



EDWARDS UNDERGROUND  
WATER DISTRICT

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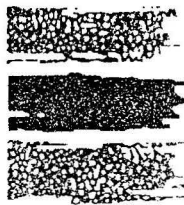
Report 93-02

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

**January 11, 1993 - April 2, 1993**

61 87





EDWARDS UNDERGROUND  
WATER DISTRICT

6.25-7.2

June 8, 1993

Mr. John E. Bierschwale  
City of Schertz  
10 Commercial Place  
Schertz, Texas 78154

Dear Mr. Bierschwale:

We are pleased to submit this final report of the leak detection survey performed on the City of Schertz 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 Sam Willoughby for his 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 19 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.

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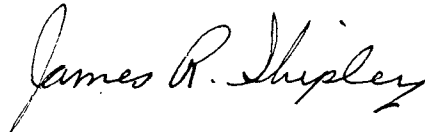
Mr. John E. Bierschwale  
June 8, 1993 - Page 2

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

098jrs



EDWARDS UNDERGROUND  
WATER DISTRICT

LEAK DETECTION SURVEY REPORT  
FOR  
THE CITY OF SCHERTZ  
SCHERTZ, TEXAS  
JANUARY 11, 1993 - APRIL 2, 1993

*PREPARED BY:*

The Edwards Underground Water District  
Division of Planning and Environmental Management  
Leak Detection Program

June, 1993

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- F. Customer Side Leaks
- G. Fire Hydrants Added to Plats
- H. Valves Added to Plats
- I. Miles of Distribution Main Added to Plats
- J. Unable to Locate Fire Hydrants
- K. Unable to Locate Valves
- L. Valve Stacks Needing Cleaning
- M. Valve Stacks Needing Raise to Grade

### ENCLOSURES TO REPORT

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

## SUMMARY

On December 23, 1991, the Edwards Underground Water District (EUWD) received a completed application form from the City of Schertz requesting a leak detection/location survey on its water distribution system. A pre-survey conference was held December 18, 1992 at the City of Schertz Water and Wastewater Service Center 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 utility an updated master water plat with the final report.

John E. Gapinski of EUWD began the survey on January 11, 1993, and the survey was concluded on April 2, 1993. Over the course of the survey, EUWD surveyed a total of 5,782 access points including 4,163 customer service connections, 432 fire hydrants, 1,096 main line valves, and 91 other access points covering 99.99 miles of distribution mains. Computer leak sound correlation was performed on 7 locations.

EUWD technicians detected a total of 169 leaks. This total included 35 meter box leaks, 15 fire hydrant leaks, 8 valve leaks, 5 main leaks, 3 service leaks, and 103 customer side leaks. EUWD estimates 21,703 gallons of water per day has been saved by the repair of 46 detected leaks as of May 10, 1993. The leaks discovered during the survey range from 15,840 gallons per day to numerous small meter box leaks.

As part of the survey, EUWD located 452 main line valves, 171 fire hydrants, and 36.1 miles of distribution main not shown on the master water plats. EUWD staff were unable to locate 9 fire hydrants and 49 main line valves. An additional 39 valve stacks need cleaning and/or repair and 4 valve lids were discovered missing.

JRS/bmc  
001jrs

## DISCUSSION

- A. Total Access Points Surveyed..... 5,782

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

1. Customer service connections: 4,163
2. Main Valves: 1,096
3. Fire Hydrants: 432
4. Others: 91

- B. Total Miles of Distribution Main Surveyed..... 99.99

- C. Total Number of Suspected Leak Sounds Rechecked..... 263

- D. Total Leaks Detected..... 169

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 May 10, 1993..... 21,703 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 Schertz personnel when EUWD was not on site at the time of repair. Totals are only recorded for leaks repaired as of May 10, 1993 with leakage estimates.

EUWD would appreciate a list of leakage estimates for all detected leaks repaired after May 10, 1993 for our records.

1. Meter Box Leaks..... 35

Leakage estimates of repaired leaks..... 1,091 GPD  
Leaks repaired..... 35

A list of these leaks is included in Appendix E.

2. Fire Hydrant Leaks..... 15

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

Leakage estimate of repaired hydrants.....3,000 GPD  
Fire hydrants repaired..... 8  
Leaking hydrants to be repaired..... 7

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

3.	Service Line Leaks.....	3
	Leakage estimates of repaired services.....	1,768 GPD
	Service leaks repaired.....	2
	Service leaks to be repaired.....	1
	A list of service leaks is included in Appendix A.	
4.	Main Line Leaks.....	5
	Leakage estimates of repaired mains.....	15,840 GPD
	Main leaks repaired.....	1
	Main leaks to be repaired.....	4
	A list of main line leaks is included in Appendix B.	
5.	Main Valve Leaks.....	8
	Leakage estimates of repaired leaks.....	4 GPD
	Valve leaks repaired.....	1
	Valve leaks to be repaired.....	7
	A list of these leaks is included in Appendix D.	
6.	Customer Side Leaks.....	103
	Customer side leaks were generally small. No attempt was made to estimate this leakage. Customers were notified by door tag or in person, when possible or will be notified by City of Schertz personnel.	
	A list of these leaks is included in Appendix F.	
F.	Locations To Recheck after Leak Repairs:.....	2
	1. 620 River St.	
	2. Lazy Oak @ Oak Circle	
	3. IH 35 @ FM 1103	
G.	Unresolved Leak Sounds.....	4
	1. 808 Aero - Service	
	2. Landbergh Blvd. between Aviation Aero - Valve	
	3. 106 and 107 Oak Dale - Plastic Service	
	4. 12514 and 12515 Sweetwater - Plastic Service and PVC main	
H.	Survey Findings Vs. Master Water Plats	
	1. Valves shown on plats that could not be located.....	49
	Suspected locations where surveyed by EUWD with a ferromagnetic detector to locate buried main line 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 the valves is included in Appendix K.	

2. Fire hydrants shown on plats that could not be located..... 9  
A list of these fire hydrants is included in Appendix J.
3. Fire hydrants located, but not shown on plats..... 171  
A list of these fire hydrants is included in Appendix G.
4. Valves located but not shown on plats..... 452

Main line Valves: 363  
Service Valves: 1  
Fire line Valves: 1  
Blow-off Valves: 70  
Pressure Control: 6  
Flush Valves: 1  
Air Relief Valves: 9

A list of these valves is included in Appendix H.

5. Miles of distribution main not shown on plats..... 36.1  
A list of these mains is included in Appendix I.

Valves, fire hydrants, and services located were hand drawn on revised master water plats included with this report.

#### I. Miscellaneous Maintenance Needed

1. Valve stacks needing cleaning..... 15  
The condition of these stacks make them unusable at this time.  
A list of these valves is included in Appendix L.
2. Valve stacks needing to be raised to Grade..... 24  
A list of these stacks is included in Appendix M.
3. Missing Valve Box Lids..... 4

1. Plat #2 FM 3009 south of FM 2252
2. Plat #5 IH 35 east of Tri County Pkwy
3. Plat #6 IH 35 south 800' east of FM 2252
4. Plat #9B Oak Street @ Meadow View

4. Curb Stops Not Holding..... 5  
These curb stops are passing water in the closed position, but not leaking.

1. Plat 13 300 Aviation
2. Plat 13 409 Aero
3. Plat 13 211 Aero
4. Plat 13 #19 Hollow Creek
5. Plat 13 Schaeffer Rd. @ FM 1518  
Rt. 1, Box 7313

5. Revised Master Water Plats included with this report.

A. Eight plats were hand drawn by EUWD using the City of Schertz boundary map as a guide. The water distribution system was divided into 19 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 Schertz personnel.

B. 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.

C. 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  
FHWV - Fire Hydrant with Valve  
FH - Fire Hydrant Without Valve  
ARV - Air Relief Valve  
PCV - Pressure Control Valve

- D. 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.
- E. All valves located were surveyed. When direct contact could not be made on a valve, a probe rod was used.
- F. 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.
- G. Any item circled on the plat indicates that it was added, could not be located, or needs repair.
- H. 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. Develop master water distribution plats from "As Built" plans, EUWD plats, and utilizing the knowledge and expertise of long term field employees. Ideal plat scale would be 1" = 200'. Master plats should show locations of all main valves, fire hydrants, blow off, 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.
- II. 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.
- III. 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.

We recommend that all well meters and a percentage of large commercial meters be tested in place yearly for accuracy.
- IV. 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 fittings that is likely to disturb the flow condition at the meter could invalidate the manufactures meter calibration.
- V. Implement a fire hydrant preventive maintenance program in-house or in conjunction with local fire department. All hydrants should be inspected, flushed, lubricated, and painted on a routine basis.
- VI. Install lead valves as part of the installation on all new or replacement fire hydrants.

- VII. 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 sound 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.

- VIII. Implement an ongoing meter box inspection program to repair or replace missing or broken meter boxes and/or lids.

JRS/bmc  
003jrs

## COMMENTS

We greatly appreciate the assistance and cooperation we received from the management and staff of the City of Schertz Water and Wastewater Department. We commend your interest in water conservation and the District's Leak Detection/Location Program and are grateful for the opportunity to survey your water system.

The active participation of Karen Drank and James Hooks in this survey is greatly appreciated. Their knowledge, experience, and professional work habits contributed to its success.

Your efforts and timely repair of the leaks recorded in this report will save a significant amount of precious water. Our thanks to all the staff for your efforts in helping to conserve the Edwards Aquifer.

Sincerely,



John E. Gapinski  
Leak Detection Technician I



James R. Shipley  
Leak Detection Technician II

JEG:JRS/bmc

004jrs

# APPENDIX A

## Edwards Underground Water District Service Line Leaks 1993

System: City of Schertz

Page 1 of 1

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments
1	3/5	13	402 River		Pending 5/10/93	Long Service
2	3/26	13	626 Brooks	26	5/3/93	Short Service
3	3/26	13	620 River	1742.4	4/16/93	Short Service

# APPENDIX F

## Edwards Underground Water District Customer Side Leaks 1993

System: City of Schertz

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Line #	Date #	Address	Comments
64	2/19	500 Brooks	
65	2/19	404 Winburn	
66	2/19	1041 Richmond	Notified
67	2/23	404 Curtis	Notified
68	2/23	506 Wright	
69	2/19	603 Winburn	Notified Back Faucet
70	2/19	424 Lori Lynn	Notified
71	3/5	235 Meadow View	
72	3/5	205 Meadow View	
73	3/5	105 Round Tree	
74	3/5	116 Round Tree	Front Faucet
75	3/5	200 Meadow Lane	Customer Valve
76	3/5	148 Clover Leaf	
77	3/5	103 Dartmoor	Customer Valve
78	3/5	103 Penton Ville	
79	3/5	439 River	Customer Valve
80	3/5	202 Lee	
81	3/5	310 Church	
82	3/5	207 Dowman	Notified
83	3/5	407 First	Notified Faucet
84	3/5	305 Second	

# APPENDIX G

## Edwards Underground Water District Fire Hydrants Added to Plats 1993

System: City of Schertz

Page 1 of 3

Line #	Plat	Address	Type	Number Added
1	1	Doerr Lane	FHWV	1
2	2	FM 2252	"	1
3	2	FM 3009	"	1
4	5	Schertz Parkway	"	4
5	6	Behind Garden Ridge Pottery	"	2
6	7	FM 1103 @ IH 35	"	1
7	7	1103	"	1
8	9	Schertz Parkway	"	8
9	9	East Live Oak	"	1
10	9	Windy Meadow Plat 1	"	8
11	9	Windy Meadow Plat 2	"	14
12	9A	Savannah Square	"	12
13	9A	Savannah Square	FH	5
14	9A	Woodland Oaks	FHWV	12
15	9B	FM 1518	"	2
16	9B	Pecan	"	2
17	9B	Schertz Parkway	"	1
18	10	Dietz Rd. @ FM 3009	"	1
19	10	Live Oak @ FM 3009	"	1
20	10	Silver Tree Park	"	3
21	10	Woodland Oak	"	7

# APPENDIX B

## Edwards Underground Water District Main Leaks 1993

System: City of Schertz

Page 1 of 1

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments
1	1/14	6	Lazy Oak @ Circle Oak		Pending 5/10/93	19' west of valve
2	1/13	7	IH 35 @ FM 1103		"	Tee leaking/ Pinpointed
3	2/4	9	Schertz Prkwy. #2 Fire Hydrant south of IH 35		"	Tee leaking/ Pinpointed
4	3/26	9	FM 3009 1/4 mile south of IH 35		"	14' north of valve
5	3/30	19	6363 Pfeil	15,840	4/13/93	

# APPENDIX C

## Edwards Underground Water District Fire Hydrant Leaks 1993

System: City of Schertz

Page 1 of 1

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments	R/C Date
1	1/11	5	FM 3009 #2 Fire Hydrant south of Tri County Pkwy.	100	1/19	Reseated	1/19
2	1/11	6	Kountry Korner Lane @ FM 3009	100	1/19	Reseated	1/19
3	1/14	5	1204 Antler		Pending 5/10/93		
4	1/14	5	1100 Antler	180	N/A	Reseated	4/1
5	1/28	5	1117 Fair	360	1/28	Reseated	1/28
6	1/29	6	South of Corridor Pkwy @ FM 3009		Pending 5/10/93		
7	1/29	9	Woodland Oak @ Kline	360	3/18	Reseated	4/1
8	1/29	9	2516 Newning		Pending 5/10/93		
9	1/29	9	2617 Starlight	100	1/29	Reseated	1/29
10	2/1	--	3001 Greenshire	360	2/16	Reseated	2/16
11	2/18	13	536 Main		Pending 5/10/93		
12	3/27	18	5650 Graytown	1440	4/22		
13	3/23	19	6303 Pfeil		Pending 5/10/93		
14	3/29	16	11915 Omar		Pending 5/10/93		
15	3/30	9	Maske @ Schertz Parkway		Pending 5/10/93		

# APPENDIX D

## Edwards Underground Water District Valve Leaks 1993

System: City of Schertz

Page 1 of 1

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments
1	1/11	6	North of Tri County Pkwy @ FM 3009		Pending 5/10/93	Blow Off Valve
2	1/14	6	Golden Oak @ Circle Oak		"	"
3	1/28	9	1109 Madison Square		"	"
4	1/28	7	IH 35 @ FM 1103		"	Fire Hydrant Valve
5	1/26	9	1036 Midwell		"	Blow Off Valve
6	2/1	--	Woodland Oaks 650' East of FM 3009		"	"
7	2/24	13	416 Roxanne	4.3	3/24	2" Valve Packing
8	3/22	18	8850 Traner Hale		Pending 5/10/93	Flush Valve

**APPENDIX E**  
**Edwards Underground Water District**  
**Meter Box Leaks**  
**1993**

System: City of Schertz

Page 1 of 2

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments	R/C Date
1	1/28	5	1116-12 Fawn	25.9	3/24	Longhorn	4/1
2	1/28	5	1117 Antler	17.3	4/13	Curb Stop	
3	2/1	--	Woodland Oats @ FM 3009	3.6	3/10	2" Curb Stop	3/17
4	2/1	10	Greenshire Oak	43.2	2/1	1" Curb Stop	2/2
5	2/16	13	1041 Curtis	8.6	2/19	Inlet Washer	4/1
6	2/5	13	1017 Gettysburg	8.6	2/19	Inlet Washer	4/1
7	2/8	9	617 Marilyn	17.3	2/19	Inlet Washer	4/1
8	2/8	9	509 Pecan	51.8	2/19	Inlet Washer	4/1
9	2/8	9	817 Maple	8.6	2/19	Inlet Washer	4/1
10	2/8	9	821 Maple	34.6	2/19	Inlet Washer	4/1
11	2/8	9	424 Lori Lynn	25.9	2/19	Outlet Washer	4/1
12	2/9	9	209 Linda	12.0	2/19	Washer	4/1
13	1/29	9	921 Dimrock	180.0	2/1	Tee	4/1
14	2/11	13	611 Mitchell	17.0	4/22	Riser	
15	2/17	13	301 Aero	42.0	3/25	Outlet Washer	4/1
16	2/17	13	207 Aero	5.0	3/24	Outlet Washer	4/1
17	2/17	13	300 Winburn	8.6	3/25	Curb Stop	4/1
18	2/17	13	211 Brooks	8.6	3/24	Outlet Washer	4/1
19	2/17	13	603 Winburn	8.6	3/24	Outlet Washer	4/1
20	2/17	13	606 Winburn	25.9	2/19	Inlet Washer	2/19
21	2/17	13	516 Winburn	17.3	3/25	Outlet Washer	4/1

# APPENDIX E

## Edwards Underground Water District Meter Box Leaks 1993

Page 2 of 2

System: City of Schertz

Line #	Date #	Plat	Address	Loss G.P.D.	Date Repaired	Comments	R/C Date
22	2/18	13	400 Curtis	4.3	4/22	Meter Seal	
23	2/18	13	508 Wright	5.0	3/24	Outlet Washer	4/1
24	2/18	13	824 Main	25.9	2/9	Riser Washer	4/1
25	2/24	13	900 Curtis	5.0	3/24	Inlet Washer	4/1
26	2/24	13	711 Main	1.0	3/24	Curb Stop	4/1
27	3/5	13	106 Laurel Lane	5.0	3/24	Outlet Washer	4/1
28	3/5	13	206 Lee	8.6	4/13	Washers	
29	3/3	15	11019 FM 1518	8.6	3/24	Outlet Washers	4/1
30	3/3	15	12045 Schaefer	4.3	5/10	Long Horn	
31	3/18	17	11635 Lower Seguin	8.6	3/25	Inlet Washer	4/1
32	3/22	18	12737 IH 10	4.3	4/22	Curb Stop	
33	3/23	18	11560 Ware Seguin	60.5	3/24	Outlet Washer	3/24
34	3/23	18	11900 Ware Seguin	7.9	3/24	Curb Stop	3/24
35	3/23	19	6590 Pfeil	8.6	3/24	Inlet Washer	3/24

# APPENDIX F

## Edwards Underground Water District Customer Side Leaks 1993

System: City of Schertz

Page 1 of 5

Line #	Date #	Address	Comments
1	1/13	Rt. 3, Box 183K Trailer Cibolo 1103 Park	Notified
2	1/28	5213 Irola	Front Faucet / Notified
3	1/28	5305 Plaza	Front Faucet
4	1/28	5318 Plaza	Front Faucet
5	1/28	1204 Antler	
6	1/28	921 Antler	Sprinkler
7	1/28	1005 Fawn	
8	1/28	3732 Hull	
9	1/28	1044 Andrew Low	Notified
10	1/26	2405 Hidden Grove	Customer Valve / Door Tag
11	1/26	2508 Newning	Customer Valve / Door Tag
12	1/26	1100 Dimrock	Customer Valve / Door Tag
13	1/29	1028 Jasper Hill	
14	1/29	2725 Starlight Lane	Customer Valve
15	1/29	2408 Newning	
16	1/29	2529 Newning	
17	1/29	2405 Newning	Notified
18	1/29	120 Lincoln	Front Faucet
19	1/29	128 Richardson	Notified
20	1/29	104 Firestone	
21	1/29	125 Robert Stevenson	

# APPENDIX F

## Edwards Underground Water District Customer Side Leaks 1993

System: City of Schertz

Page 2 of 5

Line #	Date #	Address	Comments
22	1/29	105 Will Rogers	Front Faucet / Customer Valve
23	1/29	125 Will Rogers	
24	2/16	1204 Spicewood	
25	2/16	1816 Shertz Prkwy	Notified
26	2/16	501 Westchester	
27	2/16	1009 Williamsburg	
28	2/16	1013 Williamsburg	
29	2/16	1032 Gettysburg	Split Plastic
30	2/16	1040 Gettysburg	
31	2/19	1008 Richmond	Leak in Yard
32	2/19	1033 Richmond	Customer Valve
33	2/19	1045 Richmond	Customer Valve
34	2/19	812 Marilyn	Yard
35	2/19	621 Marilyn	Yard
36	2/19	800 Pecan	
37	2/23	620 Pecan	Notified
38	2/19	512 Maple	Customer Valve
39	2/19	617 Maple	Customer Valve / Notified
40	2/19	700 Maple	Customer Valve / Door Tag
41	2/19	804 Maple	Customer Valve / Door Tag
42	2/19	225 Lori Lynn	

# APPENDIX F

## Edwards Underground Water District Customer Side Leaks 1993

System: City of Schertz

Page 3 of 5

Line #	Date #	Address	Comments
43	2/19	1509 Oak	Notified
44	2/19	325 Melissa	Customer Valve
45	2/19	205 Linda	Customer Valve / Door Tag
46	2/19	1312 Oak	
47	2/19	406 Pecan	Notified
48	2/19	214 Maple	
49	2/19	619 Mitchel	
50	2/19	817 Aero	
51	2/19	2092 Aero	Notified / Front Faucet
52	2/19	211 Mitchell	Back Faucet
53	2/19	301 Mitchell	
54	2/19	409 Mitchell	
55	2/19	504 Mitchell	
56	2/19	510 Mitchell	Back Faucet
57	2/19	513 Aero	
58	2/19	517 Brooks	
59	2/19	515 Brooks	Notified
60	2/19	213 Aero	
61	2/19	213 Brooks	
62	2/19	210 Aero	
63	2/19	411 Brooks	

# APPENDIX F

## Edwards Underground Water District Customer Side Leaks 1993

System: City of Schertz

Page 4 of 5

Line #	Date #	Address	Comments
64	2/19	500 Brooks	
65	2/19	404 Winburn	
66	2/19	1041 Richmond	Notified
67	2/23	404 Curtis	Notified
68	2/23	506 Wright	
69	2/19	603 Winburn	Notified Back Faucet
70	2/19	424 Lori Lynn	Notified
71	3/5	235 Meadow View	
72	3/5	205 Meadow View	
73	3/5	105 Round Tree	
74	3/5	116 Round Tree	Front Faucet
75	3/5	200 Meadow Lane	Customer Valve
76	3/5	148 Clover Leaf	
77	3/5	103 Dartmoor	Customer Valve
78	3/5	103 Penton Ville	
79	3/5	439 River	Customer Valve
80	3/5	202 Lee	
81	3/5	310 Church	
82	3/5	207 Dowman	Notified
83	3/5	407 First	Notified Faucet
84	3/5	305 Second	

APPENDIX F  
Edwards Underground Water District  
Customer Side Leaks  
1993

System: City of Schertz

Page 5 of 5

Line #	Date #	Address	Comments
85	3/5	2048 FM 1518	Customer Valve / Door Tag
86	3/5	12090 Aztec	
87	3/5	110 Gladys	Customer Valve / Notified
88	3/5	11497 FM 1518	
89	3/5	10810 FM 1518	
90	3/5	11695 Schaefer - Rt. 1, Box 74CH	
91	3/24	12045 Schaefer	Male Adapter by MTR
92	3/24	12621 Schaefer	
93	3/24	12209 Omar	
94	3/24	12443 Sweet Water	Front Faucet
95	3/24	229AA Quail Creek	Leak by MTR
96	3/5	12531 Ware Seguin	
97	3/24	6147 Pfeil	
98	3/29	11185 IH 10	
99	3/30	#19 Hollow Creek	
100	2/1	300 Aviation	
101	4/1	211 Aero	
102	4/1	409 Aero	
103	4/1	704 Aviation	Notified & Repaired

# APPENDIX G

## Edwards Underground Water District Fire Hydrants Added to Plats 1993

System: City of Schertz

Page 1 of 3

Line #	Plat	Address	Type	Number Added
1	1	Doerr Lane	FHWV	1
2	2	FM 2252	"	1
3	2	FM 3009	"	1
4	5	Schertz Parkway	"	4
5	6	Behind Garden Ridge Pottery	"	2
6	7	FM 1103 @ IH 35	"	1
7	7	1103	"	1
8	9	Schertz Parkway	"	8
9	9	East Live Oak	"	1
10	9	Windy Meadow Plat 1	"	8
11	9	Windy Meadow Plat 2	"	14
12	9A	Savannah Square	"	12
13	9A	Savannah Square	FH	5
14	9A	Woodland Oaks	FHWV	12
15	9B	FM 1518	"	2
16	9B	Pecan	"	2
17	9B	Schertz Parkway	"	1
18	10	Dietz Rd. @ FM 3009	"	1
19	10	Live Oak @ FM 3009	"	1
20	10	Silver Tree Park	"	3
21	10	Woodland Oak	"	7

# APPENDIX G

## Edwards Underground Water District Fire Hydrants Added to Plats 1993

System: City of Schertz

Page 2 of 3

Line #	Plat	Address	Type	Number Added
22	10	Green Valley Rd.	FHWV	2
23	10	Green Shire Oaks	"	9
24	13	FM 1518	"	4
25	13	Wise Ln.	FH	1
26	13	Elbel Rd. @ 3009	FHWV	1
27	13	FM 1518 near Aero Ave.	"	3
28	13B	Gladys	"	1
29	13B	North @ FM 78	"	1
30	13B	FM 1518 @ FM 78	"	1
31	13B	Elvira	"	1
32	13B	FM 1518	"	3
33	13B	FM 78 between Wuest and First	"	1
34	13B	Zuehl	FH	1
35	13B	FM 78 @ First	"	1
36	13B	FM 78 East of Mill	"	2
37	13B	Roxanne Lane	"	1
38	13B	FM 78 East of Cloverleaf	"	1
39	14	FM 78	"	1
40	14	Lakeview	FHWV	1
41	14	Lost Meadow	"	1
42	15	FM 1518	"	1

# APPENDIX G

## Edwards Underground Water District Fire Hydrants Added to Plats 1993

System: City of Schertz

Page 3 of 3

Line #	Plat	Address	Type	Number Added
43	15	Schaefer	"	1
44	15	Trainer Hale	"	2
45	16	Moonlight Meadow	"	2
46	16	Lost Meadow	FHWV	1
47	16	Crescent Bend @ Omar	"	1
48	16	Blue Gill @ Lakeview	"	1
49	16	Lynden @ Lakeview	"	1
50	16	Crooked Tree @ Lynden	"	1
51	16	Omar	"	1
52	16	Schaefer Rd.	"	2
53	A	-----	"	4
54	A	-----	FH	1
55	B	-----	FHWV	10
56	B	-----	FH	1
57	C	-----	FH	1
58	C	-----	FHWV	4
59	D	-----	FHWV	1

# APPENDIX H

## Edwards Underground Water District Valves Added to Plats 1993

System: City of Schertz

Page 1 of 8

Line #	Plat	Address	Type	Number Added
1	2	FM 3009	Service Valve	1
2	2	FM 3009	Fire Line Valve	1
3	5	Schertz Parkway	Main Valves	7
4	5	Schertz Parkway	Blow Off Valves	2
5	5	Fawn	Main Valves	5
6	5	Fawn	Pressure Control Valves	2
7	5	Antler	Main Valve	4
8	5	Antler	Pressure Control Valves	2
9	5	Plaza Dr.	Blow Off Valves	4
10	5	Irola Dr.	"	4
11	5	Cabana Dr.	"	1
12	5	Plaza @ IH 35	"	1
13	5	Plaza @ IH 35	Main Valves	2
14	5	Irola @ IH 35	Main Valves	2
15	5	Cabana @ IH 35	Main Valves	1
16	5	Wells	Flush Valve	1
17	5	Associate Dr.	Blow-Off	1
18	6	Fawn @ FM 3009	Main Valve	1
19	6	Circle Oak @ FM 3009	Main Valve	3
20	6	Lazy Oak	Main Valve	2

# APPENDIX H

## Edwards Underground Water District Valves Added to Plats 1993

Page 2 of 8

System: City of Schertz

Line #	Plat	Address	Type	Number Added
21	6	Shady Oak	Main Valve	1
22	6	Golden Oak @ Circle Oak	Main Valve	1
23	6	Golden Oak @ Circle Oak	Blow-Off	1
24	6	Crest Oak Lane	Blow-Off	1
25	6	Circle Oak @ Silver Oak	Blow-Off	3
26	6	FM 3009 @ IH 35	Blow-Off	1
27	6	FM 3009 & IH 35	Main Valve	4
28	6	Behind Garden Ridge Pottery	Main Valve	2
29	7	IH 35 southwest of FM 1103	Main Valve	2
30	7	FM 1103	Main Valve	1
31	7	FM 1103	Blow-Off	1
32	7	FM 1103	Flush Valve	1
33	9	Schertz Parkway	Main Valve	12
34	9	Schertz Parkway	Pressure Control Valves	1
35	9	Schertz Parkway	Blow-Off	1
36	9	Savannah to Schertz Parkway	Main Valve	4
37	9	East Live Oak	Main Valve	2
38	9	Windy Meadows Plat 1	Main Valve	3
39	9	Windy Meadows Plat 1	Blow Off	1
40	9	Windy Meadows Plat 2	Blow Off	1

# APPENDIX H

## Edwards Underground Water District Valves Added to Plats 1993

System: City of Schertz

Page 3 of 8

Line #	Plat	Address	Type	Number Added
41	9	Windy Meadows Plat 2	Main Valve	29
42	9A	Savannah Square	Main Valve	30
43	9A	Savannah Square	Blow Off	9
44	9A	Woodland Oaks	Blow Off	7
45	9A	Woodland Oaks	Main Valve	21
46	9A	Howard @ Lincoln	Main Valve	1
47	9A	Lincoln @ Patrick Henry	Main Valve	1
48	9A	Will Rogers @ FM 3009	Main Valve	1
49	9A	Deerhorn @ Robert Derrick	Main Valve	1
50	9B	Pecan	Main Valve	1
51	9B	Oak St. @ Nell Deane	Main Valve	1
52	9B	Sharon Court @ Marilyn Dr.	Main Valve	1
53	9B	Melissa Court @ Marilyn Dr.	Main Valve	1
54	9B	Linda Court @ Marilyn Dr.	Main Valve	1
55	9B	Sharon Court	Blow Off	1
56	9B	Melissa Court	Blow Off	1
57	9B	Linda Court	Blow Off	1
58	9B	Nell Deane @ Chestnut	Main Valve	2
59	9B	Lari Lynn @ Chestnut	Main Valve	1
60	9B	Chestnut @ 20" main	Main Valve	1
61	9B	Marilyn Dr. to 16" main	Main Valve	3

# APPENDIX H

## Edwards Underground Water District Valves Added to Plats 1993

Page 4 of 8

System: City of Schertz

Line #	Plat	Address	Type	Number Added
62	9B	Randolph @ Marilyn	Main Valve	1
63	9B	Randolph @ 16" main	Main Valve	1
64	9B	Colony @ 16" Main	Main Valve	1
65	9B	Maple @ Pecan	Main Valve	1
66	9B	Marilyn @ Colony	Main Valve	1
67	9B	Pecan @ Colony	Main Valve	1
68	9B	Schertz Parkway @ East Live Oak	Main Valve	5
69	9B	Schertz Parkway @ North and South of Pecan	Main Valve	6
70	9B	Schertz Parkway @ Pecan	Blow Off	1
71	10	Savannah @ FM 3009	Main Valve	2
72	10	Green Valley @ FM 3009	Main Valve	1
73	10	Woodland Oaks @ FM 3009	Main Valve	2
74	10	Dimrock @ FM 3009	Main Valve	4
75	10	Dimrock @ FM 3009	Pressure Control Valve	1
76	10	Dietz Rd. @ FM 3009	Main Valve	1
77	10	FM 3009 between Green Valley & Woodland Oak	Main Valve	1
78	10	FM 302 north of Green Valley	Air Relief	1
79	10	Silver Tree Subdivision	Main Valve	10
80	10	Silver Tree Subdivision	Blow Off	4

# APPENDIX H

## Edwards Underground Water District Valves Added to Plats 1993

System: City of Schertz

Page 5 of 8

Line #	Plat	Address	Type	Number Added
81	10	Woodland Oak	Blow Off	4
82	10	Woodland Oak	Main Valve	8
83	10	Green Valley Rd.	Main Valve	2
84	10	Green Valley Rd.	Blow Off	2
85	10	Green Shire Oaks Sub.	Blow Off	4
86	10	Green Shire Oaks Sub.	Main Valve	12
87	13	FM 1518	Main Valve	4
88	13	Wise Ln.	Main Valve	1
89	13	FM 3009 @ Elbel Rd.	Main Valve	5
90	13	Webster @ 3009	Main Valve	1
91	13	FM 1518 near Aero Ave.	Main Valve	3
92	13	FM 1518 near Aero Ave.	Blow Off	1
93	13A	Randolph @ alley north of Aviation	Main Valve	2
94	13A	Elm @ alley between Mitchell and Aero	Main Valve	2
95	13A	Lindbergh Ave. between Mitchell and Aero	Main Valve	2
96	13A	Randolph Ave. between Mitchell and Aero	Main Valve	2
97	13A	Randolph Ave. between Aero and Brook	Main Valve	1
98	13A	Randolph Ave. between Brooks and Winburn	Main Valve	1

# APPENDIX H

## Edwards Underground Water District Valves Added to Plats 1993

System: City of Schertz

Page 6 of 8

Line #	Plat	Address	Type	Number Added
99	13A	Pecan Ave. between Winburn and Wright	Main Valve	2
100	13A	Randolph Ave. between Winburn and Wright	Main Valve	1
101	13A	Randolph Ave. between Wright and Curtis	Main Valve	1
102	13A	Lindbergh between Curtis and Exchange	Main Valve	3
103	13A	Lindbergh @ Exchange	Main Valve	2
104	13A	Exchange	Blow Off	1
105	13A	Pfeil St. @ Main	Main Valve	2
106	13A	Curtis @ Schertz Parkway	Main Valve	1
107	13A	Koch @ Exchange	Main Valve	1
108	13A	FM 78 @ Schertz Parkway	Main Valve	1
109	13A	Aero @ Schertz Parkway	Main Valve	1
110	13A	Westchester @ Valley Forge	Main Valve	1
111	13A	Curtis @ Westchester	Main Valve	1
112	13A	Curtis @ Roanoke Dr.	Main Valve	3
113	13B	Mill @ FM 78	Main Valve	2
114	13B	Lindbergh @ FM 78	Main Valve	1
115	13B	Wuest @ FM 78	Main Valve	1
116	13B	FM 1518 @ FM 78	Main Valve	1
117	13B	FM 78 west of North	Main Valve	1

APPENDIX H  
Edwards Underground Water District  
Valves Added to Plats  
1993

System: City of Schertz

Page 7 of 8

Line #	Plat	Address	Type	Number Added
118	13B	FM 1518 @ Gladys	Main Valve	2
119	13B	FM 1518 between Gladys and Elvira	Main Valve	3
120	13B	FM 1518	Main Valve	3
121	13B	Aztec	Blow Off	1
122	13B	Wuest @ First	Main Valve	1
123	13B	Church @ First	Main Valve	1
124	13B	Zuchl @ First	Main Valve	2
125	13B	Church @ Mill	Main Valve	2
126	13B	FM 3009 @ FM 78	Main Valve	2
127	13B	River Rd. @ Meadow	Main Valve	1
128	14	Elbel @ Borgfield Rd.	Main Valve	2
129	14	Elbel @ Borgfield Rd.	Blow Off	1
130	14	FM 78	Blow Off	1
131	14	FM 78	Main Valve	4
132	14	Lakeview @ Sweetwater	Main Valve	1
133	14	Lost Meadow	Blow Off	1
134	15	FM 1518	Blow Off	1
135	15	FM 1518	Main Valve	16
136	15	Schaefer	Main Valve	2
137	15	Lower Sequin Rd.	Main Valve	3
138	15	Lower Sequin Rd.	Blow Off	1

APPENDIX H  
 Edwards Underground Water District  
 Valves Added to Plats  
 1993

System: City of Schertz

Page 8 of 8

Line #	Plat	Address	Type	Number Added
139	15	Aranda	Blow Off	1
140	16	Moonlight Meadow	Main Valve	1
141	16	Lost Meadow	Main Valve	1
142	16	Crescent Bend @ Omar	Main Valve	1
143	16	Crescent Bend @ Lakeview	Main Valve	1
144	16	Blue Gill @ Omar	Main Valve	1
145	16	Blue Gill @ Lakeview	Blow Off	1
146	16	Lynden @ Omar	Main Valve	1
147	16	Crooked Tree @ Lynden	Main Valve	1
148	16	Omar @ Schafer	Main Valve	2
149	A	-----	Main Valve	21
150	A	-----	Blow Off	1
151	A	-----	Relief Valve	5
152	B	-----	Main Valves	16
153	B	-----	ARV	3
154	B	-----	BI	2
155	C	-----	Main Valve	7

## APPENDIX I

### Edwards Underground Water District Miles of Distribution Main Added to Plats 1993

System: City of Schertz

Page 1 of 1

<u>Line #</u>	<u>Plat #</u>	<u>Footage</u>
1	5	4,000
2	6	1,000
3	7	1,800
4	9	9,600
5	9A	19,400
6	9B	20,400
7	10	12,425
8	13	10,000
9	13B	6,600
10	14	1,000
11	15	23,200
12	16	6,800
13	A	21,000
14	B	36,500
15	C	11,600
16	D	5,300

190,625 = 36.1 miles

## APPENDIX J

### Edwards Underground Water District Unable to Locate Fire Hydrants 1993

System: City of Schertz

Page 1 of 1

Line #	Plat #	Address	Number of Hydrants
1	5	Associate @ Doerr Ln.	1
2	6	IH 35 Northwest of Wiederstein	2
3	9	Habersham @ Andrew Low	1
4	9	Meadow Lane @ Meadow View	2
5	9	Pecan Dr. @ Oak Street	1
6	9	Pecan Dr. @ Chestnut	1
7	10	Silvertree @ Idlewood	1

## APPENDIX K

Edwards Underground Water District  
Unable to Locate Valves  
1993System: City of SchertzPage 1 of 3

Line #	Plat	Address	Type	Number of Valves
1	2	FM 2252 @ FM 3009	Main Valve	1
2	5	Guad-Comal between Tri County & Industrial Pkwy.	Main Valve	1
3	5	Tri County & Industrial Parkway	Blow Off	2
4	6	FM 3009 500' north of Corridor Parkway	Main Valve	1
5	6	IH 35 south @ Garden Ridge Parkway	Main Valve	2
6	6	IH 35 north 1200' west of Weiderstein Rd.	Main Valve	2
7	6	IH 35 north 1000' east of Weiderstein Rd.	Main Valve	1
8	6	IH 35 north 800 west of of 2252	Main Valve	1
9	6	Lazy Oak south of Crest Oak Lane	Main Valve	1
10	6	Crown Oak @ Spanish Oak	Main Valve	1
11	9	Savannah @ Forsyth Park	Main Valve	1
12	9	Twin Ln @ Kingsland Circle	Main Valve	1
13	9	Woodland Oaks @ Kline Circle	Main Valve	1
14	9	1104 Dimrock	Main Valve	1
15	9	1048 Dimrock	Main Valve	1
16	9	Fuller @ Thomas Edison	Main Valve	1

# APPENDIX K

## Edwards Underground Water District Unable to Locate Valves 1993

System: City of Schertz

Page 2 of 3

Line #	Plat	Address	Type	Number of Valves
17	9	Patrick Henry - Robert Stevenson	Main Valve	2
18	9	Robert Stevenson @ Henry Ford	Main Valve	1
19	9	Schertz Parkway @ East Live Oak	Main Valve	1
20	9	End of Commercial Place @ 20' main	Main Valve	1
21	9	1328 Chestnut	Main Valve	1
22	9	Will Rogers @ Robert Stevens	Main Valve	1
23	9	Pecan Dr. Oak St.	Main Valve	2
24	9	Randolph Ave. @ 16" Main	Main Valve	1
25	9	Randolph Ave. @ Maple	Main Valve	1
26	10	Eli Whitney @ FM 3009	Main Valve	1
27	13	Lindbergh between Aviation and Mitchell	Main Valve	1
28	13	Aero Ave. @ Colony	Main Valve	1
29	13	Lindbergh between Wright and Windburn	Main Valve	1
30	13	Lindbergh between Curtis and Wright	Main Valve	1
31	13	Randolph @ Exchange	Main Valve	1
32	13	Roanoke @ Curtis	Main Valve	1
33	13	Cloverleaf @ FM 78	Main Valve	1

# APPENDIX K

## Edwards Underground Water District Unable to Locate Valves 1993

System: City of Schertz

Page 3 of 3

Line #	Plat	Address	Type	Number of Valves
34	13	Round Tree @ Valley Oak	Main Valve	1
35	13	Green Tree @ Valley Oak	Main Valve	1
36	13	Meadow Lane @ Forest Way	Main Valve	1
37	13	Oakdale @ River Rd.	Main Valve	1
38	13	Lee @ Mill	Main Valve	1
39	16	Blue Gill @ Lakeview	Main Valve	2
40	16	Blue Gill @ Omar	Main Valve	1
41	10	Woodland Oaks between Bent Tree and Greenshire	Main Valve	1
42	10	Woodland Oaks between Bent Tree and Greenshire	Blow Off	1
43	10	Eli Whitney and FM 3009	Main Valve	1

# APPENDIX L

## Edwards Underground Water District Valve Stacks Needing Cleaning 1993

System: City of Schertz

Page 1 of 1

Line #	Plat	Address	Type
1	5	Tri County @ Guad Comal	Main Valve
2	5	Tri County south of Doerr Line	Fire Hydrant Valve
3	5	IH 35 east of Tri County	2 Main Valves
4	6	FM 3009 900' north of Crest Oak	Main Valve
5	9	Habersham @ Savannah	"
6	9	3841 Habersham	"
7	9	Davenport @ Abarcam	"
8	9	1028 Dimrock	"
9	13	Pfeil St. @ Exchange	2 Main Valves
10	13	Schertz Parkway @ Main	Main Valve
11	13	Ebbel Rd. 1600' east of Schertz Prkwy.	"
12	13	1000 Williamsburg	"
13	10	3001 Bent Tree	"
14	10	Woodland Oaks south of Bent Rock	Fire Hydrant Valve
15	16	Moonlight Meadows @ Schafer Rd.	

# APPENDIX M

## Edwards Underground Water District Valve Stacks Raise to Grade 1993

System: City of Schertz

Page 1 of 2

Line #	Plat	Address	Type	Number of Valves
1	5	Irolia @ IH 35	Main Valve	1
2	6	FM 3009 north of Corridor Parkway	Fire Hydrant Valves	2
3	6	FM 3009 @ Treton	"	1
4	6	FM 3009 north of IH 35	Main Valve	1
5	6	IH 35 south 1200' east of 3009	Main Valves	2
6	6	IH 35 north 1000' east of FM 3009	"	1
7	6	IH 35 north 1600' east of 2252	Fire Hydrant Valve	1
8	9	2805 Lockwood	Main Valve	1
9	9	2617 Cedar Lane	"	1
10	9	2524 Kline Circle	"	1
11	9	1140 Dimrock	"	1
12	9	200 Nell Deane	"	1
13	9	1300 Chestnut	"	1
14	13	Schertz Parkway @ Fire Dept.	"	1
15	13	Ebbel Rd. 300' east of Schertz Parkway	Fire Hydrant Valve	1
16	13	Ebbel Rd. 800' east of Schertz Parkway	"	1
17	13	10725 Elvira	"	1

# APPENDIX M

## Edwards Underground Water District Valve Stacks Raise to Grade 1993

System: City of Schertz

Page 2 of 2

Line #	Plat	Address	Type	Number of Valves
18	15	Trainer Hale	Fire Hydrant Valve	1
19	16	Crooked Tree	"	1
20	15	Lower Sequin @ Aranda	Main Valve	1
21	9B	FM 1518 @ Windy Meadow	"	1
22	9B	FM 1518 @ Windy Meadow	Fire Hydrant Valve	1