survey, EUWD noted numerous meters in need of replacement. We recommend the initiation of a systemwide customer meter maintenance program. System meters should be upgraded through an ongoing meter change out program. This program would involve replacing a specified number of meters each period with new or rebuilt meters, until all system meters have been replaced.

All meter installations should be reviewed to determine whether the meter is properly sized and the correct type for the current use and flow-demand.

Water meters are designed to deliver a maximum flow for short periods and a lower flow for long periods without sustaining damage or above normal wear. If a meter is operating outside its intended range, it cannot register all flow, even though it may be calibrated. We recommend that all well meters and a percentage of large commercial meters be tested in place yearly for accuracy.

- III. 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 reduce the inherent specified accuracy below an acceptable level. Meters installed in close proximity to a bend, valve or other fittings that is likely to disturb the flow condition at the meter could invalidate the manufactures meter calibration.

- IV. Revise master water distribution plats from "As Built" plans, EUWD plat, and utilizing the knowledge and expertise of long term field employees. Master plats should show locations of all main valves, fire hydrants, blow offs, drain or flush valves, air relief valves, and pressure regulating valves. Revised plats should be made available to field maintenance supervisors for use in the operation and maintenance of the water distribution system.
- V. Utilizing the revised master distribution plats, all distribution system main line valves should be located, adjusted, marked, cleaned, tested, and repaired or replaced as needed. The use of valve marker posts are recommended on main line valves that are subject to being lost or buried. Time spent searching for lost or buried main valves and flushing fire hydrants to reduce pressure and volume for leak repair is a major source of water loss.
- VI. Conduct a thorough evaluation of the irrigation systems and methods used to irrigate the City owned cemeteries, ball fields and fairgrounds. An estimated 24 million gallons or 65,753 gallons of water per day was used to irrigate these areas in 1991. Consider replacing or retrofitting the existing systems with state-of-the-art efficient equipment.

The new irrigation system features which are now available and have shown to pay for their initial costs in as few as two years are as follows: Moisture sensing devices, rain sensing devices, wind sensors, low precipitation sprinklers, matched precipitation sprinklers, excess flow sensors, devices to prevent low head drainage, master valves, special controller circuits to provide varying watering schedules, repeat cycling controllers, and solid-state time accurate controllers for accuracy in timing.

These system features are costly, but if viewed in light of how much they will save in operational costs, and the fact that this equipment can reduce the amount of water used by 5 or 10 percent this could be a justifiable expense.

When used in conjunction with basic exterior water conservation methods a significant amount of precious water can be saved and long term cost savings can be realized by the City.

- VII. Implement a fire hydrant preventive maintenance program in-house or in conjunction with the local fire department. All hydrants should be inspected, flushed, lubricated, and painted on a routine basis.
- VIII. Install lead valves as part of the installation on all new or replacement fire hydrants.
- IX. Consider ductile iron pipe for the primary main line material used for new installation and main replacement. As the production costs 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.

JRS/bmc
003jrs

COMMENTS

We wish to express our personal appreciation for the assistance and cooperation we received from the management and staff of the City of Uvalde. We applaud your interest in water conservation and the District's Leak Detection/Location Program and are grateful for the opportunity to survey your water system. Management's professional and progressive approach to serving the needs of their customers while helping to conserve a valued resource is commendable. All personnel we worked with were highly trained, meticulous in the performance of their duties, and had a very positive attitude about their jobs and the customers they serve.

The active participation of Warren Fulcher, Tony Rodriguez, and the other City of Uvalde staff members that assisted in this survey, was greatly appreciated. Their knowledge, experience, enthusiasm, and professional work habits contributed to its success.

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 their efforts in helping to conserve the Edwards Aquifer.

Sincerely,

James R. Shipley

James R. Shipley
Leak Detection Technician II

Mark L. McGinnis

Mark L. McGinnis
Leak Detection Technician I

JRS:MLM/bmc

004jrs

APPENDIX A

Edwards Underground Water District
Service Line Leaks (9)
1993System: City of UvaldePage 1 of 1

<u>Line #</u>	<u>Date #</u>	<u>Plat #</u>	<u>Address</u>	<u>Loss G.P.D.</u>	<u>Date Repaired</u>	<u>Recheck Date</u>
1	1/19/93	39	402 Elizabeth	720	1/20/93	1/21/93
2	1/19/93	35	613 West Garden	720	1/21/93	1/21/93
3	1/19/93	36	Juarez @ Doolie	720	1/19/93	1/21/93
4	1/21/93	36	415 S. Bates	360	1/27/93	4/26/93
5	1/25/93	15	418 Colera St.	2,160	2/3/93	2/3/93
6	2/1/93	14	304 South Camp St.	26	2/9/93	2/9/93
7	3/22/93	14	320 South Camp St.	26	3/22/93	4/26/93
8	3/24/93	12	227 West Mill St.	180	3/27/93	4/26/93
9	3/24/93	17	308 North East Lane	720	3/29/93	4/26/93

APPENDIX B

Edwards Underground Water District
 Fire Hydrant Leaks (9)
 1993

System: City of Uvalde

Page 1 of 1

Line #	Date #	Plat #	Address	Loss G.P.D.	Date Repaired	Recheck Date
1	1/20/93	36	Cargile @ San Jacinto	100	1/20/93	1/20/93
2	1/25/93	12	High St. @ Mill St.		Pending	
3	1/26/93	14	201 South Getty	720	3/9/93	3/23/93
4	2/8/93	19	North Grove @ Fort Clark		Pending	
5	2/8/93	19	North Crisp @ Fort Clark		Pending	
6	2/22/93	26	Knox St. @ Sabinal St.		Pending	
7	2/23/93	29	Bowie St. @ Front St.		Pending	
8	2/22/93	28	1519 North Park St.		Pending	
9	3/23/93	3	843 Cherry St.		Pending	

APPENDIX C

Edwards Underground Water District Meter Box Leaks (30) 1993

System: City of Uvalde

Page 1 of 2

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments
1	1/19	36	551 Villa	9	2/19/93	Inlet Washer
2	1/19	36	541 Villa	17	2/19/93	Outlet Washer
3	1/20	34	716 Boone St.	23	2/19/93	Curb Stop Leak
4	1/20	33	320 Chaparral	9	2/19/93	Outlet Washer
5	1/20	34	228 Prairie St.	9	2/19/93	
6	1/20	33	657 W. Luna	9	2/19/93	Inlet Washer
7	1/20	33	510 Rooch	17		Inlet Washer
8	1/26	15	201 W. Main	23	2/18/93	Packing Leak
9	1/26	14	117 West South	10	2/18/93	Curb Stop Leak
10	1/26	10	729 South Getty	9	2/1/93	Packing Leak
11	2/2	13	217 Mill St.	9	2/18/93	Inlet Washer
12	2/2	26	306 N E Lane	17	2/19/93	Curb Stop Leak
13	2/8	26	300 N E Lane	9	2/19/93	Outlet Washer
14	2/8	19	213 West Mesquite	9	2/18/93	Inlet Washer
15	2/9	18	510 North Camp	17	2/18/93	Curb Stop Leak
16	2/9	18	415 North Park	23	2/18/93	Packing Leak / Blue Lid
17	2/10	21	547 North Getty	9	2/18/93	Inlet Washer
18	2/16	22	234 Mulberry	9	2/18/93	Packing Leak
19	2/17	23	207 West Benson	17	4/27/93	Inlet Washer
20	2/17	26	411 East Oppenheimer	17	4/27/93	Inlet Washer
21	3/2	21	751 North Camp	9	4/27/93	

APPENDIX C

Edwards Underground Water District
 Meter Box Leaks
 1993

System: City of UvaldePage 2 of 2

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments
22	3/2	29	211 West Camp	4	Unknown	Gaskets
23	3/17	2	802 Nopal St.	9	4/27/93	
24	3/22	7	604 East Mesquite	43	4/27/93	Brick Concrete Outlet Washer
25	3/22	2	622 Wimberly	17	4/27/93	
26	3/23	2	944 Nopal St.	17	4/27/93	
27	3/23	3	832 Maple St.	17	4/27/93	
28	3/28	?	1020-1/2 South Getty	43	4/27/93	Curb Stop Leak
29	3/29	39A	998 Vanessa	26	4/27/93	Meter Washer
30	?	44	92 Kings Court	9	4/27/93	Inlet Washer

APPENDIX D

Edwards Underground Water District
Main Line Leaks (3)
1993

System: City of Uvalde

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<u>Line #</u>	<u>Date #</u>	<u>Plat</u>	<u>Address</u>	<u>Loss G.P.D.</u>	<u>Date Repaired</u>	<u>Recheck Date</u>
1	2/22	25	Sabinal @ North Park	360	3/2/93	3/2/93
2	3/22	7	310 Second St.	9,504	4/2/93	4/8/93
3	?	17	East Street @ East Main St.	N/A	Unknown	

APPENDIX E

Edwards Underground Water District
 Main Valve Leaks (3)
 1993

System: City of Uvalde

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Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Recheck Date
1	2/1/93	13	Mill St. @ South Getty	720	2/4/93	2/8/93
2	2/9/93	26	Northwood @ Oak St.	26	3/3/93	3/23/93
3	?	14	East Street @ East Main		Pending	

APPENDIX F

Edwards Underground Water District Customer Side Leaks (309) 1993

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System: City of Uvalde

Line #	Date #	Plat	Address	Comments
1	1/11	39	311 Elizabeth	Front Faucet
2	1/12	35	518 Silvester	
3	1/13	34	215 Chaparral	
4	1/20	39	440 Elizabeth	
5	1/20	39	508 Elizabeth	
6	1/20	38	210 S. Farrar	
7	1/20	38	331 S. Farrar	
8	1/20	38	213 S. Farrar	
9	1/20	38	225 Elizabeth	
10	1/20	38	216 Elizabeth	
11	1/20	37	731 West Main	
12	1/20	37	735 West Main	
13	1/20	36	711 Juarez St.	Service to Appt.
14	1/20	35	715 West Garden	
15	1/20	35	320 Bates	
16	1/20	34	113 Bates	
17	1/20	34	205 South Groove	
18	1/20	35	542 Flores St.	
19	1/20	35	546 Flores St.	
20	1/20	36	520 Augustine	
21	1/20	36	601 Juarez	

APPENDIX F

Edwards Underground Water District
Customer Side Leaks
1993

System: City of Uvalde

Page 2 of 15

Line #	Date #	Plat	Address	Comments
22	1/20	36	558 Juarez	
23	1/20	36	520 Juarez	
24	1/20	36	519 Juarez	
25	1/20	36	518 Juarez	
26	1/20	36	347 Nicolas	
27	1/20	36	551 Diaz	
28	1/20	36	540 Diaz	
29	1/20	36	549 Geraldine	
30	1/20	36	548 Geraldine	
31	1/20	36	546 Geraldine	
32	1/20	36	544 Geraldine	
33	1/20	36	538 Geraldine	
34	1/20	36	535 Geraldine	
35	1/20	36	524 Geraldine	
36	1/20	36	508 Evans	(FM 1435)
37	1/20	36	556 Cargile Ave.	
38	1/20	36	555 Cargile Ave.	
39	1/20	36	621 Nicholas	
40	1/20	37	115 Farrow St.	
41	1/20	34	116 Farrow St.	
42	1/20	34	209 Farrow St.	

APPENDIX F
Edwards Underground Water District
Customer Side Leaks
1993

System: City of Uvalde

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Line #	Date #	Plat	Address	Comments
43	1/20	34	635 Boone St.	
44	1/20	34	617 Boone St.	
45	1/20	34	539 Boone St.	
46	1/20	34	515 Boone St.	
47	1/20	34	214 Chaparral	
48	1/20	34	223 Chaparral	
49	1/20	34	239 Chaparral	
50	1/20	34	706 Reyes	
51	1/20	34	219 Shook	
52	1/20	34	224 Shook	
53	1/20	34	213 Prairie	
54	1/20	34	237 Prairie	
55	1/20	34	219 Prairie	
56	1/20	34	238 Prairie	
57	1/20	33	630 Fort Clark	
58	1/20	33	262 Shook	
59	1/20	33	726 W. Leona	
60	1/20	33	648 W. Leona	
61	1/20	33	625 W. Leona	
62	1/20	33	616 W. Leona	
63	1/20	33	609 W. Leona	

APPENDIX F

Edwards Underground Water District
Customer Side Leaks
1993

System: City of UvaldePage 4 of 15

Line #	Date #	Plat	Address	Comments
64	1/20	33	537 W. Leona	
65	1/20	33	525 W. Leona	
66	1/20	33	411 Prairie	
67	1/20	33	407 Prairie	
68	1/20	33	241 Prairie	
69	1/20	33	240 Prairie	
70	1/20	33	519 Roach	
71	1/20	33	528 Roach	
72	1/20	33	620 Roach	
73	1/26	13	178 Doughty Ave.	
74	1/26	10	735 South Getty	Notified
75	1/25	12	505 Perez St.	
76	1/25	12	507 Perez St.	
77	1/25	12	521 Perez St.	
78	1/25	12	401 Perez St.	
79	1/25	12	324 Perez St.	
80	1/25	12	Crisp & Perez Alley	Last Meter
81	1/25	12	530 Crisp Ave.	Front Faucet
82	1/25	12	601 Crisp Ave.	
83	1/25	12	521 Carrizo Rd.	
84	1/25	12	423 Carrizo Rd.	

APPENDIX F

Edwards Underground Water District
Customer Side Leaks
1993System: City of UvaldePage 5 of 15

Line #	Date #	Plat	Address	Comments
85	1/25	12	415 Carrizo Rd.	
86	1/25	12	217 Mill St.	
87	1/25	12	613 South Park St.	
88	1/25	12	615 South Park St.	
89	1/25	12	612 South High St.	
90	1/25	12	521 South High St.	
91	1/25	12	512 S. Park St.	
92	1/25	12	512 S. High St.	
93	1/25	10	614 S. Park St.	
94	1/25	10	713 S. High	
95	1/25	11	724 Carrizo Rd.	
96	1/25	15	231 Calera	
97	1/25	15	319 Caleria	
98	1/25	15	309 S. Crisp St.	
99	1/26	15	211 W. Garden	
100	1/26	15	210 South Crisp	
101	1/26	15	136 South High	
102	1/26	14	129 West Garden	
103	1/26	14	130 West Garden	
104	1/26	13	121 Mill St.	
105	1/26	13	423 South Getty	

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Edwards Underground Water District
Customer Side Leaks
1993

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Line #	Date #	Plat	Address	Comments
106	1/26	13	424 South Getty	
107	1/26	13	115 Doughty Ave.	
108	1/26	13	123 Doughty Ave.	
109	1/26	10	704 South Getty	
110	1/26	10	707 South Getty	Apartments Constant Use
111	1/26	10	844 South Park	
112	1/26	10	837 South Park	
113	1/26	10	849 South Park	
114	1/26	10	931 South Park	
115	1/26	10	934 South Park	
116	1/26	16	205 West Main	
117	1/26	16	124 North High	
118	1/26	16	127 North Park	
119	1/26	16	129 North Park	
120	1/26	16	400 West Nopal St.	
121	1/26	16	230 West Nopal St.	
122	1/27	16	136 West Nopal St.	
123	1/27	16	117 West Nopal St.	
124	1/27	16	106 West Nopal St.	
125	1/27	10	115 Cargile Ave.	
126	1/27	11	816 South High	

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Line #	Date #	Plat	Address	Comments
127	1/27	10	859 South High	
128	1/27	10	860 South High	
129	1/27	10	863 South High	
130	1/27	17	106 East Street	
131	2/1	14	220 First Alley	
132	2/1	14	223 First Alley	
133	2/1	14	130 Calera	
134	2/1	14	223 Calera	
135	2/1	14	236 Calera	
136	2/1	14	235 Calera	
137	2/1	14	302 South Camp	
138	2/1	13	507 South Camp	
139	2/2	13	118 Mill St.	
140	2/2	13	137 Mill St.	
141	2/2	9	821 South Camp St.	
142	2/2	10	720 South Camp St.	
143	2/2	10	703 South Camp St.	
144	2/2	10	672 South Camp St.	
145	2/2	10	678 South Camp St.	
146	2/2	10	548 South Camp St.	
147	2/2	13	528 South Camp St.	

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Line #	Date #	Plat	Address	Comments
148	2/2	13	502 South Camp St.	
149	2/2	13	414 South Camp St.	
150	2/2	13	229 Second Alley	
151	2/2	13	230 Mill St.	
152	2/2	13	228 Kennedy St.	
153	2/2	13	128 Doughty Ave.	
154	2/2	13	208 East Garden	
155	2/8	8	East Main	Constant School Flow Urinals
156	2/8	16	426 West Oak St.	
157	2/8	16	423 West Oak St.	
158	2/8	16	400 West Oak St.	
159	2/8	16	330 West Oak St.	
160	2/8	16	211 West Oak St.	
161	2/8	19	435 Ft. Clark	
162	2/8	19	423 Ft. Clark	
163	2/8	19	231 West Mesquite	
164	2/9	18	505 North Camp	
166	2/9	18	518 North High	
167	2/9	18	530 North High	
168	2/9	18	510 North Park	
169	2/9	18	509 North Park	

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Edwards Underground Water District Customer Side Leaks 1993

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Line #	Date #	Plat	Address	Comments
170	2/9	18	217 Leona St.	
171	2/9	21	546 North High	Meter is Stopped
172	2/10	21	747 North Getty	
173	2/10	21	757 North Getty	
174	2/10	20	465 North Crisp	
175	2/10	20	400 Bohme St.	
176	2/10	20	401 West Leona	
177	2/10	20	428 Captain St.	
178	2/10	20	430 Captain St.	
179	2/16	19	425 North Crisp	Front Faucet
180	2/16	22	410 Florence St.	
181	2/16	22	828 North Getty	
182	2/16	22	814 North High	
183	2/16	22	235 Martin St.	
184	2/16	23	916 North Park St.	Front Faucet
185	2/16	23	222 Myrtle St.	
186	2/16	23	221 Minter St.	
187	2/16	23	228 Minter St.	
188	2/17	23	416 Minter St.	
189	2/17	23	425 Minter St.	
190	2/17	23	1113 North Park St.	

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Line #	Date #	Plat	Address	Comments
191	2/17	23	232 Mulberry St.	
192	2/17	23	319 Mulberry St.	
193	2/18	23	338 Mulberry St.	
194	2/18	23	334 Mulberry St.	
195	2/18	23	1222 North Park St.	
196	2/18	23	1218 Magnolia St.	
197	2/22	23	338 Pecan St.	
198	2/22	23	337 Pecan St.	
199	2/22	23	332 Pecan St.	
200	2/22	23	235 Pecan St.	
201	2/22	23	1218 North High St.	
202	2/22	23	121 Oppenheimer St.	
203	2/22	23	336 West Benson	
204	2/22	23	204 West Benson	
205	2/22	23	305 West Benson	
206	2/22	23	314 East Oppenheimer	
207	2/22	23	316 East Oppenheimer	
208	2/22	23	406 East Oppenheimer	
209	2/22	26	312 Pecos	
210	2/24	26	1217 North Getty St.	
211	2/24	23	1403 North Park	

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Line #	Date #	Plat	Address	Comments
212	2/24	23	1402 North Park	
213	2/24	23	1410 North Park	
214	2/24	23	1414 North Park	
215	2/24	23	114 West Pecos St.	
216	2/24	23	301 West Pecos St.	Meter is on Mackenzie
217	2/24	25	201 Sabinal St.	
218	2/24	25	200 Sabinal St.	
219	2/24	25	216 Sabinal St.	
220	2/24	25	309 Sabinal St.	
221	2/24	25	316 Sabinal St.	
222	2/24	28	204 N. Nueces St.	
223	3/1	28	209 N. Nueces St.	
224	3/1	28	216 N. Nueces St.	
225	3/1	28	1908 Hood St.	
226	2/25	27	Knox St. & Frio St.	
227	2/25	27	Miliam & Frio St.	
228	3/1	27	300 Frio St.	
229	3/1	28	1721 North Park St.	
230	3/1	28	300 Fannin	
231	3/1	28	209 Fannin	
232	3/1	28	216 Commerce St.	

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Edwards Underground Water District
Customer Side Leaks
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Line #	Date #	Plat	Address	Comments
233	3/1	28	212 Commerce St.	
234	3/1	28	203 Commerce St.	
235	3/1	28	204 Commerce St.	
236	3/1	28	1903 Bowie St.	
237	3/1	28	1904 Bowie St.	
238	3/1	28	1241 North High	
239	3/1	28	587 West Main	
240	3/24	As Built	20 Rosebud	
241	3/24	26	524 Oppenheimer	
242	3/24	26	528 Oppenheimer	
243	3/24	26	1010 North Camp	
244	3/24	26	1022 North Camp	
245	3/24	22	934 North Camp	
246	3/24	22	120 Studer Street	
247	3/24	22	116 Anglin Street	
248	3/24	21	110 Tucker Place	
249	3/24	21	114 Tucker Place	
250	3/24	21	757 North Camp	
251	3/24	21	752 North Camp	
252	3/24	21	412 Daniel Street	
253	3/24	29	120 Daniel Street	Service on Side

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Edwards Underground Water District Customer Side Leaks 1993

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Line #	Date #	Plat	Address	Comments
254	3/24	29	200 Hwy 55	
255	3/24	29	308 Hwy 55	
256	3/24	32	508 Brazos Street	
257	3/24	32	2308 Knox Street	
258	3/24	31	509 Brazos Street	
259	3/24	31	413 Brazos Street	
260	3/24	31	Miliam & Brazos Street	City Limits Nite Club
261	3/24	31	213 Brazos Street	
262	3/24	31	205 Hwy 55	
263	3/24	31	210 Hwy 55	
264	3/24	31	206 Hwy 55	
265	3/24	31	202 Hwy 55	
266	3/24	8	705 Brook Street	
267	3/24	5	821 East Garden	
268	3/24	5	826 East Garden	
269	3/24	5	828 East Garden	
270	3/24	5	906 East Garden	
271	3/24	5	914 East Garden	
272	3/24	5	107 Marsh Street	
273	3/24	5	117 Marsh Street	
274	3/24	5	118 Marsh Street	

APPENDIX F

Edwards Underground Water District Customer Side Leaks 1993

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Line #	Date #	Plat	Address	Comments
275	3/25	2	106 College Lane	
276	3/25	2	East Main	Golden Dragon Restaurant
277	3/25	2	916 Nopal Street	
278	3/25	2	834 Nopal Street	
279	3/25	2	830 Nopal Street	
280	3/25	7	613 Nopal Street	
281	3/25	7	609 Nopal Street	
282	3/25	7	608 Nopal Street	
283	3/25	7	214 Second Street	
284	3/25	7	512 East Oak Street	
285	3/25	7	508 East Mesquite	
286	3/25	7	512 East Mesquite	
287	3/25	7	513 East Mesquite	
288	3/25	7	515 East Mesquite	
289	3/30	7	400 Sycamore Street	
290	3/30	7	405 Sycamore Street	
291	3/30	7	408 Sycamore Street	
292	3/30	7	409 Sycamore Street	
293	3/30	4	209 3rd Street	
294	3/30	4	224 3rd Street	
295	3/30	4	303 3rd Street	

APPENDIX F

Edwards Underground Water District Customer Side Leaks 1993

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Line #	Date #	Plat	Address	Comments
296	3/30	4	708 Mesquite Street	
297	3/30	6	704 Oak Street	Customer Valve
298	3/30	6	630 Wimberly Street	
299	3/30	6	496 East Mesquite Street	
300	3/30	3	801 Cherry St.	
301	3/30	3	808 Laurel Street	
302	5/24	3	813 Laurel Street	
303	5/24	3	828 Laurel Street	
304	5/24	3	910 Laurel Street	
305	5/24	4	825 Maple Street	
306	5/25	46	317 Studer Street	
307	5/26	46	1105 Ft. Clark Road	
308	5/26	As Built	1101 Ft. Clark Road	
309	5/26	R	127 Zarzamora	

APPENDIX G

Edwards Underground Water District
 Fire Hydrants, Valves, and Feet of Main Added to Plats (57)
 1993

System: City of Uvalde

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Line #	Plat #	Fire Hydrants	Valves	Others	Footage
1	1	2	2	-0-	700'
2	2	-0-	1	-0-	-0-
3	3	1	2	-0-	550'
4	6	-0-	1	-0-	-0-
5	8	-0-	1	-0-	-0-
6	9	1	2	-0-	-0-
7	10	-0-	4	-0-	150'
8	14	-0-	3	-0-	200'
9	15	-0-	1	-0-	200'
10	16	-0-	1	-0-	-0-
11	17	-0-	1	-0-	-0-
12	18	-0-	1	-0-	475'
13	19	-0-	1	-0-	-0-
14	21	1	-0-	-0-	-0-
15	22	1	1	-0-	-0-
16	23	1	1	-0-	1,650'
17	24	1	-0-	-0-	-0-
18	25	-0-	2	-0-	-0-
19	26	-0-	1	-0-	-0-
20	29	-0-	2	-0-	-0-
21	30	-0-	1	-0-	200'

APPENDIX G

Edwards Underground Water District Fire Hydrants, Valves, and Feet of Main Added to Plats 1993

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System: City of Uvalde

Line #	Plat #	Fire Hydrants	Valves	Others	Footage
22	31	2	5	-0-	2,300'
23	34	1	-0-	-0-	-0-
24	35	-0-	2	-0-	-0-
25	36	-0-	1	-0-	-0-
26	38	-0-	2	-0-	-0-
27	44	-0-	2	-0-	-0-
28	47	1	-0-	-0-	-0-
29	5A	1	4	-0-	1,550'
30	28A	-0-	-0-	-0-	225'
31	29A	-0-	-0-	-0-	350'
32	31A	4	2	-0-	1,750'
33	39A	5	11	1	6,025'
34	A	-0-	-0-	-0-	75'
35	B	3	3	-0-	4,950'
36	E	2	2	-0-	1,600'
37	F	4	2	-0-	4,400'
38	G	2	3	-0-	3,000'
39	H	2	4	1	2,600'
40	I	9	14	-0-	7,200'
41	J	3	7	-0-	3,900'
42	K	3	5	-0-	2,400'

APPENDIX G

Edwards Underground Water District
 Fire Hydrants, Valves, and Feet of Main Added to Plats
 1993

System: City of Uvalde

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Line #	Plat #	Fire Hydrants	Valves	Others	Footage
43	M	3	2	-0-	2,100'
44	N	3	3	-0-	3,525'
45	O	4	7	-0-	3,750'
46	Q	3	4	-0-	4,900'
47	P	5	9	-0-	5,350'
48	S	7	9	1	7,000'
49	T	-0-	-0-	-0-	2,350'
50	U	-0-	-0-	-0-	950'
51	V	3	4	-0-	2,950'
52	L	1	1	-0-	1,375'
53	R	9	22	-0-	11,600'
54	I	5	4	-0-	4,500'
55	II	1	2	1	1,700'
56	III	6	6	-0-	7,450'
57	IV	-0-	-0-	-0-	8,000'
TOTAL		33	169	4	106,750'
					20.2 miles

APPENDIX H

Edwards Underground Water District Service/Unable To Survey (16) 1993

System: City of Uvalde

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Line #	Plat	Address	Reason
1	35	718 West Garden	UTL
2	36	Bates Lot 16	"
3	15	213 South Grove	"
4	15	South Grove and West Garden	"
5	37	217 Farrar	"
6	12	316 S. Crisp	Under Car
7	12	618 S. Crisp	"
8	14	South Street	Under Car Meter
9	14	South Camp & Calera	"
10	16	215 West Oak St.	
11	27	208 Frio St.	Under Car
12	As Built	79 Rosebud	UTL
13	As Built	11 Rosebud	UTL
14	As Built	12 Rosebud	UTL
15	As Built	13 Rosebud	UTL
16	As Built	14 Rosebud	UTL

APPENDIX I

Edwards Underground Water District
 Valves Unable to Survey (84)
 1993

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Line #	Plat #	Location	Reason	Number of Valves
1	1	Knippa @ Jolly	UTL	1 Hyd. Valve
2	2	Leona Rd. @ Fourth St.	"	1
3	5	East Garden St. @ Fourth St.	Under Asphalt	1
4	5	Wilson @ South Fourth St.	UTL	1
5	5	East Main @ 5th St.	Under Asphalt	1
6	6	Wimberly St. @ Second St.	UTL	1
7	7	Nopal St. @ Leona River	"	1
8	8	East Main St. @ Leona River	"	2
9	8	East Main @ Civic Center	Under Asphalt	1 Hyd. Valve
10	10	Geraldine @ South High	UTL	1
11	10	Geraldine @ South Getty	"	1
12	10	Cargile @ South High	Under Asphalt	1
13	10	South Getty @ Cargile	UTL	1
14	12	West Mill @ Old Carrizo Rd.	"	1
15	12	West Doughly Ave. @ South High	"	1
16	13	Mill St. @ South Wood	"	1
17	13	Kennedy St. @ South Camp St.	Under Asphalt	1
18	13	Doughty @ South Camp St.	Under Asphalt	1
19	13	Geraldine @ South Getty	UTL	1
20	13	Doughty @ South Getty	"	1
21	13	Mill St. @ South Camp St.	Stuck Lid	1

APPENDIX I

Edwards Underground Water District Valves Unable to Survey 1993

System: City of Uvalde

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Line #	Plat #	Location	Reason	Number of Valves
22	14	Main St. @ East St.	Under Asphalt	1
23	14	South Camp @ second alley	"	1
24	14	South Camp @ first alley	"	1
25	16	West Oak @ North Park	"	1
26	16	West Nopal St. @ North Grove	"	1
27	16	North Park @ West Nopal	"	1
28	17	Oak St. @ North Getty	"	1
29	17	Alley between Oak St., Nopal St. North Getty and North High	"	1
30	17	West Nopal St. @ North Getty	"	1
31	17	West Nopal St. @ East St.	"	1
32	17	North Getty @ North St.	"	3
33	17	North St. @ East St.	"	1
34	17	West Nopal @ North Getty	UTL	2
35	17	West Nopal @ North Camp	Under Asphalt	3
36	17	West Nopal @ Jail	"	1
37	18	Leona St. @ North High	"	1 Hyd. Valve
38	18	Leona St. @ North Getty	"	2
39	18	Leona St. @ North Camp	"	2
40	18	Mesquite St. @ North High	"	1
41	18	North Getty St. @ Mesquite St.	"	2
42	18	North Getty @ Leona	UTL	1

APPENDIX I

Edwards Underground Water District
Valves Unable to Survey
1993

System: City of Uvalde

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Line #	Plat #	Location	Reason	Number of Valves
43	18	North Camp @ Mesquite	Under Asphalt	2
44	19	Florence St. @ Park St.	"	1
45	19	West Mesquite @ North High	"	1
46	20	Cummings St. @ Black	"	1
47	20	Cummings St. @ Como	"	1
48	20	Bohme St. @ Como	"	1
49	20	Bohme St. @ North Crisp	UTL	1
50	21	Anglin St. @ North Getty	Under Asphalt	1
51	21	Anglin St. @ North Camp	"	1
52	22	Mueller St. @ North High	"	1
53	22	Minter St. @ North High	UTL	1
54	22	Studer St. @ North Camp	Under Asphalt	1 Hyd. Valve
55	25	Sabinal @ Mackenzie	"	1
56	25	563 West Main	"	1 Hyd. Valve
57	26	North Camp between Sabinal and Pecos	UTL	1
58	26	Oppenheimer @ North Camp	Under Asphalt	1
59	28	Frio St. @ Hood St.	"	1
60	31A	Windsong @ Moonwind Dr.	"	1
61	34	West Nopal @ North Grove	"	1
62	34	North Grove @ W. Main	"	1
63	35	West Garden @ South Grove	"	2

APPENDIX I

Edwards Underground Water District Valves Unable to Survey 1993

System: City of Uvalde

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Line #	Plat #	Location	Reason	Number of Valves
64	35	Flores St. @ Evans St.	Under Asphalt	1
65	36	Juarez @ railroad tracks	UTL	1
66	36	West Doughly @ Apolino	Under Water	1
67	38	West Garden @ South Farrar	Under Asphalt	1
68	43	Ashby Dr. @ North Second	UTL	1
69	43	North Second @ Airline Dr.	"	1
70	43	North Second north of Airline Dr.	"	1
71	47	Studer St. @ Donna Dr.	"	1
72	H	Hackberry @ Cypress Circle	"	1
73	Q	Fort Clark @ Benson Rd.	UTL	1
74	R	Zarzamora @ Martinez	"	2
75	R	Main St. across from Claudia St.	"	1
76	R	Monterrey St. @ San Diego St.	"	1 Hyd. Valve
77	S	Laredo St. @ San Diego St.	"	1
78	S	Reydosa St. @ San Diego St.	"	1 Hyd. Valve
79	S	White Lane	"	"
80	S	White Lane @ Gonzales St.	"	2
81	S	Gonzales St. @ Claudia	"	1
82	V	Fort Clark @ U.S. Hwy 90	"	1
83	G	Hackberry @ Briarwood	"	1
84	G	Cottonwood @ Walnut Circle	"	1

APPENDIX J

Edwards Underground Water District
 Valve Stacks Needing Repair (77)
 1993

System: City of Uvalde

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Line #	Plat #	Location	Needed	Number
1	1	Hwy 90 @ Jolley St.	Repair	1
2	1	Hwy 90 @ College Ln.	Raise to Grade	1
3	1	Garner Field Rd. @ Ruth	"	2
4	1	Garner Field Rd. @ service valve	"	1
5	1	East Main St. @ Ruth	"	1
6	1	Mahaffey @ Jolley St.	"	2
7	2	Cherry St. @ Fifth St.	"	1
8	3	Nopal St. @ Third St.	"	1
9	3	Fifth St. @ East Nopal St.	"	1
10	4	East Main @ Fourth	"	1
11	4	Garner Field Rd. @ Puccini Ln.	"	2
12	6	East Leona @ North Wood	"	1
13	7	Oak St. @ Second St.	"	1
14	9	South Getty @ Evergreen	"	1
15	9	South Park @ Evergreen	"	1
16	9	South Park @ Sanders Ln.	"	1
17	15	West Garden @ Smith Grove	"	3
18	17	West Nopal @ West St. alley	"	1
19	17	West St. @ Main St.	"	1
20	18	Alley between Leona St., North Getty, Mesquite St., and North High St.	"	1

APPENDIX J

Edwards Underground Water District Valve Stacks Needing Repair 1993

System: City of Uvalde

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Line #	Plat #	Location	Needed	Number
21	18	North Camp St. @ Mesquite St.	Raise to Grade	2
22	18	North Piper Ln.	"	1
23	19	West Leona @ North Crisp	"	1
24	20	Wesley St. @ North Crisp St.	"	1
25	22	Martin St. @ North High St.	"	1
26	22	Schwartz @ North Gilley	"	1
27	23	North Park @ Myrtle	"	1
28	23	Martin St. @ North Park	"	1
29	24	North Park @ Oppenheimer	"	1
30	25	Nueces St. @ Mackenzie	"	1
31	25	Sabinal near Crockett St.	"	1
32	26	Milam @ Oppenheimer	"	1
33	26	Alamo @ Oppenheimer	"	1
34	26	Oppenheimer @ North Camp	"	1
35	27	Commerce @ Houston	"	1
36	28	Frio St. @ North Park St.	"	1
37	28	Mackenzie St. @ Nueces	"	1
38	29	Bowie @ Daniel St.	"	3
39	29	Bowie @ Front St.	"	1
40	29	Pacific St. @ Park St.	"	1
41	29	Park St. @ Daniel St.	"	1

APPENDIX J

Edwards Underground Water District Valve Stacks Needing Repair 1993

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Line #	Plat #	Location	Needed	Number
42	30	North Camp @ Antonio St.	Raise to Grade	1
43	30	Daniel St. @ Milam St.	"	1
44	30	Houston @ Front St.	"	1
45	30	Hwy 55 @ Miliam St.	"	1
46	30	Daniel St. @ Travis St.	"	1
47	30	Hwy 55 @ North Camp	"	1
48	31A	Melody Lane @ Windsong	"	1
49	31	Brazos @ Knox St.	"	1
50	31	Hwy 55 @ Know St.	"	1
51	31A	Moonwind @ Windsong	"	1
52	32	Brazos @ Hood	"	1
53	32	Alley between Grande St., Vanham St. @ Know St.	"	1
54	32	Vanham St. @ Knox St.	"	1
55	32	Knox St. @ Antonio St.	"	1
56	32	Block 6 @ Knox St.	"	2
57	34	Reyes St. @ Chaparral St.	"	1
58	34	West Main St. @ Bates	"	1
59	34	Alley between West Main and West Garden @ Bates	"	1
60	35	West Garden St. @ South Grove	"	1
61	35	Flores St. @ Nicolas	"	1

APPENDIX J

Edwards Underground Water District Valve Stacks Needing Repair 1993

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Line #	Plat #	Location	Needed	Number
62	35	543 Flores	Raise to Grade	1
63	36	Nicolas St. @ Geraldine	Repair	1
64	38	West Garden St. @ South Farrar	Raise to Grade	1
65	38	South Farrar St.	"	2
66	39	Cargile @ Elizabeth	"	1
67	48	Spanish Oak Dr. between Rio St. and Canyon Blvd.	"	1
68	F	Garner Field Rd. @ El Carrizo Apts.	"	1
69	I	Lou Stroup @ Howard Langford Dr.	"	1
70	I	Lou Stroup @ Howard Langford Dr.	Repair	2
71	P	Fort Clark Rd. @ Lovers Ln.	Raise to Grade	1
72	P	Fort Clark Rd. @ Rene St.	"	1
73	R	Zarasosa St. @ Claudia	"	2
74	R	Claudia St. @ Hwy 90	"	1
75	R	Monterrey St. @ Lovers Lane	"	1
76	S	Reydosa St. @ San Diego St.	"	1
77	33	Fort Clark @ Prairie	"	1

APPENDIX K

Edwards Underground Water District
Valve Stacks That Need Cleaning (17)
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Line #	Plat #	Location	Number of Valves
1	1	U.S. Hwy. 90 @ Ruth St.	1
2	5	Barton St. @ Springs St.	1
3	5	Barton St. near South Fourth	1
4	5	Marsh St. @ Fifth St.	2
5	10	West Cargile @ South Camp St.	2
6	11	West Cargile Ave. @ San Jacinto St.	1
7	14	West Garden @ South Camp	1
8	15	West Main St. @ South Grove	3
9	16	North High @ West Main	1
10	23	Minter St. @ North Park	1
11	29	Knox St. @ Front St.	1
12	30	Travis St. @ David St.	1
13	34	Cobb St. @ West Main St.	1
14	34	West Main St. @ Bates	1
15	34	North Grove St. @ West Main St.	3
16	38	Stewart @ South Farrar St.	1
17	39	Elizabeth @ Juarez	1

APPENDIX L

Edwards Underground Water District
 Curb Stops Not Holding (17)
 1993

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Line #	Date	Plat	Address	Date Repair
1	1/20	34	Riojos Furniture on West Main	2/26
2	1/20	34	111 Cobb St.	2/26
3	1/19	38	208 South Farrar	2/26
4	1/20	33	715 Hardin	2/26
5	1/11	38	208 S. Farrar	2/26
6	1/14	33	510 Roach	2/26
7	1/25	12	226 Mill St.	2/26
8	1/26	15	227 West Garden	2/26
9	1/26	14	201 South Getty	2/26
10	1/26	10	844 South Park	3/1
11	1/27	16	230 West Nopal	3/1
12	2/2	10	709 South Camp St.	3/1
13	2/9	18	217 Leona St.	3/1
14	2/16	22	1113 North Park St.	3/1
15	2/24	28	216 Commerce	
16	2/24	28	1903 Bowie St.	
17	3/17	7	608 Nopal St.	

APPENDIX M

Edwards Underground Water District
 Curb Stops Partly Open (49)
 1993

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Line #	Plat #	Address
1	Sheet 39	315 Elizabeth
2	Sheet 39	436 Farrar
3	Sheet 39	531 S. Farrar
4	Sheet 36	521 Apolonio
5	Sheet 36	435 Apolonio
6	Sheet 36	722 Juarez
7	Sheet 36	428 Margarita
8	Sheet 35	703 West Garden
9	Sheet 35	729 West Garden
10	Sheet 35	227 Bates
11	Sheet 35	508 Sivestre
12	Sheet 35	517 West Garden
13	Sheet 36	546 Villa
14	Sheet 36	660 Nicolas
15	Sheet 36	621 Nicolas
16	Sheet 36	118 Farrar
17	Sheet 37	750 West Main
18	Sheet 34	635 Boone
19	Sheet 34	625 Boone
20	Sheet 34	228 Chaparral
21	Sheet 34	222 Chaparral

APPENDIX M

Edwards Underground Water District
Curb Stops Partly Open
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Line #	Plat #	Address
22	Sheet 34	238 Shook
23	Sheet 34	218 Shook
24	Sheet 33	527 Fort Clark
25	Sheet 33	421 Shook
26	Sheet 33	634 W. Leona
27	Sheet 33	501 Roach
28	Sheet 33	532 Roach
29	Sheet 33	523 Roach
30	Sheet 12	211 W. Mill St.
31	Sheet 12	303 W. Mill St.
32	Sheet 12	617 S. Park St.
33	Sheet 10	109 Geraldine Ave.
34	Sheet 14	119 West Calera
35	Sheet 9	818 South Getty
36	Sheet 9	123 Evergreen
37	Sheet 10	665 South Camp St.
38	Sheet 13	522B South Camp St.
39	Sheet 13	116 Cardwell St.
40	Sheet 18	330 N. East Lane
41	Sheet 20	459 North Crisp
42	Sheet 20	314 Bohme St.

APPENDIX M

Edwards Underground Water District
Curb Stops Partly Open
1993

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Line #	Plat #	Address
43	Sheet 27	304 Frio St.
44	Sheet 32	520 Brazos St.
45	Sheet 35	119 South Fourth
46	Sheet 4	201 3rd St.
47	Sheet 3	708 Wimberly St.
48	Sheet 1	Mahaffey 109
49	Sheet 0	105 Bluebonnet Drive

APPENDIX N

Edwards Underground Water District
Slow Registering Meters (100)
1993

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<u>Line</u> <u>#</u>	<u>Plat</u> <u>#</u>	<u>Address</u>
1	39	440 Elizabeth
2	39	508 Elizabeth
3	38	331 South Farrar
4	35	715 West Garden
5	36	601 Juarez
6	36	551 Diaz
7	36	549 Geraldine
8	36	544 Geraldine
9	37	115 Farrar Street
10	34	209 Farrar Street
11	34	635 Boone Street
12	34	617 Boone Street
13	34	515 Boone Street
14	34	214 Chaparral
15	34	239 Chaparral
16	34	219 Shook
17	34	224 Shook
18	34	237 Prairie St.
19	34	219 Prairie St.
20	33	630 Fort Clark
21	33	262 Shook

APPENDIX N

Edwards Underground Water District
 Slow Registering Meters
 1993

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Line #	Plat #	Address
22	33	411 Prairie St.
23	33	407 Prairie St.
24	33	240 Prairie St.
25	12	521 Perez St.
26	12	521 Carrizo Rd.
27	12	214 Mill St.
28	12	613 South Park St.
29	12	512 South High St.
30	10	713 South High St.
31	13	423 South Getty
32	13	424 South Getty
33	13	115 Doughty Ave.
34	10	837 South Park
36	10	847 South Park
37	10	859 South High
38	10	860 South High
39	10	863 South High
40	14	223 First Alley
41	14	130 West Calera St.
42	14	235 West Calera St.
43	14	236 West Calera St.

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Edwards Underground Water District
Slow Registering Meters
1993

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Line #	Plat #	Address
44	13	672 South Camp St.
45	13	230 Mill St.
46	14	208 East Garden
47	16	426 West Oak St.
48	16	423 West Oak St.
49	19	231 West Mesquite
50	18	505 North Camp St.
51	18	518 North Camp St.
52	21	546 North High St.
53	21	757 North Getty
54	20	465 North Crisp
55	20	400 Bohme Street
56	22	828 North Getty
57	22	814 North High
58	22	235 Martin Street
59	22	1113 North Park Street
60	10	859 South High Street
61	10	860 South High Street
62	10	863 South High Street
63	17	106 East Street
64	14	223 First Alley

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Edwards Underground Water District
Slow Registering Meters
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Line #	Plat #	Address
65	14	130 Calera St.
66	14	236 Calera St.
67	14	235 Calera St.
68	13	672 South Camp St.
69	23	334 Mulberry St.
70	23	1222 North Park Street
71	23	1218 Magolia St.
72	23	332 Pecan St.
73	23	235 Pecan St.
74	23	121 Oppenheimer St.
75	23	406 East Oppenheimer
76	23	312 Pecos St.
77	25	309 Sabinal St.
78	25	316 Sabinal St.
79	As Built	20 Rosebud
80	26	1010 North Camp St.
81	31	213 Braxos St.
82	5	906 East Garden St.
83	5	914 East Garden St.
84	5	107 Marsh Street
85	2	106 College Lane



APPENDIX N

Edwards Underground Water District
Slow Registering Meters
1993

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<u>Line #</u>	<u>Plat #</u>	<u>Address</u>
86	2	916 Nopal St.
87	7	214 Second St.
88	7	508 East Mesquite St.
89	7	512 East Mesquite St.
90	7	513 East Mesquite St.
91	7	400 Sycamore St.
92	7	408 Mesquite St.
93	4	908 Mesquite St.
94	6	496 East Mesquite St.
95	3	808 Laurel St.
96	3	813 Laurel St.
97	3	828 Laurel St.
98	3	910 Laurel St.
99	4	825 Maple St.
100	46	317 Studer Circle