C

**Beckie Figg**

**From:** Todd Galiga [Todd.Galiga@tceq.texas.gov]
**Sent:** Wednesday, September 18, 2013 11:29 AM
**To:** Geoff Kirshbaum
**Cc:** Paul Terrill; Beckie Figg
**Subject:** RE: Aqua Texas/SE-Gray Application
**Attachments:** Aqua Gray Utilities Subdivisions.doc

Geoff,

In response to your questions:

1. The due date for responding to the RFIs is October 11, 2013.
2. Attached please find the attachment that should have gone out with the letter.
3. Aqua Texas is being asked to amend its application because the information included in the application was insufficient to analyze the rates. These requests for data are not out of the ordinary for analysis of a cost of service, especially one as complex as the one Aqua Texas maintains. As such, the response is an amendment and not a supplement.

Todd Galiga
Environmental Law Division
Texas Commission on Environmental Quality
(512) 239-3578
Todd.Galiga@tceq.texas.gov

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**From:** Geoff Kirshbaum [mailto:gkirshbaum@terrill-law.com]
**Sent:** Monday, September 16, 2013 3:48 PM
**To:** Todd Galiga
**Cc:** Paul Terrill; Beckie Figg
**Subject:** Aqua Texas/SE-Gray Application

Todd,

We received the attached staff letter regarding the Aqua Texas/SE-Gray rate application by fax this morning. It appears to be a combo acceptance/RFI letter. However, I have a few questions:

1. Are we expected to respond to all the RFIs by October 1 or October 11? The letter provides October 1 as the date for addressing a couple of notice issues, but there are two different dates provided for responding to the RFIs (one on page 2 and one on page 4). There are a bunch of questions and we would like until October 11 to respond (although we will try to respond sooner, if possible).
2. Page 4 references an attached list providing where rates may go into effect. Our faxed copy of the letter does not include that. Can you look into that for us and make sure we are given the list if that was intended as part of the letter?
3. Why is Aqua Texas being asked to "amend" its application with RFI responses? A lot of the RFIs are "please explain" type of questions. Wouldn't our responses be supplemental in nature?

We plan to get to work on our responses right away and other questions may arise. However, these clarifications are needed to get started and define the scope of our task.

D

## SECTION I.B - MISCELLANEOUS INFORMATION

A. How often and on what dates are water meters typically read? Cycle reading throughout month.

B. When are bills typically sent out? After cycle reads throughout month

C. Do you serve customers within the corporate limits of a municipality? If No, Go to D. [X] Yes [ ] No.

If yes, which municipalities? City of Old River - Winfree, Beach City

How many customers are within limits of the municipality? 22 - Old River-Winfree; 168 - Beach City

Have you filed a request to change rates with the municipality? [X] Yes [ ] No. If no, please explain:

D. Are you currently collecting the Regulatory Assessment Fee for your customers?
X Yes _____ No

If yes, are you current in your payment of the Regulatory Assessment Fee to the Texas Commission on Environmental Quality
X Yes _____ No

E. *Water Utilities:* Please indicate the Public Water System Identification numbers for each of your systems:

| System Name | TCEQ PWS ID # | County | Status | Rate Increase Applicable? |
|---|---|---|---|---|
| BARROW RANCH | 0360122 | CHAMBERS | A | Yes |
| CARRIAGE TRAIL SUBDIVISION | 0360093 | CHAMBERS | A | Yes |
| GRAY UTILITY SERVICE | 0360005 | CHAMBERS | A | Yes |
| HACKBERRY CREEK SUBDIVISION | 0360100 | CHAMBERS | A | Yes |
| LEANING OAKS WATER ASSOCIATION | 0360081 | CHAMBERS, LIBERTY | A | Yes |
| OAK MEADOWS II SUBDIVISION | 1460096 | LIBERTY | A | Yes |
| OAK MEADOWS III SUBDIVISION | 1460100 | LIBERTY | A | Yes |
| SUNCHASE SUBDIVISION | 1230083 | JEFFERSON | A | Yes |
| TOWERING OAKS I | 1460145 | LIBERTY | A | Yes |
| TRINITY COVE SUBDIVISION | 0360084 | CHAMBERS | A | Yes |
| WEBB WAY SUBDIVISION | 1460137 | LIBERTY | A | Yes |

For each of the systems, please provide a copy of the most recent public water system annual inspection report letter from the Texas Commission on Environmental Quality and a written explanation detailing how and when you will comply with all noted deficiencies. Please refer to Attachment 6.

F. *Sewer Utilities:* Please indicate the discharge permit number for each Wastewater Treatment Plant you operate:

| Wastewater Treatment Plant Name | TCEQ Discharge Permit Number | County | Status | Rate Increase Applicable? |
|---|---|---|---|---|
| Veranda Wastewater Treatment Facility | WQ0011449001 | CHAMBERS | A | Yes |

For each of the plants, please provide a copy of the most recent inspection report letter from the Texas Commission on Environmental Quality and a written explanation datailing how and when you will comply with all noted deficiencies. Please refer to Attachment 6.

## SECTION VIII ALTERNATIVE - PRODUCTION & CONSUMPTION INFORMATION - WATER

Please provide the following information regarding water utility operations over your selected twelve month "test year".

**Table VIII**

| | | | |
|---|---|---|---|
| * Total number of gallons pumped **RAW WATER PURCHASED AND TREATED** (total master meter reading for the year) | [A] | 166,161 | k gallons |
| Total number of gallons for flushing, leaked & stolen | [B] | 31,468 | k gallons |
| Total number of gallons provided to customers **[C]=[A]-[B]** | [C] | 134,693 | k gallons |
| Total number of gallons billed to your customers (total customer consumption) | [D] | 110,028 | k gallons |
| System losses: **([C] - [D]) x 100% = [E] / [A]** | [E] | **14.84%** | N/A |
| Sources of Purchased water | N/A | | |

* No raw water purchased

## SECTION IX - RATE DESIGN - WATER *

### A. VARIABLE RATE CALCULATIONS *

Table IX. A.

| | Line | | Instructions |
|---|---|---|---|
| Total Variable Costs | [A] | $ 232,546 | From Table VI. A., Line [T], Box c |
| Total # of Gallons Billed to Customers * | [B] | 110,913,770 | From Table VIII, Line [B] |
| Total # of 1,000 Gallons billed * | [C] | 110,914 | Divide Line [B] by 1000 |
| Variable Cost per 1,000 gallons | [D] | $2.10 | Divide Line [A] by Line [C]<br>Transfer to Table IX. B., Lines [E] through [J], Box c |

### B. BASE RATE CALCULATIONS *

Table IX. B.

| | | Line | | # of 1000 gallons in base bill | Variable cost per 1,000 gals | Variable cost to be added to base rate | Total base rate per meter size |
|---|---|---|---|---|---|---|---|
| Total fixed costs - From Table VI. A., Line [T], Box c or Line [U], Box d | | [A] | $ 802,647 | | | | |
| Total meter equivalents at end of test year - From Table VII, Line [L] | | [B] | 1,415 | | | | |
| Base charge per meter equivalent or for each unmetered connection [A]÷[B] and then divide by 12 | | [C] | $47.26 | | | | |
| Base charge per meter size | | | | | | | |
| 5/8" x 3/4" | Multiply [C] by 1 | [D] | $47.26 | 0 | $2.10 | $0.00 | $47.26 |
| 1" | Multiply [C] by 2.5 | [E] | $118.16 | 0 | $2.10 | $0.00 | $118.16 |
| 1½" | Multiply [C] by 5.0 | [F] | $236.32 | 0 | $2.10 | $0.00 | $236.32 |
| 2" | Multiply [C] by 8.0 | [G] | $378.11 | 0 | $2.10 | $0.00 | $378.11 |
| 3" | Multiply [C] by 16.0 | [H] | $756.22 | 0 | $2.10 | $0.00 | $756.22 |
| 4" | Multiply [C] by 25.0 | [I] | $1,181.59 | 0 | $2.10 | $0.00 | $1,181.59 |
| 6" | Multiply [C] by 50.0 | [J] | $2,363.17 | 0 | $2.10 | $0.00 | $2,363.17 |
| 8" | Multiply [C] by 80.0 | [K] | $3,781.08 | 0 | $2.10 | $0.00 | $3,781.08 |
| 10" | Multiply [C] by 115.0 | [L] | $5,435.30 | 0 | $2.10 | $0.00 | $5,435.30 |
| 12" | Multiply [C] by 250.0 | [m] | $11,815.86 | 0 | $2.10 | $0.00 | $11,815.86 |

* Adjusted volumes to reflect year-end number of customers and flat-rate customers.

## SECTION IX - RATE DESIGN - SEWER

### A. VARIABLE RATE CALCULATIONS

Table IX. A.

| | Line | | Instructions |
|---|---|---|---|
| Total Variable Costs | [A] | $ 202,162 | From Table VI. A., Line [T], Box c |
| Total # of Gallons Treated | [B] | 68,943,100 | From Table VIII, Line [B] |
| Total # of 1,000 Gallons Treated | [C] | 68,943 | Divide Line [B] by 1000 |
| Variable Cost per 1,000 gallons | [D] | $2.93 | Divide Line [A] by Line [C]<br>Transfer to Table IX. B., Lines [E] through [J], Box c |

### B. BASE RATE CALCULATIONS *

Table IX. B.

| | | Line | | # of 1000 gallons in base bill | Variable cost per 1,000 gals | Variable cost to be added to base rate | Total base rate per meter size |
|---|---|---|---|---|---|---|---|
| Total fixed costs - From Table VI. A., Line [T], Box c or Line [U], Box d * | | [A] | $ 544,659 | | | | |
| Total meter equivalents at end of test year - From Table VII, Line [L] | | [B] | 778 | | | | |
| Base charge per meter equivalent or for each unmetered connection [A]÷[B] and then divide by 12 | | [C] | $58.32 | | | | |
| Base charge per meter size | | | | | | | |
| 5/8" x 3/4" | Multiply [C] by 1 | [D] | $58.32 | 0 | $2.93 | $0.00 | $58.32 |
| 3/4" | Multiply [C] by 1.5 | [E] | $87.49 | 0 | $2.93 | $0.00 | $87.49 |
| 1" | Multiply [C] by 2.5 | [E] | $145.81 | 0 | $2.93 | $0.00 | $145.81 |
| 1½" | Multiply [C] by 5.0 | [F] | $291.62 | 0 | $2.93 | $0.00 | $291.62 |
| 2" | Multiply [C] by 8.0 | [G] | $466.60 | 0 | $2.93 | $0.00 | $466.60 |
| 3" | Multiply [C] by 15.0 | [H] | $874.87 | 0 | $2.93 | $0.00 | $874.87 |

* Includes fixed and variable costs.

E

# WATER UTILITY TARIFF
# FOR
# Southeast Region - Gray

Aqua Texas, Inc. and Aqua Utilities, Inc.
dba Aqua Texas
(Utility Name)

1106 Clayton Lane, Suite 400W
(Business Address)

Austin, Texas 78723
(City, State, Zip Code)

(512) 990-4400
(Area Code/Telephone)

This tariff is effective for utility operations under the following Certificate of Convenience and Necessity:

11157 and 13203

This tariff is effective in the following counties:

Chambers, Liberty and Jefferson

This tariff is effective in the following cities or unincorporated towns (if any):

City of Old-River Winfree, City of Beach City

**The rates set or approved by the city for the systems entirely within its corporate boundary are not presented in this tariff. Those rates are not under the original jurisdiction of the TCEQ and will have to be obtained from the city or utility. This tariff applies to outside city customers of systems that provide service inside and outside of a city's corporate boundary.**

This tariff is effective in the following subdivisions and public water systems:

See attached Table for Southeast Region – Gray

TABLE OF CONTENTS
The above utility lists the following sections of its tariff (if additional pages are needed for a section, all pages should be numbered consecutively):

**SOAH DOCKET NO. 582-14-1051**
**TCEQ DOCKET NO. 2013-2007-UCR**

| | | |
|---|---|---|
| **APPLICATION OF AQUA TEXAS, INC. AND AQUA UTILITIES, INC. D/B/A AQUA TEXAS FOR WATER AND SEWER RATE/TARIFF CHANGES IN THE SOUTHEAST REGION IN CHAMBERS, LIBERTY, AND JEFFERSON COUNTIES, CCN NOS. 11157, 13203, 20453, AND 21065, APPLICATION NOS. 37696-R AND 37697-R** | § | **BEFORE THE STATE OFFICE** |
| | § | **OF** |
| | § | **ADMINISTRATIVE HEARINGS** |

**AQUA TEXAS' RESPONSES TO OPUC'S FIRST REQUESTS FOR PRODUCTION OF DOCUMENTS**

To: Office of Public Utility Counsel, by and through its attorneys of record, Jim Rourke and Ross Henderson, 1701 N. Congress, Ave., Suite 9-180, P.O. Box 12397, Austin, Texas 78711-2397

Aqua Texas, Inc. and Aqua Utilities, Inc. d/b/a Aqua Texas ("Aqua Texas") serve the attached Responses to the Office of Public Utility Counsel's ("OPUC") First Requests for Production of Documents pursuant to Rules 191-198 of the Texas Rules of Civil Procedure upon OPUC by and through its attorneys of record.

**Respectfully submitted,**

**THE TERRILL FIRM, P.C.**

By: _____

Paul M. Terrill III
State Bar No. 00785094
Geoffrey P. Kirshbaum
State Bar No. 24029665
810 West 10th Street
Austin, Texas 78701
Tel: (512) 474-9100
Fax: (512) 474-9888

**Law Offices of Mark H. Zeppa, PC**

Mark H. Zeppa
State Bar No. 22260100
Law Offices of Mark H. Zeppa, PC
4833 Spicewood Springs Rd #202
Austin, Texas 78759-8435
Tel: (512) 346-4011
Fax: (512) 346-6847

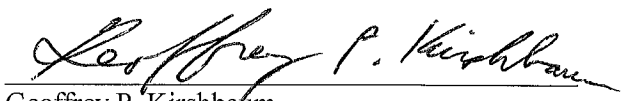
**ATTORNEYS FOR AQUA TEXAS, INC. AND AQUA UTILITIES, INC. D/B/A AQUA TEXAS ("AQUA TEXAS")**

## CERTIFICATE OF SERVICE

I hereby certify that on February 11, 2014, a true and complete copy of the foregoing was sent to the following by facsimile, overnight delivery, or by first class mail:

| Parties | Representative / Address | Phone/Fax/E-mail Address |
|---|---|---|
| TCEQ Executive Director | Kayla Murray<br>Jessica Rogers<br>Executive Director, TCEQ<br>MC-175<br>P.O. Box 13087<br>Austin, TX 78711-3087 | Tel: (512) 239-4761<br>Fax: (512) 239-0606<br>kayla.murray@tceq.texas.gov<br>jessica.rogers@tceq.texas.gov |
| Office of Public Interest Counsel of TCEQ | Eli Martinez<br>TCEQ, OPIC<br>MC-103<br>P.O. Box 13087<br>Austin, TX 78711-3087 | Tel: (512) 239-6363<br>Fax: (512) 239-6377<br>eli.martinez@tceq.texas.gov |
| Office of Public Utility Counsel | Jim Rourke<br>Ross Henderson<br>Office of Public Utility Counsel<br>PO Box 12397<br>Austin, TX 78711-2397 | Tel: (512) 936-7510<br>Fax: (512) 936-7525<br>jim.rourke@opuc.texas.gov<br>ross.henderson@opuc.texas.gov |
| Tracie B. Fisher | Tracie B. Fisher<br>15203 Victoria Ln<br>Baytown, TX 77523 | Tel: (713) 438-2732<br>tracie@traciesplace.us |
| Ben Connealy | Ben Connealy<br>8626 Briar oaks Ln<br>Bayotwn, TX 77523 | Tel: (832) 725-6600<br>benconnealy@yahoo.com |

| Parties | Representative / Address | Phone/Fax/E-mail Address |
|---|---|---|
| Crawdads, Inc. | David K. Moore<br>870 19th St<br>Beaumont, TX 77706 | Tel: (409) 658-9291<br>Fax: (409) 745-1042<br>mycrawdad@aol.com |



Geoffrey P. Kirshbaum

## WITHHOLDING STATEMENT

Privileged information and materials responsive to these requests will be withheld by Aqua Texas, Inc. and Aqua Utilities, Inc. d/b/a Aqua Texas ("Aqua Texas") pursuant to TEX. R. CIV. P. 193.3(a). Under TEX. R. CIV. P. 193.3(c), Aqua Texas will not and is not required to assert applicable attorney-client or attorney work product privileges, including privileges related to consulting-only experts. Aqua Texas will assert other privileges, as applicable, within its objections and separate responses below. Pursuant to TEX. R. CIV. P. 193.3(d), Aqua Texas does not intend to waive any claim of privilege by the inadvertent production of privileged materials.

Subject to these privileges and the objections below, Aqua Texas is undertaking a good faith effort to obtain information and search for the documents responsive to the Office of Public Utility Counsel's First Request for Production of Documents to Aqua Texas, Inc. and Aqua Utilities, Inc. d/b/a Aqua Texas. Aqua Texas reserves the right to change or supplement its responses in accordance with TEX. R. CIV. P. 193.5, to produce additional documents, and to produce additional evidence at any hearing. Aqua Texas reserves the right to redact from otherwise responsive and non-privileged documents portions that contain information that is irrelevant, non-responsive, or privileged.

## GENERAL OBJECTIONS

Aqua Texas generally objects to OPUC's discovery requests to the extent they call for responses beyond what is required under the Texas Rules of Civil Procedure. Further, Aqua Texas objects to OPUC's attempt to evade the limitation on the number of permitted interrogatories under the Texas Rules of Civil Procedure by framing such questions in the form of certain requests for production below.

## RESPONSES

**1.** Please provide the completed "Aqua Texas, Inc. Due Diligence Checklist" along with all documents, analysis, and communications that were responsive to the individual checklist items.

**Objection:** This request is vague and lacks specificity as to which checklist is referenced in that the request simply refers to "the completed" checklist. Aqua Texas uses the referenced checklist for all acquisitions. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas responds with the presumption that this request is for a copy of the specific "Aqua Texas, Inc. Due Diligence Checklist" used for Aqua Texas' acquisition of the Southeast Region-Gray assets. Previously, Aqua Texas provided the referenced checklist to OPUC and the other parties. After a diligent search, a completed checklist specific to Aqua Texas' acquisition of the Southeast Region-Gray systems as requested was not located. However, a checklist was used during the acquisition process. Typically, the checklist is not completed as suggested by the request. Rather, the checklist is provided to the seller as a means of informing him of different types of records Aqua Texas seeks to review during its due diligence process. Other non-privileged documents responsive to this request are attached to this response. Additional non-privileged documents responsive to this request are voluminous business records which will be made available for inspection and copying at Aqua Texas' office

by appointment. Arrangements to review and copy those documents must be made directly with counsel for Aqua Texas, Geoff Kirshbaum, The Terrill Firm, P.C. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**2.** If not contained in the response to request for production 1 above, please produce and describe all documents obtained and created during due diligence to support the prudent financial decision to acquire the assets.

**Objection:** This request is vague and lacks specificity as to which assets are being referenced. Further, this request is unduly burdensome and goes beyond Texas Rules of Civil Procedure requirements in that it purports to require a description of produced documents, which are voluminous, in addition to production. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas responds with the presumption that the request relates to its Southeast Region-Gray system assets. Some non-privileged documents responsive to this request are attached to this response. Additional non-privileged documents responsive to this request are voluminous business records which will be made available for inspection and copying at Aqua Texas' office by appointment. Arrangements to review and copy those documents must be made directly with counsel for Aqua Texas, Geoff Kirshbaum, The Terrill Firm, P.C. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**3.** If not contained in the response to request for production 1 above, please produce and describe all documents obtained or created for the purpose of valuing the system and its components, including the depreciation study by John Spanos and/or Gannett Fleming and excluding the Waggy Engineering trending studies included in the application.

**Objection:** This request is vague and lacks specificity as to which "system" is referenced. Further, this request is unduly burdensome and goes beyond Texas Rules of Civil Procedure requirements in that it purports to require a description of produced documents, which are voluminous, in addition to production. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas responds with the presumption that the request relates to its Southeast Region-Gray systems. Some non-privileged documents responsive to this request are attached to this response. Additional non-privileged documents responsive to this request are voluminous business records which will be made available for inspection and copying at Aqua Texas' office by appointment. Arrangements to review and copy those documents must be made directly with counsel for Aqua Texas, Geoff Kirshbaum, The Terrill Firm, P.C. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**4.** If not contained in response to request for production 1 above, please provide any documents or communications containing analysis that would support the prudent financial decision to acquire the assets.

**Objection:** This request is vague and lacks specificity as to which "assets" are referenced. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas responds with the presumption that the request relates to its Southeast Region-Gray system assets. Some non-privileged documents responsive to this request are attached to this response. Additional non-privileged documents responsive to this request are voluminous business records which will be made available for inspection and copying at Aqua Texas' office by appointment. Arrangements to review and copy those documents must be made directly with counsel for Aqua Texas, Geoff Kirshbaum, The Terrill Firm, P.C. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**5.** If not contained in the response to request for production 1 above, please provide any working papers, calculations, emails, or other physical evidence supporting the determination of the purchase price.

**Objection:** This request is vague and lacks specificity as to "the purchase price" referenced. Further, this request seek information that is not relevant and not reasonably calculated to lead to the discovery of admissible evidence. The purchase price paid to acquire a water or sewer system is not relevant to utility ratemaking under the Texas Water Code. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas responds with the presumption that the request relates to the purchase price it paid for its Southeast Region-Gray system assets. Some non-privileged documents responsive to this request are attached to this response. Additional non-privileged documents responsive to this request are voluminous business records which will be made available for inspection and copying at Aqua Texas' office by appointment. Arrangements to review and copy those documents must be made directly with counsel for Aqua Texas, Geoff Kirshbaum, The Terrill Firm, P.C. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**6.** If not contained in the response to request for production 1 above, for transfers of the systems that took place prior to the acquisition by Aqua Texas, please produce the documents and communications received from the seller or any third-part[y] associated with, showing, accumulating, or communicating the previous purchase price of any of the systems included in this application.

**Objection:** This request seeks information that is not relevant and not reasonably calculated to lead to the discovery of admissible evidence. The purchase price paid to acquire a water or sewer system is not relevant to utility ratemaking under the Texas Water Code. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Some non-privileged documents responsive to this request are attached to this response. Additional non-privileged documents responsive to this request are voluminous

business records which will be made available for inspection and copying at Aqua Texas' office by appointment. Arrangements to review and copy those documents must be made directly with counsel for Aqua Texas, Geoff Kirshbaum, The Terrill Firm, P.C. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**7.** If not contained in response to request for production 1 above, please produce any documents or communications relating to negotiations for your purchase of the systems included in this application.

**Response:** Some non-privileged documents responsive to this request are attached to this response. Additional non-privileged documents responsive to this request are voluminous business records which will be made available for inspection and copying at Aqua Texas' office by appointment. Arrangements to review and copy those documents must be made directly with counsel for Aqua Texas, Geoff Kirshbaum, The Terrill Firm, P.C. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**8.** Please provide the documents, communications, and working papers supporting your purchase accounting treatment in accordance with generally accepted accounting principles, along with the purchase accounting journal entries.

**Response:** Please see Aqua Texas 2012 General Ledger. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**9.** Please provide the documents, communications, and working papers supporting the distribution of the purchase price for federal income tax purposes.

**Objection:** This request is vague and lacks specificity as to which "purchase price" is referenced. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas will respond with the presumption that the request relates to the purchase price it paid for its Southeast Region-Gray system assets. Aqua Texas has not identified documents responsive to this request at this time. However, Aqua Texas is still in the process of conducting a diligent search and may supplement this response at a later date if responsive documents are identified. Aqua Texas may also supplement this response with its prefiled direct testimony and exhibits.

**10.** For each of the Systems and the Wastewater Treatment Facility shown on Page 4 of the Application, please provide, the numbers of connections and taps (separately identified) at the time of acquisition, the numbers of connections and taps (separately identified) at each year end for 2011, 2012, and 2013, and the platted number of residential lots expected in each system.

**Objection:** This request is improper because: (1) it is actually a series of interrogatories improperly framed as a request for production; and (2) it purports to

impermissibly require Aqua Texas to create a document for production that does not already exist or produce documents in a format different from how they presently exist. Further, this request is vague and lacks specificity as to which type of "connections" are referenced (e.g., active vs. inactive vs. total) and what is meant by "separately identified". Further, the request seeks information not relevant to this rate case, not reasonably calculated to lead to the discovery of admissible evidence, and, in part, calls for speculation by Aqua Texas. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** A document that shows the number of both total (active and inactive) and active connections (separately stated) at the various times referenced for each Southeast Region-Gray water and sewer system is attached as AT-GRAY 001486-001489. The number of taps equates to total connection figures (including both active and inactive connections). Active connections are provided as of the last day of December for each year. None of the figures provided in this response are reflective of billing determinants used in the Southeast Region-Gray rate application. Aqua Texas stands on its objection to the extent this request seeks additional documents or information beyond that provided. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**11.** For the items included in rate base and the expenses included in cost of service, please provide monthly balances for all balance sheet and allocated expense accounts and subaccounts showing the Aqua Texas account number, and the NARUC account number to which it was mapped for the period from December 1, 2011 through December 31, 2012.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Also, the requested information for December 2011 is not relevant and not reasonably calculated to lead to admissible evidence given that the test year used in the application is 2012. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas stands on the objection with respect to the month of December 2011. However, a spreadsheet labeled Capital-Rate Base- Allocations that is responsive to this request as to 2012 information is attached. Information responsive to this request may also be found in Aqua Texas' 2012 General Ledger. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**12.** Please provide copies of the portions of a system generated trial balance showing the account numbers used to determine the expenses to be allocated and included in this case.

**Response:** Documents responsive to this request are attached as AT-GRAY 001490-001498.

**13.** Please provide copies of the tax-basis asset schedules for the assets included in this application for the tax years ended 2011, 2012, and 2013.

**Objection:** This request seeks information that is not relevant and is not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas has not identified documents responsive to this request at this time. However, Aqua Texas is still in the process of conducting a diligent search and may supplement this response at a later date if responsive documents are identified. Aqua Texas may also supplement this response with its prefiled direct testimony and exhibits.

**14.** Please provide any documents or communications from TCEQ relating to the original cost, accumulated depreciation, depreciation expense, sales price, or developer contributions for any of the systems included in this application.

**Objection:** This request is overly broad, unduly burdensome, lacks specificity, and is not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** After a diligent search, Aqua Texas has not identified any documents responsive to this request. However, if such documents existed, they would be publicly available from TCEQ and equally available to OPUC as to Aqua Texas. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**15.** For each of the known and measurable changes to the original cost of plant in service shown on Page 10 and 26 of the Application,

a. With reference to Page 4 of the Application, please indicate the system(s) to which each of the adjustments relate(s).

b. Please provide the working papers supporting each of the adjustments,

c. Please describe the purpose of each of the adjustments and why they are appropriate adjustments to test year end.

d. Please indicate whether each of the adjustments relate to expansion of the current system(s) in terms of service area(s) or capacity(ies), or whether the adjustments relate to replacements of existing systems.

   i If replacements, please provide documents and working papers supporting the retirement of the related obsolete assets along with evidence that the related retirements are included in the test year.

**Objection:** This request is improper because, with the exception of 15.b. and 15.d.i, it is actually a series of interrogatories improperly framed as a request for production

with subparts. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Please find Aqua Texas' response to each respective subpart below:

a. Each water known and measurable item relates to the Gray Utility Service water system (PWS ID No. 0360005) with one exception. $200,563.19 of the known and measurable change amount for "Wells and Springs (NARUC Account No. 307.00) was for a treatment system that is now part of the Hackberry Creek Subdivision water system (PWS ID No. 0360100) and was needed to address a drinking water quality issue inherited from Gray Utility Service, LLC. The other known and measurable items relate to the Veranda Wastewater Treatment Facility System, which is the only sewer system in the Aqua Texas Southeast Region - Gray service area.

b. Documents responsive to this request are attached as AT-GRAY 001499.

c. Each known and measurable adjustment item included in the Southeast Region - Gray rate application represents a capital improvement item that was completed and placed in service as of the time the application was filed. Therefore, they present known and measurable changes to Aqua Texas' Southeast Region-Gray used and useful rate base assets, original cost, accumulated depreciation, net book value, and depreciation expense totals that should be considered in setting rates for the application systems.

d. Each known and measurable change represents a replacement of existing system assets with the exception of the Hackberry Creek Subdivision water system addition. The Hackberry equipment was added to address a water quality problem inherited from Gray Utility Service, LLC.

    i. Aqua Texas has not identified documents responsive to this request at this time. However, Aqua Texas is still in the process of conducting a diligent search and may supplement this response at a later date if responsive documents are identified.

Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**16.** For the $3.8 million dollars invested in system improvements since acquisition, please provide the amounts invested by calendar year, and show how those invested amounts result in the original cost of plant used in determining the original cost amounts shown on Pages 10 and 26 of your Application.

**Response:** Documents responsive to this request are attached as AT-GRAY 001500-001506. The $3.8 million dollar figure includes approximately $2.36 million in costs for the new

wastewater treatment plant constructed for the Aqua Texas Southeast Region-Gray/Veranda Wastewater Treatment Facility sewer system. These costs are not included on Pages 10 and 26 of the application and are not part of the rate base requested in this case. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**17.** For the Common Assets shown on Pages 2 and 4 of the Application, please provide the reports, calculations, working papers, communications, and other documents relied upon to derive the allocation percentages of 4.24% and 1.93% for the Water Systems and 2.39% and 1.09% for the Wastewater Systems.

**Objection:** This request is vague and lacks specificity as to which pages in the application are being referenced. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas responds with the presumption that the request refers to Pages 2 and 4 of Application, Attachment 2. A spreadsheet titled Capital-Rate Base-Allocations responsive to this request is attached. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**18.** Please provide the schedule shown on Page 18 of the application for calendar years 2011 and 2013, or the production and consumption information shown on Page 18 of the application for calendar years 2011 and 2013 such that the system losses for each of those years can be calculated.

**Objection:** This request seeks information that is not relevant and is not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas has not identified documents responsive to this request at this time. However, Aqua Texas is still in the process of conducting a diligent search and may supplement this response at a later date if responsive documents are identified. Aqua Texas may also supplement this response with its prefiled direct testimony and exhibits.

**19.** Please provide monthly test year base revenues separately for water and sewer in a format and detail level consistent with that provided in Attachment 2 - Workpapers, pages 13-16.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Further, this request is actually multiple interrogatories improperly framed as a request for production. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Documents responsive to this request are attached as AT-GRAY 001507-001514. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**20.** Please provide the amount of Other Revenues billed in 2011 and 2013 separately to water and sewer customers.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Further, this request is actually an interrogatory improperly framed as a request for production. This request also seeks information that is not relevant, is not reasonably calculated to lead to the discovery of admissible evidence, and is unduly burdensome. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Documents containing this information in the format requested are not available and would have to be created. The work to create these documents is very time consuming and unduly burdensome. Therefore, Aqua Texas stands on the objection.

**21.** By service provider and vendor, please provide a schedule of rate case expenses incurred to date along with an estimate of costs to complete this case.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Further, this request is actually an interrogatory improperly framed as a request for production. This request also, in part, seeks information that calls for speculation by Aqua Texas and is unduly burdensome. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Documents responsive to this request, in part, are attached as AT-GRAY 001515. Aqua Texas declines to provide an estimate of costs to complete this case at this time and stands on its objection with respect to that part of the request. This case is still in its early stages and rate case litigation costs are typically driven by opposition. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**22.** Please provide additional detail by functional account and subaccount (such as office supplies, office rent, etc.) for the $180,462 in Office Expenses shown on Page 11 of the working papers.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Further, this request is actually an interrogatory improperly framed as a request for production. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Documents responsive to this request are attached as AT-GRAY 000699-000746. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**23.** Please provide additional detail by functional account, subaccount, and vendor for the $66,626 in Miscellaneous Expenses shown on Page 11 of the working papers.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Further, this request is actually an interrogatory improperly framed as a request for production. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Documents responsive to this request are attached as AT-GRAY 000747-000754. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**24.** Please provide the tax bills and supporting documentation for the $177,590 in Property and Other Taxes shown on Page 11 of the working papers.

**Response:** Please see Application, pages 16 and 32, and compare to Attachment 2, page 11 of the Application (the work papers) as referenced. The $177,590 amount referenced in the request was not used in Aqua Texas' development of its cost of service and rates in the application. Instead, lower amounts reflected in the "Property and other taxes" rows on pages 16 and 32 of the Application were used. The amounts used are $28,466 for water and $11,138 for sewer. These lower amounts are based on assets specific to the Southeast Region-Gray systems. Documents supporting these amounts are attached as AT-GRAY 000755-000863. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**25.** For the allocated share of Aqua Texas' Southeast Region operating costs included in this application, please provide the allocation working papers, providing at minimum the Aqua Texas account numbers along with any subaccount numbers, the NARUC account number to which it was mapped, the functional nature of the cost, the total test year cost, the amount capitalized, the test year expense, the percentage allocated to the Systems included in this Application, and the total allocated expense to each System included in this Application. Please provide reports, calculations, working papers, communications, and other documents relied upon to derive the allocated amounts included in this application.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** A spreadsheet titled Capital-Rate Base-Allocations responsive to this request is attached. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**26.** For the allocated share of Aqua Texas' Corporate operating costs included in this application, please provide the allocation working papers, providing at minimum the Aqua Texas account numbers along with any subaccount numbers, the NARUC account number to which it was mapped, the functional nature of the cost, the total test year cost, the amount capitalized, the test year expense, the percentage allocated to the Systems included in this Application, and the total allocated expense to each System included in this Application. Please provide reports, calculations, working papers, communications, and other documents relied upon to derive the allocated amounts included in this application.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** A spreadsheet titled Capital-Rate Base-Allocations responsive to this request is attached. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**27.** Please provide a copy of the revenue deficiency calculation by system and current rates.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Further, this request is actually an interrogatory improperly framed as a request for production. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Documents responsive to this request are attached as AT-GRAY 000864-000866. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**28.** Please provide copies of all bond convenants applicable to the debt issuances listed on pages 13 and 29 of the Company's rate application.

**Response:** Documents responsive to this request are attached as AT-GRAY 000925-001247. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**29** Please provide a copy of Aqua America's most recent indenture.

**Response:** After a diligent search, Aqua Texas has not identified any documents responsive to this request.

**30.** Please provide all Moody's, Standard & Poor's and Fitch reports for Aqua America, Aqua Texas and all other Aqua America subsidiaries issued during 2011-2013.

**Objection:** This request seeks information that is not relevant, is not reasonably calculated to lead to the discovery of admissible evidence, and is unduly burdensome. The information sought is publicly available and is equally available to OPUC as to Aqua Texas. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas has identified copies of some documents within its possession, custody, or control that are responsive to this request. Those documents are attached as AT-GRAY 000867-000887. Other responsive documents may be available in the public domain. The documents requested are not Aqua Texas publications.

**31.** Please provide copies of debt prospectuses and/or bond purchase agreement for all the debt obligations listed on pages 13 and 29 of the rate case application.

**Response:** Documents responsive to this request are attached as AT-GRAY 000925-001247. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**32.** Please provide copies of any rate of return on equity studies conducted by Aqua Texas and/or Aqua America, or on its behalf, in the last two years. This request includes any DCF analysis of Aqua America and comparable companies or analyses utilizing alternative cost of equity methodologies.

**Objection:** This request is overly broad, seeks information that is not relevant, and is not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** After a diligent search, Aqua Texas has not identified any documents responsive to this request.

**33.** What were the most recently allowed returns of equity (ROEs) authorized for Aqua America regulated subsidiaries by regulatory authorities since 2010. Please provide the date of each regulatory authority decision.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Further, this request is actually an interrogatory improperly framed as a request for production. Further, this request is overly broad, seeks information that is not relevant, is not reasonably calculated to lead to the discovery of admissible evidence, and is unduly burdensome. The information sought is publicly available and is equally available to OPUC as to Aqua Texas. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Aqua Texas stands on the objection. However, documents containing information responsive to this request are available in the public domain.

**34.** Provide complete copies of all Aqua Texas internal income statements, cash flow statements and balance sheets for 2011 and 2012.

**Objection:** This request seeks information that is not relevant and is not reasonably calculated to lead to the discovery of admissible evidence. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Documents responsive to this request are attached as AT-GRAY 000888-000892. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**35.** Please provide a chart or diagram that shows the ownership hierarchy of Aqua Texas, Aqua Utilities, and their affiliates, and all subsidiaries of Aqua America. Please include all parent, intermediate, and subsidiary companies and partnerships.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** After a diligent search, Aqua Texas has not identified any documents responsive to this request. However, a list containing information similar to that requested was identified and is attached as AT-GRAY 000893-000894. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**36.** Please provide a copy of the final order in the 2004 Aqua Texas rate case.

**Response:** Documents responsive to this request are attached as AT-GRAY 000895-000924.

**37.** Please provide a copy of Aqua Texas' acquisition file for the Gray water and sewer systems. If the file is voluminous, please provide information on when and where it will be available for inspection.

**Response:** Some non-privileged documents responsive to this request are attached to this response. Additional non-privileged documents responsive to this request are voluminous business records which will be made available for inspection and copying at Aqua Texas' office by appointment. Arrangements to review and copy those documents must be made directly with counsel for Aqua Texas, Geoff Kirshbaum, The Terrill Firm, P.C. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

**38.** Please provide documents that show how the Aqua Texas Southeast Region costs and assets were allocated to the various water and sewer systems in the region in the most recent rate case of Aqua Texas before this case.

**Objection:** Aqua Texas objects to this request to the extent it requires Aqua Texas to create documents for production that do not already exist or produce documents in a format different from how they presently exist. Further, this request seeks information that is not relevant, is not reasonably calculated to lead to the discovery of admissible evidence, and is unduly burdensome. The information sought is publicly available and is equally available to OPUC as to Aqua Texas. Subject to and without waiving the foregoing objection, Aqua Texas responds as follows.

**Response:** Documents responsive to this request related to Aqua Texas' 2010 Southeast Region water rate case and Aqua Texas' 2004 statewide rate case which, in pertinent part, set rates for Aqua Texas' Southeast Region sewer systems are publicly available from TCEQ. Aqua Texas may supplement this response with its prefiled direct testimony and exhibits.

AQUA TEXAS, INC.

Austin, Texas

# DEPRECIATION STUDY

## CALCULATED ANNUAL DEPRECIATION ACCRUALS

## RELATED TO WASTEWATER PLANT

## AS OF DECEMBER 31, 2010

GANNETT FLEMING, INC. - VALUATION AND RATE DIVISION

Harrisburg, Pennsylvania

Gannett Fleming

*Excellence Delivered As Promised*

August 26, 2013

Aqua Texas, Inc.
1106 Clayton Lane, Suite 400W
Austin, TX 78723

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Attention Stan F. Szczygiel
Manager of Rates and Planning

Ladies and Gentlemen:

Pursuant to your request, we have conducted a depreciation study related to the wastewater plant of Aqua Texas, Inc. as of December 31, 2010. The attached report presents a description of the methods used in the estimation of depreciation, the summary of annual and accrued depreciation, the statistical support for the life and net salvage estimates and the detailed tabulations of annual and accrued depreciation.

Respectfully submitted,

GANNETT FLEMING, INC.

John J. Spanos

JOHN J. SPANOS
Sr. Vice President
Valuation and Rate Division

JJS:krm

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PART II. METHODS USED IN THE ESTIMATION OF DEPRECIATION



PART III. RESULTS OF STUDY

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PART III. RESULTS OF STUDY, cont.





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# PART I. INTRODUCTION

AQUA TEXAS, INC.

DEPRECIATION STUDY

CALCULATED ANNUAL DEPRECIATION ACCRUALS
RELATED TO WASTEWATER PLANT
AS OF DECEMBER 31, 2010

## PART I. INTRODUCTION

### SCOPE

This report presents the results of the depreciation study prepared for Aqua Texas, Inc. as applied to wastewater plant in service as of December 31, 2010. It relates to the concepts, methods, and basic judgments which underlie recommended annual depreciation accrual rates related to current utility plant in service.

The service life and net salvage estimates resulting from the study were based on informed judgment which incorporated analyses of historical plant retirement data as recorded through 2010; a review of Company practice and outlook as they relate to plant operation and retirement; and consideration of current practice in the wastewater industry, including knowledge of service life and salvage estimates used for other wastewater properties.

### PLAN OF REPORT

Part I, Introduction, includes brief statements of the scope and basis of the study. Part II presents descriptions of the methods used in the service life and salvage studies and the methods and procedures used in the calculation of depreciation. Part III presents the results of the study, including summary tables, survivor curve charts and life tables resulting from the retirement rate method of analysis, tabular results of the historical



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net salvage analyses, and detailed tabulations of the calculated remaining lives and annual accruals.

## BASIS OF STUDY

### Depreciation

For most accounts, the annual depreciation was calculated by the straight line method, using the average service life procedure and the remaining life basis. For certain General Plant accounts, the annual depreciation was based on amortization accounting. The calculated remaining lives and annual depreciation accrual rates were based on attained ages of plant in service and the estimated service life and salvage characteristics of each depreciable group.

### Survivor Curve Estimates

The procedure for estimating survivor curves, which define service lives and remaining lives, consisted of compiling historical service life data for the plant accounts or other depreciable groups, analyzing the historical data base through the use of accepted techniques, and forecasting the survivor characteristics for each depreciable account or group. These forecasts were based on interpretations of the historical data analyses and the probable future. The combination of the historical data and the estimated future trend yields a complete pattern of life characteristics, i.e., a survivor curve, from which the average service life and remaining service life are derived.

The historical data analyzed for life estimation purposes were compiled through 2010 from the Company's plant accounting records. Such data included plant additions, retirements, transfers and other activity recorded by the Company for each of its plant accounts and subaccounts.

The estimates of net salvage incorporated a review of experienced costs of removal and salvage related to plant retirements, and considerations of trends exhibited by the historical data. Each component of net salvage, i.e., cost of removal and salvage was stated in dollars and as a percent of retirement for purposes of estimating average future levels of the components, as well as of net salvage.

An understanding of the function of the plant and information with respect to the reasons for past retirements and the expected causes of future retirements was obtained through field trips and discussions with operating and management personnel. The supplemental information obtained in this manner was considered in the interpretation and extrapolation of the statistical analyses.

Calculation of Depreciation

The depreciation accrual rates were calculated using the straight line method, the remaining life basis, and the average service life depreciation procedure. The change to amortization accounting for certain accounts is recommended because of the disproportionate plant accounting effort required when compared to the minimal original cost of the large number of items in these accounts. An explanation of the calculation of annual and accrued amortization is presented on page II-27 of the report.



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# PART II. METHODS USED IN THE ESTIMATION OF DEPRECIATION

# PART II. METHODS USED IN THE ESTIMATION OF DEPRECIATION

## DEPRECIATION

Depreciation, in public utility regulation, is the loss in service value not restored by current repairs or covered by insurance.

Depreciation as used in accounting is a method of distributing fixed capital costs, less net salvage, over a period of time by allocating annual amounts to expense. Each annual amount of such depreciation expense is part of that year's total cost of providing utility service. Normally, the period of time over which the fixed capital cost is allocated to the cost of service is equal to the period of time over which an item renders service, that is, the item's service life. The most prevalent method of allocation is to distribute an equal amount of cost to each year of service life. This method is known as the straight line method of depreciation.

The calculation of annual depreciation based on the straight line method requires the estimation of average life and salvage. These subjects are discussed in the sections which follow.

## SERVICE LIFE AND NET SALVAGE ESTIMATION

### Average Service Life

The use of an average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve by plotting the number of units which survive at successive ages. A discussion of the general concept of survivor curves is presented. Also, the Iowa type survivor curves are reviewed.



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Survivor Curves

The survivor curve graphically depicts the amount of property existing at each age throughout the life of an original group. From the survivor curve, the average life of the group, the remaining life expectancy, the probable life, and the frequency curve can be calculated. In Figure 1 a typical smooth survivor curve and the derived curves are illustrated. The average life is obtained by calculating the area under the survivor curve, from age zero to the maximum age, and dividing this area by the ordinate at age zero. The remaining life expectancy at any age can be calculated by obtaining the area under the curve, from the observation age to the maximum age, and dividing this area by the percent surviving at the observation age. For example, in Figure 1 the remaining life at age 30 years is equal to the crosshatched area under the survivor curve divided by 29.5 percent surviving at age 30. The probable life at any age is developed by adding the age and remaining life. If the probable life of the property is calculated for each year of age, the probable life curve shown in the chart can be developed. The frequency curve presents the number of units retired in each age interval and is derived by obtaining the differences between the amount of property surviving at the beginning and at the end of each interval.

Iowa Type Curves. The range of survivor characteristics usually experienced by utility and industrial properties is encompassed by a system of generalized survivor curves known as the Iowa type curves. There are four families in the Iowa system, labeled in accordance with the location of the modes of the retirements in relationship to the average life and the relative height of the modes. The left moded curves, presented in Figure 2, are those in which the greatest frequency of retirement occurs to the left of, or prior to, average service life. The symmetrical moded curves, presented in Figure 3, are those in which the greatest frequency of retirement occurs at average service life. The right moded curves,

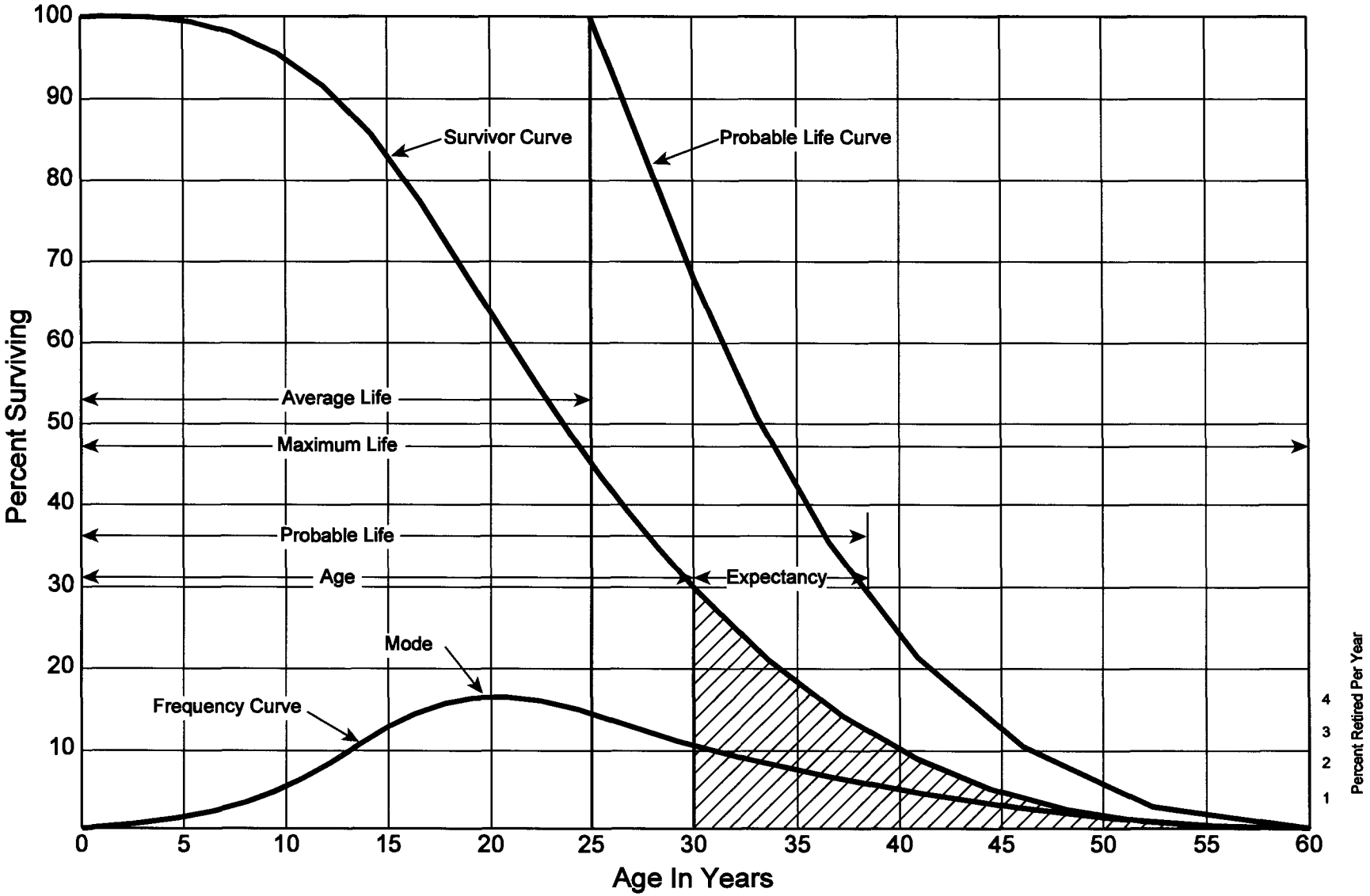


Figure 1. A Typical Survivor Curve and Derived Curves



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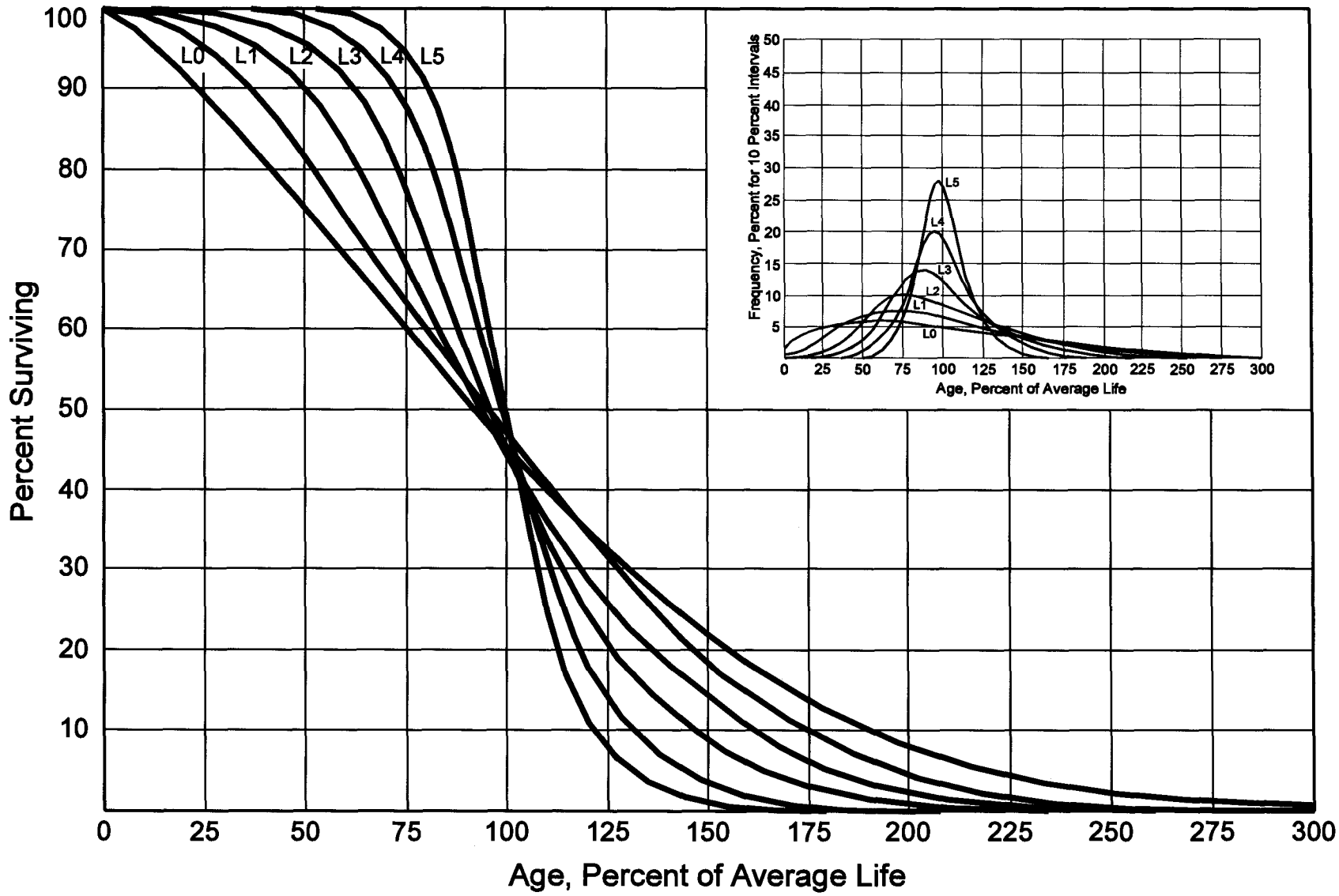


Figure 2. Left Modal or "L" Iowa Type Survivor Curves



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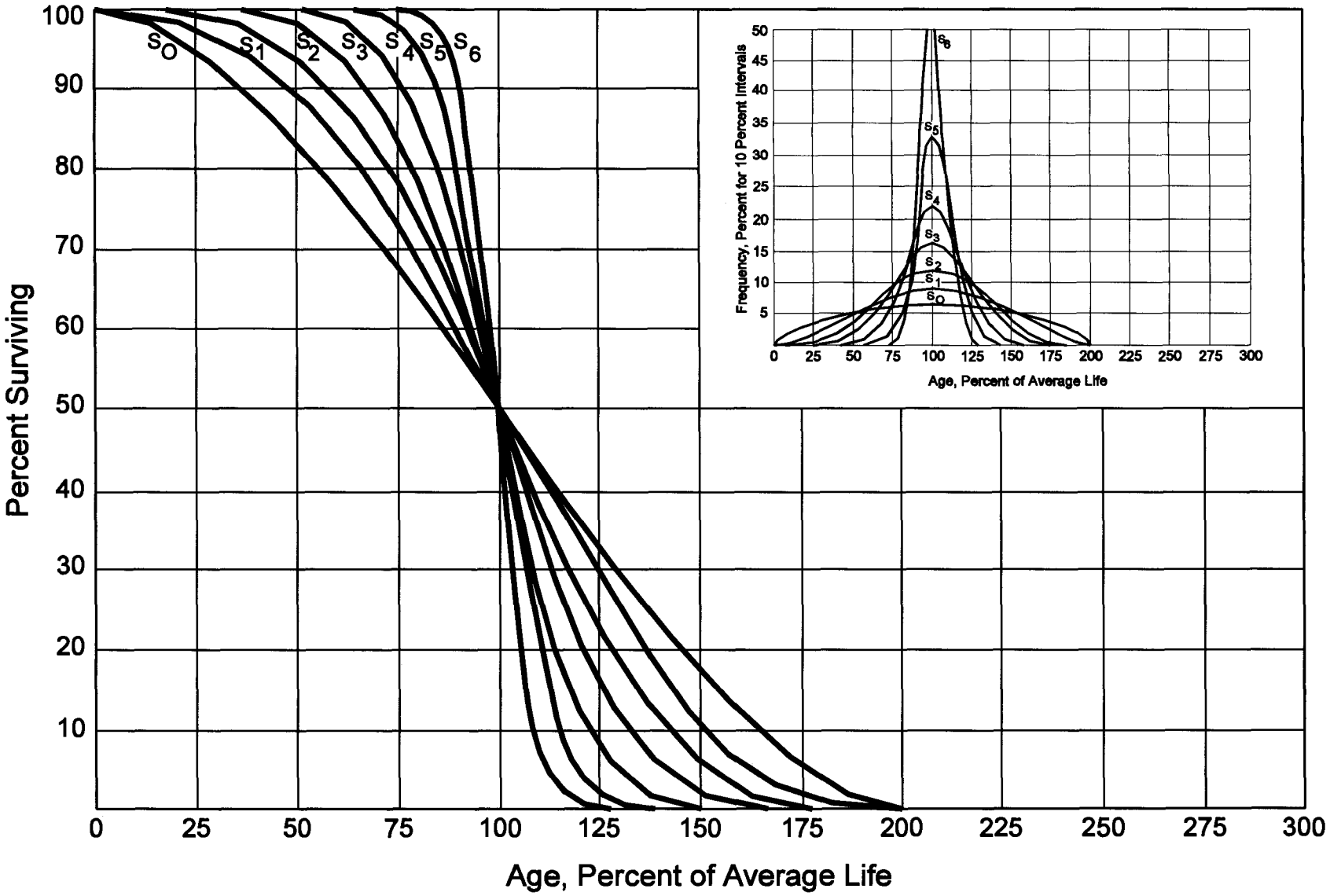


Figure 3. Symmetrical or "S" Iowa Type Survivor Curves



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presented in Figure 4, are those in which the greatest frequency occurs to the right of, or after, average service life. The origin moded curves, presented in Figure 5, are those in which the greatest frequency of retirement occurs at the origin, or immediately after age zero. The letter designation of each family of curves (L, S, R or O) represents the location of the mode of the associated frequency curve with respect to the average service life. The numbers represent the relative heights of the modes of the frequency curves within each family.

The Iowa curves were developed at the Iowa State College Engineering Experiment Station through an extensive process of observation and classification of the ages at which industrial property had been retired. A report of the study which resulted in the classification of property survivor characteristics into 18 type curves, which constitute three of the four families, was published in 1935 in the form of the Experiment Station's Bulletin 125.[1] These type curves have also been presented in subsequent Experiment Station bulletins and in the text, "Engineering Valuation and Depreciation."[2] In 1957, Frank V. B. Couch, Jr., an Iowa State College graduate student, submitted a thesis[3] presenting his development of the fourth family consisting of the four O type survivor curves.

Retirement Rate Method of Analysis

The retirement rate method is an actuarial method of deriving survivor curves using the average rates at which property of each age group is retired. The method relates to

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[1]Winfrey, Robley. Statistical Analyses of Industrial Property Retirements. Iowa State College, Engineering Experiment Station, Bulletin 125. 1935.

[2]Marston, Anson, Robley Winfrey and Jean C. Hempstead. Engineering Valuation and Depreciation, 2nd Edition. New York, McGraw-Hill Book Company. 1953.

[3]Couch, Frank V. B., Jr. "Classification of Type O Retirement Characteristics of Industrial Property." Unpublished M.S. thesis (Engineering Valuation). Library, Iowa State College, Ames, Iowa. 1957.



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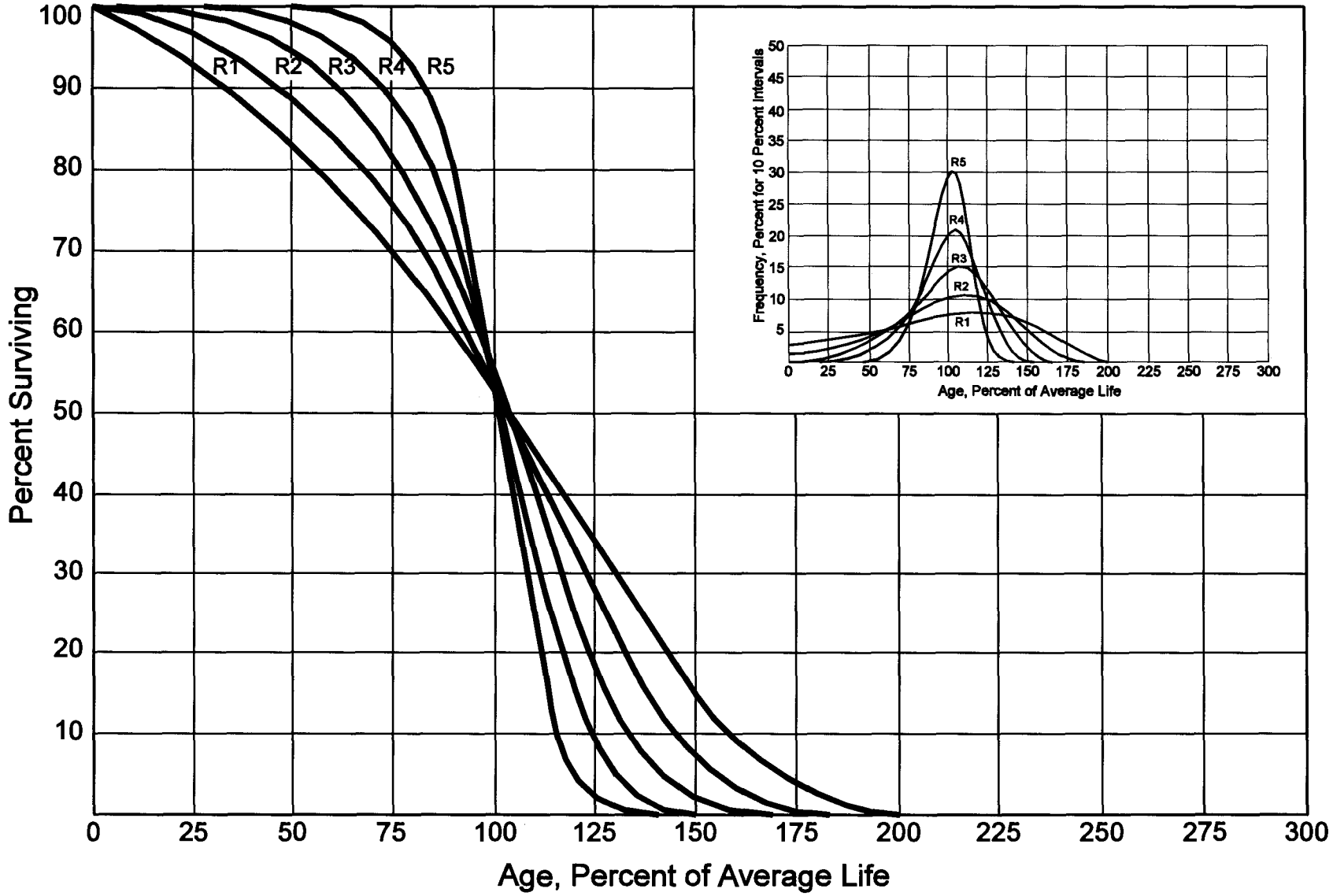


Figure 4. Right Modal or "R" Iowa Type Survivor Curves



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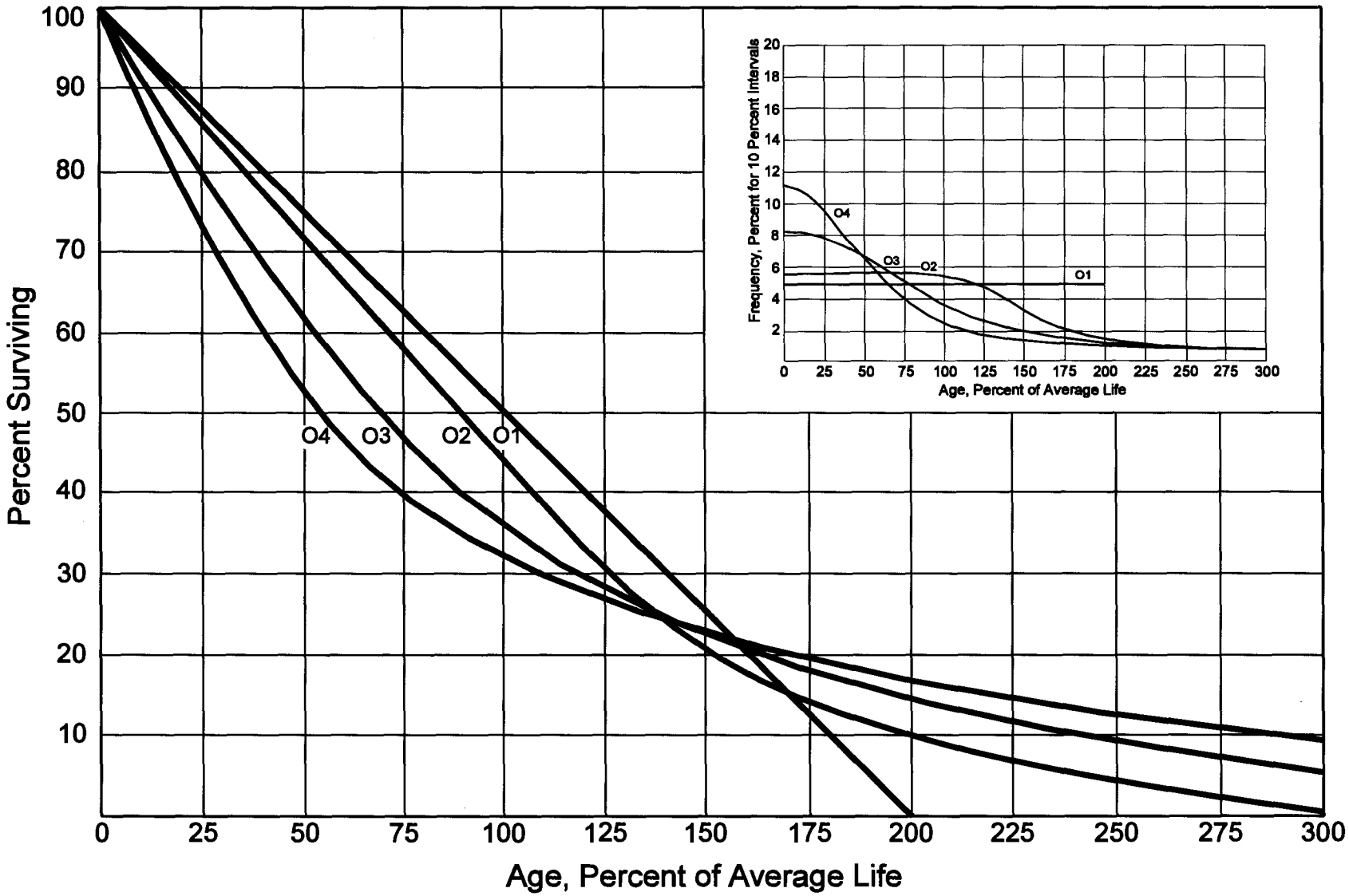


Figure 5. Origin Modal or "O" Iowa Type Survivor Curves



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property groups for which aged accounting experience is available or for which aged accounting experience is developed by statistically aging unaged amounts and is the method used to develop the original stub survivor curves in this study. The method (also known as the annual rate method) is illustrated through the use of an example in the following text, and is also explained in several publications, including "Statistical Analyses of Industrial Property Retirements,"[4] "Engineering Valuation and Depreciation,"[5] and "Depreciation Systems."[6]

The average rate of retirement used in the calculation of the percent surviving for the survivor curve (life table) requires two sets of data: first, the property retired during a period of observation, identified by the property's age at retirement; and second, the property exposed to retirement at the beginnings of the age intervals during the same period. The period of observation is referred to as the experience band, and the band of years which represent the installation dates of the property exposed to retirement during the experience band is referred to as the placement band. An example of the calculations used in the development of a life table follows. The example includes schedules of annual aged property transactions, a schedule of plant exposed to retirement, a life table, and illustrations of smoothing the stub survivor curve.

Schedules of Annual Transactions in Plant Records. The property group used to illustrate the retirement rate method is observed for the experience band 2001-2010 during which there were placements during the years 1996-2010. In order to illustrate the summation of the aged data by age interval, the data were compiled in the manner

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[4]Winfrey, Robley, Supra Note 1.

[5]Marston, Anson, Robley Winfrey, and Jean C. Hempstead, Supra Note 2.

[6]Wolf, Frank K. and W. Chester Fitch. Depreciation Systems. Iowa State University Press. 1994

presented in Schedules 1 and 2 on pages II-12 and II-13. In Schedule 1, the year of installation (year placed) and the year of retirement are shown. The age interval during which a retirement occurred is determined from this information. In the example which follows, $10,000 of the dollars invested in 1996 were retired in 2001. The $10,000 retirement occurred during the age interval between 4½ and 5½ years on the basis that approximately one-half of the amount of property was installed prior to and subsequent to July 1 of each year. That is, on the average, property installed during a year is placed in service at the midpoint of the year for the purpose of the analysis. All retirements also are stated as occurring at the midpoint of a one-year age interval of time, except the first age interval which encompasses only one-half year.

The total retirements occurring in each age interval in a band are determined by summing the amounts for each transaction year-installation year combination for that age interval. For example, the total of $143,000 retired for age interval 4½-5½ is the sum of the retirements entered on Schedule 1 immediately above the stairstep line drawn on the schedule beginning with the 2001 retirements of 1996 installations and ending with the 2010 retirements of the 2005 installations. Thus, the total amount of 143 for age interval 4½-5½ equals the sum of:

$$10 + 12 + 13 + 11 + 13 + 13 + 15 + 17 + 19 + 20.$$

In Schedule 2, other transactions which affect the group are recorded in a similar manner. The entries illustrated include transfers and sales. The entries which are credits to the plant account are shown in parentheses. The items recorded on this schedule are



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## SCHEDULE 1. RETIREMENTS FOR EACH YEAR 2001-2010
## SUMMARIZED BY AGE INTERVAL

Experience Band 2001-2010

Placement Band 1996-2010

| Year Placed | Retirements, Thousands of Dollars During Year | | | | | | | | | | Total During Age Interval | Age Interval |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| 1996 | 10 | 11 | 12 | 13 | 14 | 16 | 23 | 24 | 25 | 26 | 26 | 13½-14½ |
| 1997 | 11 | 12 | 13 | 15 | 16 | 18 | 20 | 21 | 22 | 19 | 44 | 12½-13½ |
| 1998 | 11 | 12 | 13 | 14 | 16 | 17 | 19 | 21 | 22 | 18 | 64 | 11½-12½ |
| 1999 | 8 | 9 | 10 | 11 | 11 | 13 | 14 | 15 | 16 | 17 | 83 | 10½-11½ |
| 2000 | 9 | 10 | 11 | 12 | 13 | 14 | 16 | 17 | 19 | 20 | 93 | 9½-10½ |
| 2001 | 4 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 20 | 105 | 8½-9½ |
| 2002 | | 5 | 11 | 12 | 13 | 14 | 15 | 16 | 18 | 20 | 113 | 7½-8½ |
| 2003 | | | 6 | 12 | 13 | 15 | 16 | 17 | 19 | 19 | 124 | 6½-7½ |
| 2004 | | | | 6 | 13 | 15 | 16 | 17 | 19 | 19 | 131 | 5½-6½ |
| 2005 | | | | | 7 | 14 | 16 | 17 | 19 | 20 | 143 | 4½-5½ |
| 2006 | | | | | | 8 | 18 | 20 | 22 | 23 | 146 | 3½-4½ |
| 2007 | | | | | | | 9 | 20 | 22 | 25 | 150 | 2½-3½ |
| 2008 | | | | | | | | 11 | 23 | 25 | 151 | 1½-2½ |
| 2009 | | | | | | | | | 11 | 24 | 153 | ½-1½ |
| 2010 | — | — | — | — | — | — | — | — | — | 13 | 80 | 0-½ |
| Total | 53 | 68 | 86 | 106 | 128 | 157 | 196 | 231 | 273 | 308 | 1,606 | |



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SCHEDULE 2. OTHER TRANSACTIONS FOR EACH YEAR 2001-2010
SUMMARIZED BY AGE INTERVAL

Experience Band 2001-2010 Placement Band 1996-2010

| Year Placed | Acquisitions, Transfers and Sales, Thousands of Dollars During Year | | | | | | | | | | Total During Age Interval | Age Interval |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| 1996 | - | - | - | - | - | - | 60[a] | - | - | - | - | 13½-14½ |
| 1997 | - | - | - | - | - | - | - | - | - | - | - | 12½-13½ |
| 1998 | - | - | - | - | - | - | - | - | - | - | - | 11½-12½ |
| 1999 | - | - | - | - | - | - | - | (5)[b] | - | - | 60 | 10½-11½ |
| 2000 | - | - | - | - | - | - | - | 6[a] | - | - | - | 9½-10½ |
| 2001 | | - | - | - | - | - | - | - | - | - | (5) | 8½-9½ |
| 2002 | | - | - | - | - | - | - | - | - | - | 6 | 7½-8½ |
| 2003 | | | - | - | - | - | - | - | - | - | - | 6½-7½ |
| 2004 | | | | - | - | - | - | (12)[b] | - | - | - | 5½-6½ |
| 2005 | | | | | - | - | - | - | 22[a] | - | - | 4½-5½ |
| 2006 | | | | | | - | - | (19)[b] | - | - | 10 | 3½-4½ |
| 2007 | | | | | | | - | - | - | - | - | 2½-3½ |
| 2008 | | | | | | | | - | - | (102)[c] | (121) | 1½-2½ |
| 2009 | | | | | | | | | - | - | - | ½-1½ |
| 2010 | — | — | — | — | — | — | — | — | — | — | - | 0-½ |
| Total | - | - | - | - | - | - | 60 | (30) | 22 | (102) | (50) | |

[a] Transfer Affecting Exposures at Beginning of Year
[b] Transfer Affecting Exposures at End of Year
[c] Sale with Continued Use
Parentheses denote Credit amount.



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not totaled with the retirements but are used in developing the exposures at the beginning of each age interval.

Schedule of Plant Exposed to Retirement. The development of the amount of plant exposed to retirement at the beginning of each age interval is illustrated in Schedule 3 on page II-15.

The surviving plant at the beginning of each year from 2001 through 2010 is recorded by year in the portion of the table headed "Annual Survivors at the Beginning of the Year." The last amount entered in each column is the amount of new plant added to the group during the year. The amounts entered in Schedule 3 for each successive year following the beginning balance or addition are obtained by adding or subtracting the net entries shown on Schedules 1 and 2. For the purpose of determining the plant exposed to retirement, transfers-in are considered as being exposed to retirement in this group at the beginning of the year in which they occurred, and the sales and transfers-out are considered to be removed from the plant exposed to retirement at the beginning of the following year. Thus, the amounts of plant shown at the beginning of each year are the amounts of plant from each placement year considered to be exposed to retirement at the beginning of each successive transaction year. For example, the exposures for the installation year 2006 are calculated in the following manner:

| | |
|---|---|
| Exposures at age 0 = amount of addition | = $750,000 |
| Exposures at age ½ = $750,000 - $ 8,000 | = $742,000 |
| Exposures at age 1½ = $742,000 - $18,000 | = $724,000 |
| Exposures at age 2½ = $724,000 - $20,000 - $19,000 | = $685,000 |
| Exposures at age 3½ = $685,000 - $22,000 | = $663,000 |

For the entire experience band 2001-2010, the total exposures at the beginning of an age interval are obtained by summing diagonally in a manner similar to the summing

SCHEDULE 3. PLANT EXPOSED TO RETIREMENT
JANUARY 1 OF EACH YEAR 2001-2010
SUMMARIZED BY AGE INTERVAL

Experience Band 2001-2010

Placement Band 1996-2010

| Year Placed | Exposures, Thousands of Dollars — Annual Survivors at the Beginning of the Year | | | | | | | | | | Total at Beginning of Age Interval | Age Interval |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | | |
| (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9) | (10) | (11) | (12) | (13) |
| 1996 | 255 | 245 | 234 | 222 | 209 | 195 | 239 | 216 | 192 | 167 | 167 | 13½-14½ |
| 1997 | 279 | 268 | 256 | 243 | 228 | 212 | 194 | 174 | 153 | 131 | 323 | 12½-13½ |
| 1998 | 307 | 296 | 284 | 271 | 257 | 241 | 224 | 205 | 184 | 162 | 531 | 11½-12½ |
| 1999 | 338 | 330 | 321 | 311 | 300 | 289 | 276 | 262 | 242 | 226 | 823 | 10½-11½ |
| 2000 | 376 | 367 | 357 | 346 | 334 | 321 | 307 | 297 | 280 | 261 | 1,097 | 9½-10½ |
| 2001 | 420[a] | 416 | 407 | 397 | 386 | 374 | 361 | 347 | 332 | 316 | 1,503 | 8½-9½ |
| 2002 | | 460[a] | 455 | 444 | 432 | 419 | 405 | 390 | 374 | 356 | 1,952 | 7½-8½ |
| 2003 | | | 510[a] | 504 | 492 | 479 | 464 | 448 | 431 | 412 | 2,463 | 6½-7½ |
| 2004 | | | | 580[a] | 574 | 561 | 546 | 530 | 501 | 482 | 3,057 | 5½-6½ |
| 2005 | | | | | 660[a] | 653 | 639 | 623 | 628 | 609 | 3,789 | 4½-5½ |
| 2006 | | | | | | 750[a] | 742 | 724 | 685 | 663 | 4,332 | 3½-4½ |
| 2007 | | | | | | | 850[a] | 841 | 821 | 799 | 4,955 | 2½-3½ |
| 2008 | | | | | | | | 960[a] | 949 | 926 | 5,719 | 1½-2½ |
| 2009 | | | | | | | | | 1,080[a] | 1,069 | 6,579 | ½-1½ |
| 2010 | | | | | | | | | | 1,220[a] | 7,490 | 0-½ |
| Total | 1,975 | 2,382 | 2,824 | 3,318 | 3,872 | 4,494 | 5,247 | 6,017 | 6,852 | 7,799 | 44,780 | |

[a] Additions during the year.



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of the retirements during an age interval (Schedule 1). For example, the figure of 3,789, shown as the total exposures at the beginning of age interval 4½-5½, is obtained by summing:

255 + 268 + 284 + 311 + 334 + 374 + 405 + 448 + 501 + 609.

Original Life Table. The original life table, illustrated in Schedule 4 on page II-17, is developed from the totals shown on the schedules of retirements and exposures, Schedules 1 and 3, respectively. The exposures at the beginning of the age interval are obtained from the corresponding age interval of the exposure schedule, and the retirements during the age interval are obtained from the corresponding age interval of the retirement schedule. The retirement ratio is the result of dividing the retirements during the age interval by the exposures at the beginning of the age interval. The percent surviving at the beginning of each age interval is derived from survivor ratios, each of which equals one minus the retirement ratio. The percent surviving is developed by starting with 100% at age zero and successively multiplying the percent surviving at the beginning of each interval by the survivor ratio, i.e., one minus the retirement ratio for that age interval. The calculations necessary to determine the percent surviving at age 5½ are as follows:

| | | | | | | |
|---|---|---|---|---|---|---|
| Percent surviving at age 4½ | = | 88.15 | | | | |
| Exposures at age 4½ | = | 3,789,000 | | | | |
| Retirements from age 4½ to 5½ | = | 143,000 | | | | |
| Retirement Ratio | = | 143,000 | ÷ | 3,789,000 | = | 0.0377 |
| Survivor Ratio | = | 1.000 | - | 0.0377 | = | 0.9623 |
| Percent surviving at age 5½ | = | (88.15) | x | (0.9623) | = | 84.83 |

The totals of the exposures and retirements (columns 2 and 3) are shown for the purpose of checking with the respective totals in Schedules 1 and 3. The ratio of the total retirements to the total exposures, other than for each age interval, is meaningless.

SCHEDULE 4. ORIGINAL LIFE TABLE
CALCULATED BY THE RETIREMENT RATE METHOD

Experience Band 2001-2010 Placement Band 1996-2010

(Exposure and Retirement Amounts are in Thousands of Dollars)

| Age at Beginning of Interval (1) | Exposures at Beginning of Age Interval (2) | Retirements During Age Interval (3) | Retirement Ratio (4) | Survivor Ratio (5) | Percent Surviving at Beginning of Age Interval (6) |
|---|---|---|---|---|---|
| 0.0 | 7,490 | 80 | 0.0107 | 0.9893 | 100.00 |
| 0.5 | 6,579 | 153 | 0.0233 | 0.9767 | 98.93 |
| 1.5 | 5,719 | 151 | 0.0264 | 0.9736 | 96.62 |
| 2.5 | 4,955 | 150 | 0.0303 | 0.9697 | 94.07 |
| 3.5 | 4,332 | 146 | 0.0337 | 0.9663 | 91.22 |
| 4.5 | 3,789 | 143 | 0.0377 | 0.9623 | 88.15 |
| 5.5 | 3,057 | 131 | 0.0429 | 0.9571 | 84.83 |
| 6.5 | 2,463 | 124 | 0.0503 | 0.9497 | 81.19 |
| 7.5 | 1,952 | 113 | 0.0579 | 0.9421 | 77.11 |
| 8.5 | 1,503 | 105 | 0.0699 | 0.9301 | 72.65 |
| 9.5 | 1,097 | 93 | 0.0848 | 0.9152 | 67.57 |
| 10.5 | 823 | 83 | 0.1009 | 0.8991 | 61.84 |
| 11.5 | 531 | 64 | 0.1205 | 0.8795 | 55.60 |
| 12.5 | 323 | 44 | 0.1362 | 0.8638 | 48.90 |
| 13.5 | 167 | 26 | 0.1557 | 0.8443 | 42.24 |
| | | | | | 35.66 |
| Total | 44,780 | 1,606 | | | |

Column 2 from Schedule 3, Column 12, Plant Exposed to Retirement.
Column 3 from Schedule 1, Column 12, Retirements for Each Year.
Column 4 = Column 3 divided by Column 2.
Column 5 = 1.0000 minus Column 4.
Column 6 = Column 5 multiplied by Column 6 as of the Preceding Age Interval.

The original survivor curve is plotted from the original life table (column 6, Schedule 4). When the curve terminates at a percent surviving greater than zero, it is called a stub survivor curve. Survivor curves developed from retirement rate studies generally are stub curves.

Smoothing the Original Survivor Curve. The smoothing of the original survivor curve eliminates any irregularities and serves as the basis for the preliminary extrapolation to zero percent surviving of the original stub curve. Even if the original survivor curve is complete from 100% to zero percent, it is desirable to eliminate any irregularities as there is still an extrapolation for the vintages which have not yet lived to the age at which the curve reaches zero percent. In this study, the smoothing of the original curve with established type curves was used to eliminate irregularities in the original curve.

The Iowa type curves are used in this study to smooth those original stub curves which are expressed as percents surviving at ages in years. Each original survivor curve was compared to the Iowa curves using visual and mathematical matching in order to determine the better fitting smooth curves. In Figures 6, 7, and 8 the original curve developed in Schedule 4 is compared with the L, S, and R Iowa type curves which most nearly fit the original survivor curve. In Figure 6 the L1 curve with an average life between 12 and 13 years appears to be the best fit. In Figure 7 the S0 type curve with a 12-year average life appears to be the best fit and appears to be better than the L1 fitting. In Figure 8 the R1 type curve with a 12-year average life appears to be the best fit and appears to be better than either the L1 or the S0. In Figure 9 the three fittings, 12-L1, 12-S0, and 12-R1 are drawn for comparison purposes. It is probable that the 12-R1 Iowa curve would be selected as the most representative of the plotted survivor characteristics of the group, assuming no contrary relevant factors external to the analysis of historical data.



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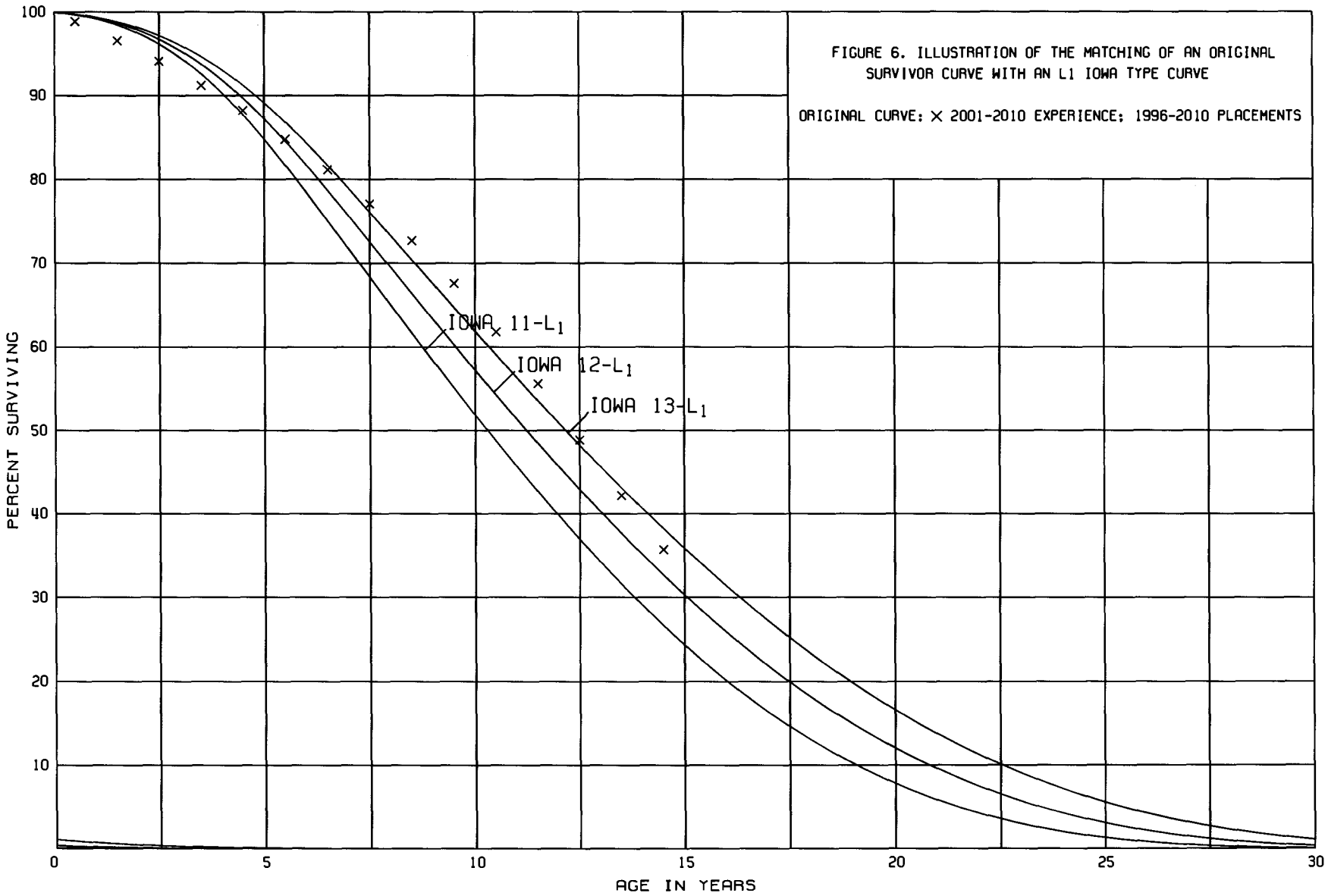





AT-GRAY 000400

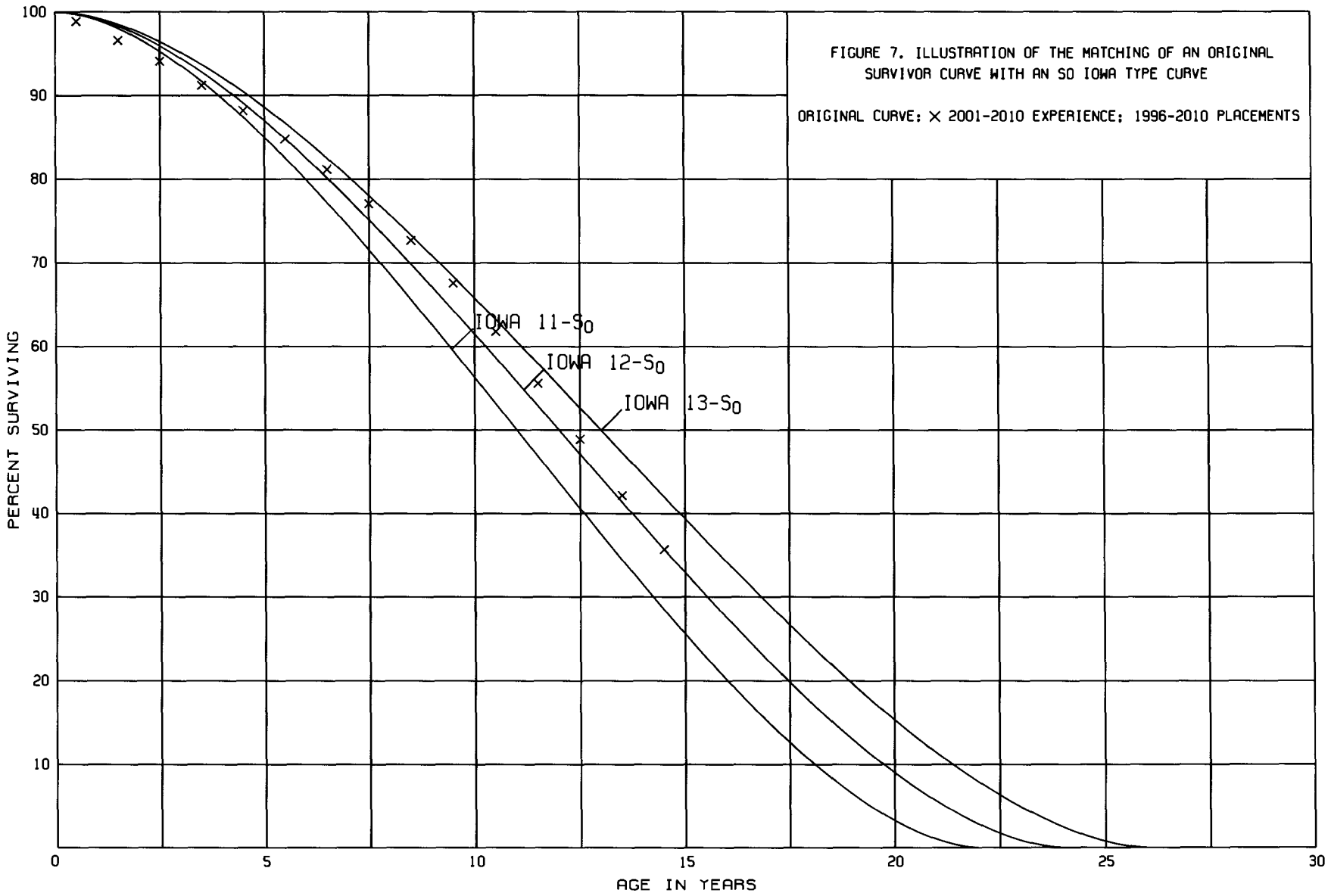
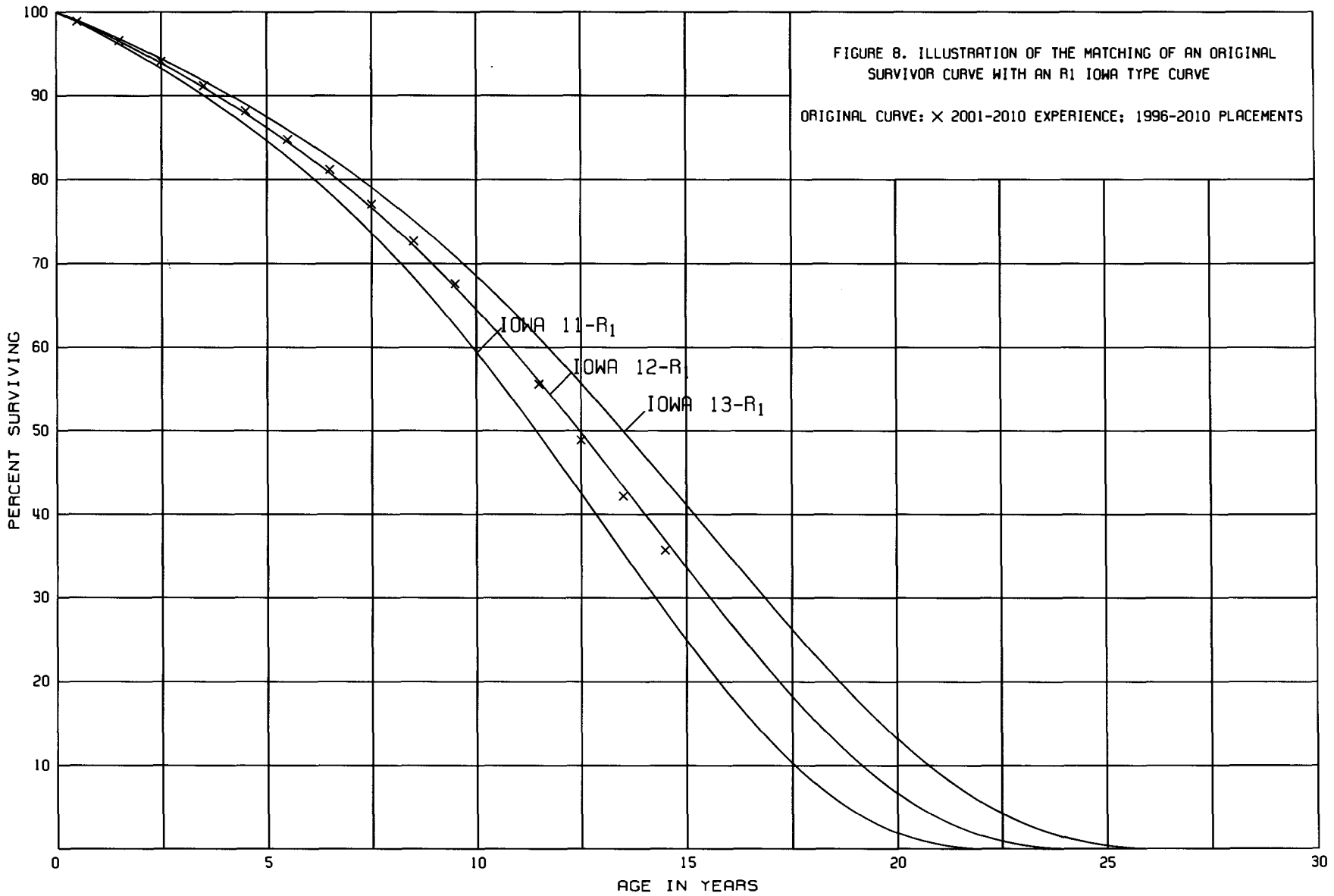


FIGURE 7. ILLUSTRATION OF THE MATCHING OF AN ORIGINAL SURVIVOR CURVE WITH AN SO IOWA TYPE CURVE
ORIGINAL CURVE: × 2001-2010 EXPERIENCE; 1996-2010 PLACEMENTS
IOWA 11-S0
IOWA 12-S0
IOWA 13-S0
PERCENT SURVIVING
AGE IN YEARS
100
90
80
70
60
50
40
30
20
10
0
5
10
15
20
25
30



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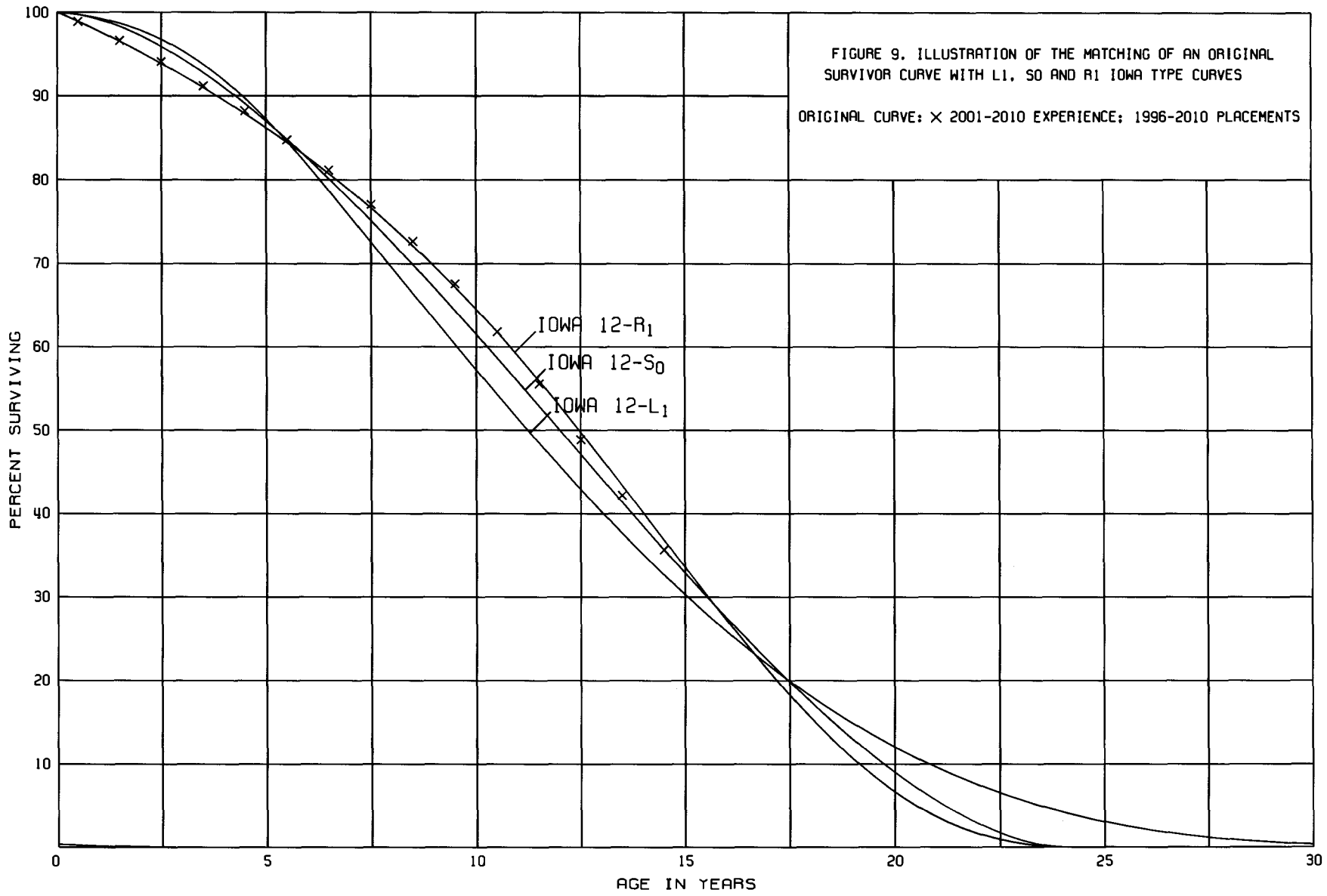




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Service Life Considerations

The service life estimates were based on judgment which considered a number of factors. The primary factors were the statistical analyses of data; current company policies and outlook as determined during field reviews of the property and other conversations with management; and the survivor curve estimates from previous studies of this company and other wastewater companies.

For some of the plant accounts and subaccounts, the statistical analyses resulted in good indications of significant survivor patterns. Generally, the information external to the statistics led to no significant departure from the indicated survivor curves for the accounts listed below.

| Account No. | Account Description |
|---|---|
| 354.2 | Structures and Improvements - Collection |
| 354.4 | Structures and Improvements - Transmission and Distribution |
| 361.0 | Collection Sewers - Gravity |
| 371.3 | Pumping Equipment - Pumping |

Account 371.3, Pumping Equipment - Pumping, is used to illustrate the manner in which the study was conducted for the accounts in the preceding list. Aged plant accounting data have been compiled for the years through 2010. These data have been coded according to account or property group, type of transaction, year in which the transaction took place, and year in which the utility plant was placed in service. The retirements, other plant transactions and plant additions were analyzed by the retirement rate method.

The survivor curve estimate for this account is the 36-R1.5 and is based on the statistical indication for the period 1998 through 2010. The 36-R1.5 is an excellent fit of the significant portion of the original survivor curve as set forth on page III-44, is consistent

with management outlook for a continuation of the historical experience and is within the typical service life range of 30 to 45 years for pumping equipment.

Amortization accounting is proposed for certain General Plant accounts that represent numerous units of property, but a small portion of the depreciable plant in service. These accounts represent approximately one percent of total wastewater plant. A discussion of the basis for the amortization periods is presented in the section "Calculation of Annual and Accrued Amortization".

Generally, the estimates for the remaining accounts were based on judgments which considered the nature of the plant and equipment, the previous estimate for this company and a general knowledge of service lives for similar equipment in other wastewater companies.

Salvage Analysis

The estimates of net salvage were based in part on historical data compiled for the years 2005 through 2010. Cost of removal and salvage were expressed as percents of the original cost of plant retired, both on annual and three-year moving average bases. The most recent five-year average also was calculated for consideration. The net salvage estimates are expressed as a percent of the original cost of plant retired.

Net Salvage Considerations

The estimates of salvage were based primarily on judgment which considered a number of factors. The primary factors were the analyses of historical data; a knowledge of management's plans and operating policies; and net salvage estimates from previous studies of this company and other wastewater companies. Given the minimal historical analyses available, all net salvage percents were based on Company plans and the net salvage percents of other utilities.

## CALCULATION OF ANNUAL AND ACCRUED DEPRECIATION

After the survivor curve and salvage are estimated, the annual depreciation accrual rate can be calculated. In the average service life procedure, the annual accrual rate is computed by the following equation:

$$\textit{Annual Accrual Rate, Percent} = \frac{\textit{(100\% - Net Salvage, Percent)}}{\textit{Average Service Life}}.$$

The calculated accrued depreciation for each depreciable property group represents that portion of the depreciable cost of the group which will not be allocated to expense through future depreciation accruals, if current forecasts of life characteristics are used as a basis for straight line depreciation accounting.

The accrued depreciation calculation consists of applying an appropriate ratio to the surviving original cost of each vintage of each account, based upon the attained age and the estimated survivor curve. The accrued depreciation ratios are calculated as follows:

$$\textit{Ratio} = \left(1 - \frac{\textit{Average Remaining Life Expectancy}}{\textit{Average Service Life}}\right)(1 - \textit{Net Salvage, Percent}).$$

The application of these procedures is described for a single unit of property and a group of property units. Salvage is omitted from the description for ease of application.

### Single Unit of Property

The calculation of straight line depreciation for a single unit of property is straightforward. For example, if a $1,000 unit of property attains an age of four years and has a life expectancy of six years, the annual accrual over the total life is:

$$\frac{\$1{,}000}{(4 + 6)} = \$100 \textit{ per year.}$$



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The accrued depreciation is:

$$\$1{,}000\ (1 - \frac{6}{10}) = \$400.$$

Group Depreciation Procedures

When more than a single item of property is under consideration, a group procedure for depreciation is appropriate because normally all of the items within a group do not have identical service lives, but have lives that are dispersed over a range of time. There are two primary group procedures, namely, average service life and equal life group.

Remaining Life Annual Accruals. For the purpose of calculating remaining life accruals as of December 31, 2010, the depreciation reserve for each plant account is allocated among vintages in proportion to the calculated accrued depreciation for the account. Explanations of remaining life accruals and calculated accrued depreciation follow. The detailed calculations as of December 31, 2010, are set forth in the Results of Study section of the report.

Average Service Life Procedure. In the average service life procedure, the remaining life annual accrual for each vintage is determined by dividing future book accruals (original cost less book reserve) by the average remaining life of the vintage. The average remaining life is a directly weighted average derived from the estimated future survivor curve in accordance with the average service life procedure.

The calculated accrued depreciation for each depreciable property group represents that portion of the depreciable cost of the group which would not be allocated to expense through future depreciation accruals, if current forecasts of life characteristics are used as the basis for such accruals. The accrued depreciation calculation consists of applying an appropriate ratio to the surviving original cost of each vintage of each account, based upon

the attained age and service life. The straight line accrued depreciation ratios are calculated as follows for the average service life procedure:

$$Ratio = 1 - \frac{Average\ Remaining\ Life}{Average\ Service\ Life}.$$

CALCULATION OF ANNUAL AND ACCRUED AMORTIZATION

Amortization is the gradual extinguishment of an amount in an account by distributing such amount over a fixed period, over the life of the asset or liability to which it applies, or over the period during which it is anticipated the benefit will be realized. Normally, the distribution of the amount is in equal amounts to each year of the amortization period.

The calculation of annual and accrued amortization requires the selection of an amortization period. The amortization periods used in this report were based on judgment which incorporated a consideration of the period during which the assets will render most of their service, the amortization period and service lives used by other utilities, and the service life estimates previously used for the asset under depreciation accounting.

Amortization accounting is proposed for certain General Plant accounts that represent numerous units of property, but a very small portion of depreciable utility plant in service. The accounts and their amortization periods are as follows:

| Account | | Amortization Period, Years |
|---|---|---|
| 390 | Office Furniture and Equipment | 20 |
| 391 | Tools, Shop and Garage Equipment | 20 |
| 394 | Laboratory Equipment | 15 |
| 396 | Communication Equipment | 15 |
| 397 | Miscellaneous Equipment | 15 |
| 398 | Other Tangible Property | 20 |

The calculated accrued amortization is equal to the original cost multiplied by the ratio of the vintage's age to its amortization period. The annual amortization amount is determined by dividing the original cost by the period of amortization for the account.

III-1

# PART III. RESULTS OF STUDY

# PART III. RESULTS OF STUDY

## QUALIFICATION OF RESULTS

The calculated annual depreciation accrual rates are the principal results of the study. Continued surveillance and periodic revisions are normally required to maintain continued use of appropriate annual depreciation accrual rates. An assumption that accrual rates can remain unchanged over a long period of time implies a disregard for the inherent variability in service lives and salvage and for the change of the composition of property in service. The annual accrual rates were calculated in accordance with the straight line remaining life method of depreciation using the average service life procedure based on estimates which reflect considerations of current historical evidence and expected future conditions.

The annual depreciation accrual rates are applicable specifically to the wastewater plant in service as of December 31, 2010. For most plant accounts, the application of such rates to future balances that reflect additions subsequent to December 31, 2010, is reasonable for a period of three to five years.

## DESCRIPTION OF STATISTICAL SUPPORT

The service life and salvage estimates were based on judgment which incorporated statistical analyses of retirement data, discussions with management and consideration of estimates made for other wastewater companies. The results of the statistical analyses of service life are presented in the section titled "Service Life Statistics".

The estimated survivor curves for each account are presented in graphical form. The charts depict the estimated smooth survivor curve and original survivor curve(s), when

applicable, related to each specific group. For groups where the original survivor curve was plotted, the calculation of the original life table is also presented.

The analyses of salvage data are presented in the section titled, "Net Salvage Statistics". The tabulations present annual cost of removal and salvage data, three-year moving averages and the most recent five-year average. Data are shown in dollars and as percentages of original costs retired.

## DESCRIPTION OF DEPRECIATION TABULATIONS

A summary table of the results of the study, as applied to the original cost of wastewater plant as of December 31, 2010, are presented on pages III-4 and III-5 of this report. The schedule sets forth the original cost, the book reserve, future accruals, the calculated annual depreciation rate and amount, and the composite remaining life related to wastewater plant.

The tables of the calculated annual depreciation accruals are presented in account sequence in the section titled "Depreciation Calculations." The tables indicate the estimated survivor curve and salvage percent for the account and set forth for each installation year the original cost, the calculated accrued depreciation, the allocated book reserve, future accruals, the remaining life and the calculated annual accrual amount.

AQUA TEXAS, INC.

ESTIMATED SURVIVOR CURVE, NET SALVAGE, ORIGINAL COST, BOOK RESERVE, AND
CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2010

| | DEPRECIABLE GROUP | SURVIVOR CURVE | NET SALVAGE | ORIGINAL COST AS OF DECEMBER 31, 2010 | BOOK RESERVE | FUTURE ACCRUALS | ANNUAL ACCRUAL AMOUNT | COMPOSITE REMAINING LIFE | ANNUAL ACCRUAL RATE PERCENT |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9)=(7)/(4) |
| | **DEPRECIABLE PLANT** | | | | | | | | |
| | STRUCTURES AND IMPROVEMENTS | | | | | | | | |
| 354.20 | COLLECTION | 50-R2.5 | (5) | 1,565,826.92 | 386,462 | 1,257,656 | 28,653 | 43.9 | 1.83 |
| 354.30 | PUMPING | 45-R3 | (5) | 818,034.82 | 210,995 | 647,942 | 17,148 | 37.8 | 2.10 |
| 354.40 | TRANSMISSION AND DISTRIBUTION PLANT | 45-R2.5 | (5) | 545,780.50 | 223,321 | 349,749 | 9,145 | 38.2 | 1.68 |
| 354.50 | RAW WATER TREATMENT | 45-S2.5 | (5) | 4,091,416.35 | 1,085,549 | 3,210,438 | 82,428 | 38.9 | 2.01 |
| 354.70 | GENERAL | 55-R4 | 0 | 1,875,530.28 | 564,302 | 1,311,228 | 27,465 | 47.7 | 1.46 |
| | TOTAL STRUCTURES AND IMPROVEMENTS | | | 8,896,588.87 | 2,470,629 | 6,777,013 | 164,839 | 41.1 | 1.85 |
| | POWER GENERATION EQUIPMENT | | | | | | | | |
| 355.20 | COLLECTION | 30-S1.5 | 0 | 48,234.06 | 16,717 | 31,517 | 1,384 | 22.8 | 2.87 |
| 355.40 | TRANSMISSION AND DISTRIBUTION PLANT | 25-R2.5 | 0 | 10,659.65 | 225 | 10,435 | 425 | 24.6 | 3.99 |
| 355.50 | RAW WATER TREATMENT | 25-R3 | 0 | 85,110.27 | 17,282 | 67,828 | 3,675 | 18.5 | 4.32 |
| | TOTAL POWER GENERATION EQUIPMENT | | | 144,003.98 | 34,224 | 109,780 | 5,484 | 20.0 | 3.81 |
| 360.00 | COLLECTION SEWERS - FORCE | 70-R4 | (10) | 5,996,311.20 | 831,558 | 5,764,384 | 95,354 | 60.5 | 1.59 |
| 361.00 | COLLECTION SEWERS - GRAVITY | 65-S3 | (10) | 14,080,171.66 | 5,109,433 | 10,378,756 | 229,118 | 45.3 | 1.63 |
| 362.00 | SPECIAL COLLECTING STRUCTURES | 40-R3 | 0 | 124,003.52 | 69,077 | 54,927 | 1,712 | 32.1 | 1.38 |
| 363.00 | SERVICES TO CUSTOMERS | 50-S1.5 | 0 | 3,294,083.37 | 31,920 | 3,262,163 | 78,145 | 41.7 | 2.37 |
| 364.00 | FLOW MEASURING DEVICES | 22-S2.5 | 0 | 264,167.08 | 107,160 | 157,007 | 10,506 | 14.9 | 3.98 |
| 365.00 | FLOW MEASURING INSTALLATIONS | 12-L2.5 | 0 | 23,521.44 | 6,329 | 17,192 | 1,789 | 9.6 | 7.61 |
| 366.00 | REUSE SERVICES | 40-R2.5 | 0 | 41,642.07 | 3,374 | 38,268 | 1,291 | 29.6 | 3.10 |
| 367.00 | REUSE METERS AND INSTALLATIONS | 20-R3 | 0 | 391.85 | 28 | 364 | 26 | 14.0 | 6.64 |
| 370.00 | RECEIVING WELLS | 50-R4 | 0 | 3,476,533.37 | 1,513,505 | 1,963,028 | 48,882 | 40.2 | 1.41 |
| | PUMPING EQUIPMENT | | | | | | | | |
| 371.30 | PUMPING | 36-R1.5 | (5) | 4,569,775.18 | 1,348,874 | 3,449,390 | 112,843 | 30.6 | 2.47 |
| 371.50 | RAW WATER TREATMENT | 30-R2.5 | (5) | 556,802.16 | 131,021 | 453,621 | 18,997 | 23.9 | 3.41 |
| 371.60 | RAW WATER DISTRIBUTION | 30-R3 | 0 | 113,551.67 | 24,100 | 89,452 | 3,645 | 24.5 | 3.21 |
| | TOTAL PUMPING EQUIPMENT | | | 5,240,129.01 | 1,503,995 | 3,992,463 | 135,485 | 29.5 | 2.59 |
| 374.00 | REUSE DISTRIBUTION RESERVOIRS | 45-S2 | 0 | 54,896.69 | 11,277 | 43,620 | 1,145 | 38.1 | 2.09 |
| 375.00 | REUSE TRANSMISSION AND DISTRIBUTION SYSTEM | 40-R2.5 | 0 | 474,816.56 | 108,039 | 366,778 | 11,657 | 31.5 | 2.46 |
| | TREATMENT AND DISPOSAL EQUIPMENT | | | | | | | | |
| 380.40 | TRANSMISSION AND DISTRIBUTION PLANT | 50-R3 | (10) | 9,777,938.75 | 5,521,236 | 5,234,497 | 128,342 | 40.8 | 1.31 |
| 380.50 | RAW WATER TREATMENT | 45-R3 | (10) | 7,863,930.36 | 3,176,281 | 5,474,042 | 146,307 | 37.4 | 1.86 |
| | TOTAL TREATMENT AND DISPOSAL EQUIPMENT | | | 17,641,869.11 | 8,697,517 | 10,708,539 | 274,649 | 39.0 | 1.56 |
| | PLANT SEWERS | | | | | | | | |
| 381.40 | TRANSMISSION AND DISTRIBUTION PLANT | 50-R2.5 | 0 | 836,510.27 | 286,218 | 550,292 | 13,585 | 40.5 | 1.62 |
| 381.50 | RAW WATER TREATMENT | 40-R2.5 | 0 | 27,871.49 | 4,269 | 23,602 | 677 | 34.9 | 2.43 |
| | TOTAL PLANT SEWERS | | | 864,381.76 | 290,487 | 573,894 | 14,262 | 40.2 | 1.65 |
| 382.00 | OUTFALL SEWER LINES | 40-R2.5 | 0 | 11,546.55 | 350 | 11,197 | 315 | 35.5 | 2.73 |



AT-GRAY 000413

AQUA TEXAS, INC.

ESTIMATED SURVIVOR CURVE, NET SALVAGE, ORIGINAL COST, BOOK RESERVE, AND
CALCULATED ANNUAL DEPRECIATION ACCRUALS RELATED TO WASTEWATER PLANT AS OF DECEMBER 31, 2010

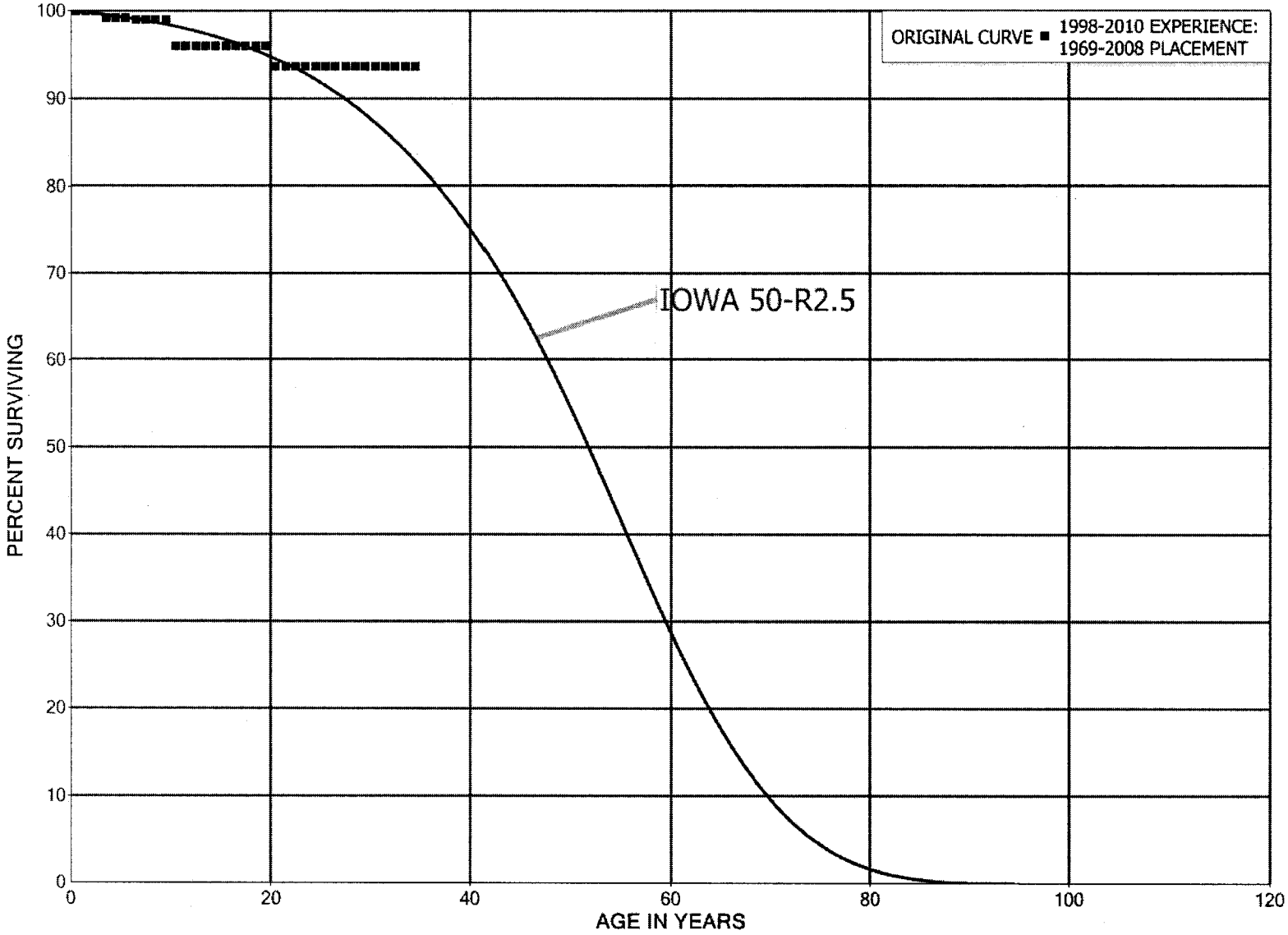
| | DEPRECIABLE GROUP | SURVIVOR CURVE | NET SALVAGE | ORIGINAL COST AS OF DECEMBER 31, 2010 | BOOK RESERVE | FUTURE ACCRUALS | ANNUAL ACCRUAL AMOUNT | COMPOSITE REMAINING LIFE | ANNUAL ACCRUAL RATE PERCENT |
|---|---|---|---|---|---|---|---|---|---|
| | (1) | (2) | (3) | (4) | (5) | (6) | (7) | (8) | (9)=(7)/(4) |
| | OTHER PLANT AND MISCELLANEOUS EQUIPMENT | | | | | | | | |
| 389.10 | INTANGIBLE | 20-S2 | 0 | 18,934.55 | 8,706 | 10,229 | 755 | 13.5 | 3.99 |
| 389.20 | COLLECTION | 20-R3 | 0 | 1,365.42 | 921 | 444 | 34 | 13.1 | 2.49 |
| 389.30 | PUMPING | 30-R3 | 0 | 3,215.32 | 2,016 | 1,199 | 53 | 22.6 | 1.65 |
| 389.40 | TRANSMISSION AND DISTRIBUTION PLANT | 35-R4 | 0 | 15,446.00 | 4,956 | 10,490 | 374 | 28.0 | 2.42 |
| 389.50 | RAW WATER TREATMENT | 25-S2.5 | 0 | 182,798.60 | 56,355 | 126,444 | 7,273 | 17.4 | 3.98 |
| | TOTAL OTHER PLANT AND MISCELLANEOUS EQUIPMENT | | | 221,759.89 | 72,954 | 148,806 | 8,489 | 17.5 | 3.83 |
| 390.00 | OFFICE FURNITURE AND EQUIPMENT | 20-SQ | 0 | 2,154.60 | 1,028 | 1,127 | 90 | 12.5 | 4.18 |
| 391.00 | TRANSPORTATION EQUIPMENT | 15-L3 | 0 | 125,547.33 | 8,809 | 116,738 | 11,592 | 10.1 | 9.23 |
| 393.00 | TOOLS, SHOP AND GARAGE EQUIPMENT | 20-SQ | 0 | 31,131.74 | 20,848 | 10,284 | 774 | 13.3 | 2.49 |
| 394.00 | LABORATORY EQUIPMENT | 15-SQ | 0 | 4,980.00 | 580 | 4,400 | 463 | 9.5 | 9.30 |
| 396.00 | COMMUNICATION EQUIPMENT | 15-SQ | 0 | 90,748.63 | 12,551 | 78,198 | 9,678 | 8.1 | 10.66 |
| 397.00 | MISCELLANEOUS EQUIPMENT | 15-SQ | 0 | 14,736.50 | 5,722 | 9,014 | 1,104 | 8.2 | 7.49 |
| 398.00 | OTHER TANGIBLE PLANT | 20-SQ | 0 | 474,614.95 | 213,192 | 261,423 | 21,935 | 11.9 | 4.62 |
| | **TOTAL DEPRECIABLE PLANT** | | | **61,594,731.73** | **21,124,586** | **44,849,363** | **1,128,784** | **39.7** | **1.83** |
| | **NONDEPRECIABLE PLANT** | | | | | | | | |
| 351.00 | ORGANIZATION | | | 326,721.96 | 40,337 | | | | |
| 352.00 | FRANCHISES | | | 1,673.10 | 165 | | | | |
| 353.20 | LAND AND LAND RIGHTS - COLLECTION | | | 311,223.36 | | | | | |
| 353.30 | LAND AND LAND RIGHTS - PUMPING | | | 29,825.00 | 8,453 | | | | |
| 353.40 | LAND AND LAND RIGHTS - TRANSMISSION AND DISTRIBUTION PLANT | | | 206,151.12 | | | | | |
| 353.50 | LAND AND LAND RIGHTS - RAW WATER TREATMENT | | | 124,884.23 | (112,395) | | | | |
| 353.60 | LAND AND LAND RIGHTS - RAW WATER DISTRIBUTION | | | 105,627.38 | 120,127 | | | | |
| 353.70 | LAND AND LAND RIGHTS - GENERAL | | | 102,516.72 | 28,775 | | | | |
| | **TOTAL NONDEPRECIABLE PLANT** | | | 1,208,622.87 | 85,462 | | | | |
| | **TOTAL WASTEWATER PLANT** | | | **62,803,354.60** | **21,210,048** | **44,849,363** | **1,128,784** | | |



AT-GRAY 000414

# SERVICE LIFE STATISTICS

AQUA TEXAS, INC.
ACCOUNT 354.2 STRUCTURES AND IMPROVEMENTS - COLLECTION
ORIGINAL AND SMOOTH SURVIVOR CURVES






AT-GRAY 000416

AQUA TEXAS, INC.

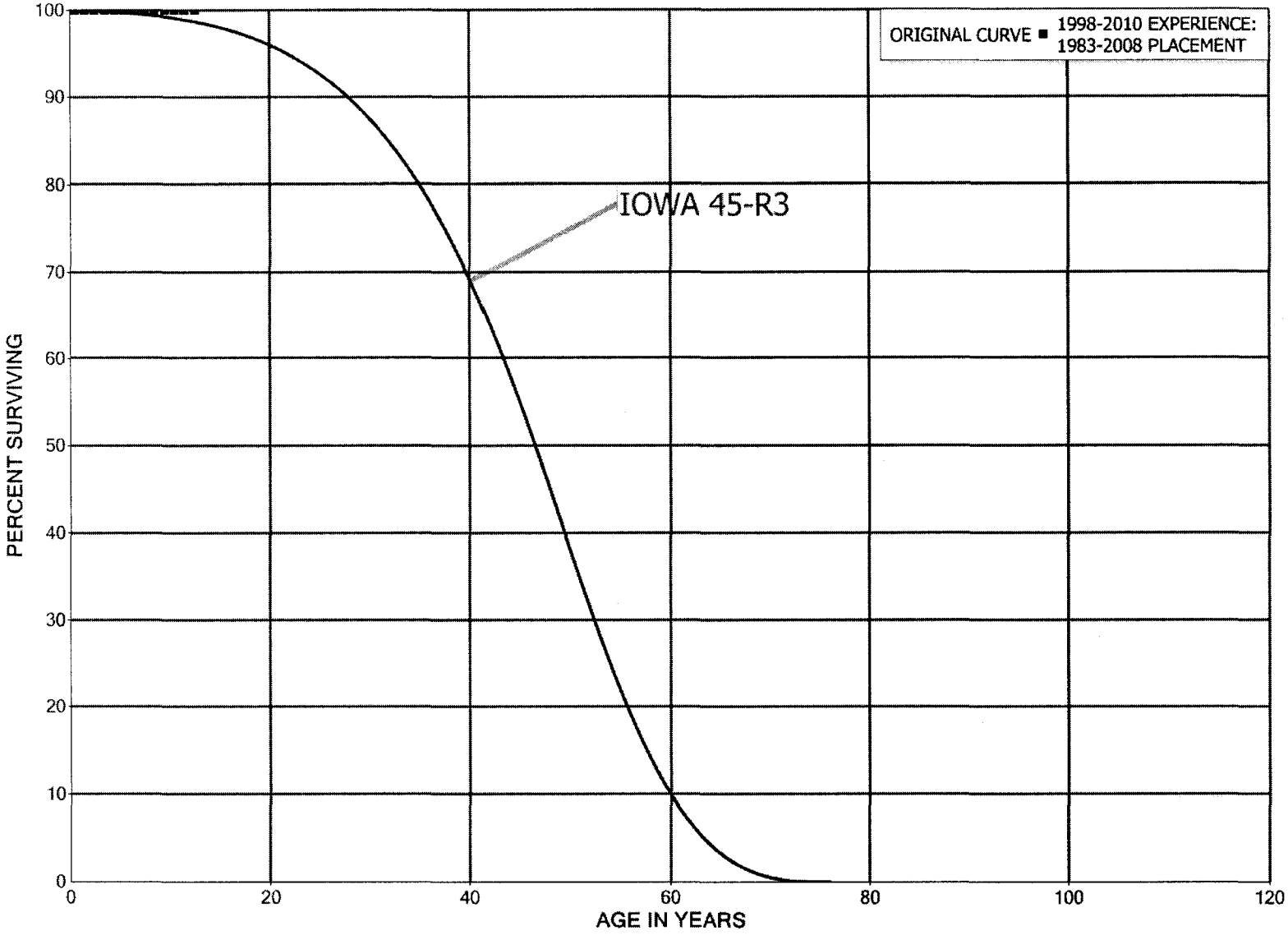
ACCOUNT 354.2 STRUCTURES AND IMPROVEMENTS - COLLECTION

ORIGINAL LIFE TABLE

PLACEMENT BAND 1969-2008 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 1,862,547 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 1,862,547 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 1,885,095 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 1,879,310 | 14,472 | 0.0077 | 0.9923 | 100.00 |
| 3.5 | 1,845,899 | | 0.0000 | 1.0000 | 99.23 |
| 4.5 | 1,840,185 | | 0.0000 | 1.0000 | 99.23 |
| 5.5 | 1,621,975 | 5,544 | 0.0034 | 0.9966 | 99.23 |
| 6.5 | 932,888 | | 0.0000 | 1.0000 | 98.89 |
| 7.5 | 342,725 | | 0.0000 | 1.0000 | 98.89 |
| 8.5 | 331,154 | | 0.0000 | 1.0000 | 98.89 |
| 9.5 | 195,477 | 5,722 | 0.0293 | 0.9707 | 98.89 |
| 10.5 | 179,854 | | 0.0000 | 1.0000 | 96.00 |
| 11.5 | 37,415 | | 0.0000 | 1.0000 | 96.00 |
| 12.5 | 37,415 | | 0.0000 | 1.0000 | 96.00 |
| 13.5 | 42,038 | | 0.0000 | 1.0000 | 96.00 |
| 14.5 | 58,328 | | 0.0000 | 1.0000 | 96.00 |
| 15.5 | 58,328 | | 0.0000 | 1.0000 | 96.00 |
| 16.5 | 60,076 | | 0.0000 | 1.0000 | 96.00 |
| 17.5 | 81,492 | | 0.0000 | 1.0000 | 96.00 |
| 18.5 | 79,911 | | 0.0000 | 1.0000 | 96.00 |
| 19.5 | 70,585 | 1,731 | 0.0245 | 0.9755 | 96.00 |
| 20.5 | 68,046 | | 0.0000 | 1.0000 | 93.64 |
| 21.5 | 84,491 | | 0.0000 | 1.0000 | 93.64 |
| 22.5 | 84,491 | | 0.0000 | 1.0000 | 93.64 |
| 23.5 | 84,491 | | 0.0000 | 1.0000 | 93.64 |
| 24.5 | 86,849 | | 0.0000 | 1.0000 | 93.64 |
| 25.5 | 87,185 | | 0.0000 | 1.0000 | 93.64 |
| 26.5 | 70,868 | | 0.0000 | 1.0000 | 93.64 |
| 27.5 | 52,812 | | 0.0000 | 1.0000 | 93.64 |
| 28.5 | 54,623 | | 0.0000 | 1.0000 | 93.64 |
| 29.5 | 34,828 | | 0.0000 | 1.0000 | 93.64 |
| 30.5 | 31,430 | | 0.0000 | 1.0000 | 93.64 |
| 31.5 | 31,109 | | 0.0000 | 1.0000 | 93.64 |
| 32.5 | 31,109 | | 0.0000 | 1.0000 | 93.64 |
| 33.5 | 24,263 | | 0.0000 | 1.0000 | 93.64 |
| 34.5 | 7,841 | | 0.0000 | 1.0000 | 93.64 |
| 35.5 | 7,841 | | 0.0000 | 1.0000 | 93.64 |
| 36.5 | 11,954 | | 0.0000 | 1.0000 | 93.64 |
| 37.5 | 3,582 | | 0.0000 | 1.0000 | 93.64 |
| 38.5 | 3,246 | | 0.0000 | 1.0000 | 93.64 |
| 39.5 | 1,783 | | 0.0000 | 1.0000 | 93.64 |
| 40.5 | | | | | 93.64 |

AQUA TEXAS, INC.
ACCOUNT 354.3 STRUCTURES AND IMPROVEMENTS - PUMPING
ORIGINAL AND SMOOTH SURVIVOR CURVES






AT-GRAY 000418

AQUA TEXAS, INC.

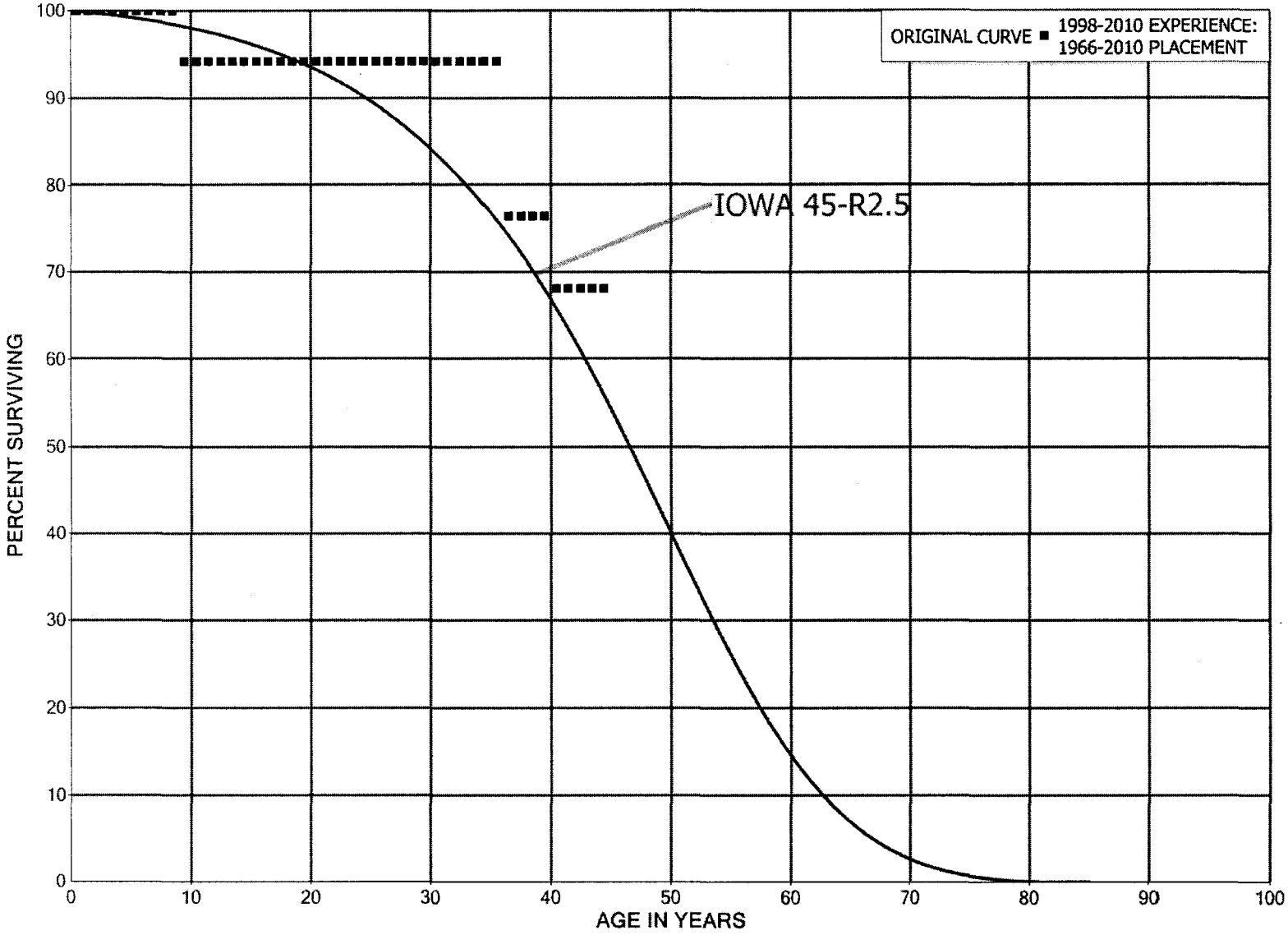
ACCOUNT 354.3 STRUCTURES AND IMPROVEMENTS - PUMPING

ORIGINAL LIFE TABLE

PLACEMENT BAND 1983-2008 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 775,186 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 775,186 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 775,186 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 696,354 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 674,470 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 634,854 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 634,015 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 627,862 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 627,862 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 145,932 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 5,387 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 5,387 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 1,990 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | | | | | 100.00 |
| 13.5 | | | | | |
| 14.5 | 8,313 | | 0.0000 | | |
| 15.5 | 8,313 | | 0.0000 | | |
| 16.5 | 8,313 | | 0.0000 | | |
| 17.5 | 8,313 | | 0.0000 | | |
| 18.5 | 8,313 | | 0.0000 | | |
| 19.5 | 8,313 | | 0.0000 | | |
| 20.5 | 8,313 | | 0.0000 | | |
| 21.5 | 8,313 | | 0.0000 | | |
| 22.5 | 8,313 | | 0.0000 | | |
| 23.5 | 8,313 | | 0.0000 | | |
| 24.5 | 8,313 | | 0.0000 | | |
| 25.5 | 8,313 | | 0.0000 | | |
| 26.5 | 8,313 | | 0.0000 | | |
| 27.5 | | | | | |

AQUA TEXAS, INC.
ACCOUNT 354.4 STRUCTURES AND IMPROVEMENTS - TRANSMISSION AND DISTRIBUTION PLANT
ORIGINAL AND SMOOTH SURVIVOR CURVES



AQUA TEXAS, INC.

ACCOUNT 354.4 STRUCTURES AND IMPROVEMENTS - TRANSMISSION AND DISTRIBUTION PLANT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1966-2010 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 534,904 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 435,190 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 450,249 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 450,249 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 450,249 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 431,976 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 436,317 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 436,317 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 374,780 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 224,095 | 13,030 | 0.0581 | 0.9419 | 100.00 |
| 9.5 | 142,687 | | 0.0000 | 1.0000 | 94.19 |
| 10.5 | 119,403 | | 0.0000 | 1.0000 | 94.19 |
| 11.5 | 42,308 | | 0.0000 | 1.0000 | 94.19 |
| 12.5 | 42,308 | | 0.0000 | 1.0000 | 94.19 |
| 13.5 | 43,332 | | 0.0000 | 1.0000 | 94.19 |
| 14.5 | 41,405 | | 0.0000 | 1.0000 | 94.19 |
| 15.5 | 41,405 | | 0.0000 | 1.0000 | 94.19 |
| 16.5 | 86,241 | | 0.0000 | 1.0000 | 94.19 |
| 17.5 | 78,955 | | 0.0000 | 1.0000 | 94.19 |
| 18.5 | 74,615 | | 0.0000 | 1.0000 | 94.19 |
| 19.5 | 74,615 | | 0.0000 | 1.0000 | 94.19 |
| 20.5 | 74,615 | | 0.0000 | 1.0000 | 94.19 |
| 21.5 | 74,615 | | 0.0000 | 1.0000 | 94.19 |
| 22.5 | 59,112 | | 0.0000 | 1.0000 | 94.19 |
| 23.5 | 59,112 | | 0.0000 | 1.0000 | 94.19 |
| 24.5 | 65,581 | | 0.0000 | 1.0000 | 94.19 |
| 25.5 | 65,581 | | 0.0000 | 1.0000 | 94.19 |
| 26.5 | 64,556 | | 0.0000 | 1.0000 | 94.19 |
| 27.5 | 51,424 | | 0.0000 | 1.0000 | 94.19 |
| 28.5 | 53,334 | | 0.0000 | 1.0000 | 94.19 |
| 29.5 | 8,379 | | 0.0000 | 1.0000 | 94.19 |
| 30.5 | 8,379 | | 0.0000 | 1.0000 | 94.19 |
| 31.5 | 9,415 | | 0.0000 | 1.0000 | 94.19 |
| 32.5 | 9,415 | | 0.0000 | 1.0000 | 94.19 |
| 33.5 | 9,415 | | 0.0000 | 1.0000 | 94.19 |
| 34.5 | 9,415 | | 0.0000 | 1.0000 | 94.19 |
| 35.5 | 9,415 | 1,783 | 0.1894 | 0.8106 | 94.19 |
| 36.5 | 7,631 | | 0.0000 | 1.0000 | 76.35 |
| 37.5 | 1,162 | | 0.0000 | 1.0000 | 76.35 |
| 38.5 | 1,162 | | 0.0000 | 1.0000 | 76.35 |

AQUA TEXAS, INC.

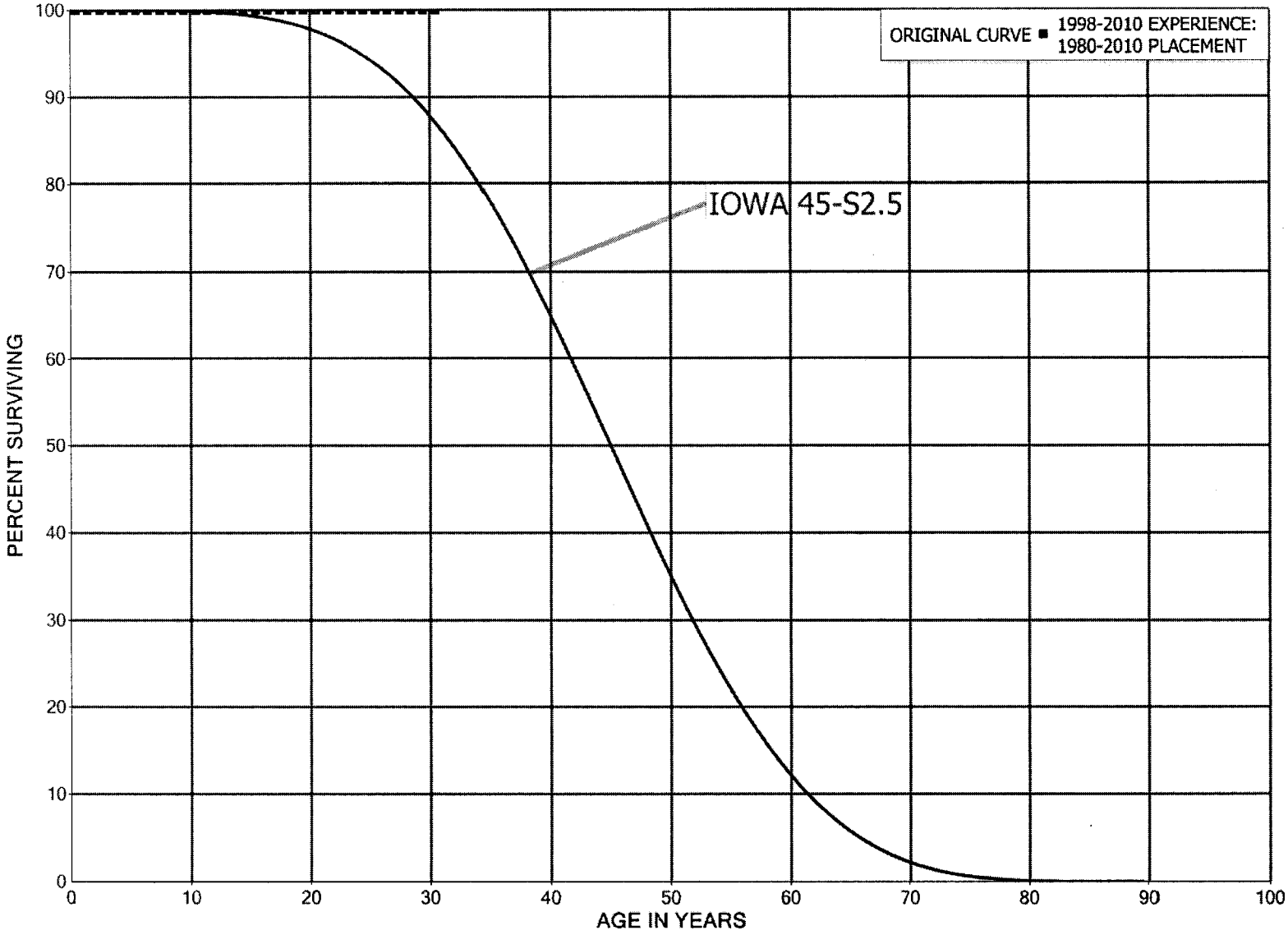
ACCOUNT 354.4 STRUCTURES AND IMPROVEMENTS - TRANSMISSION AND DISTRIBUTION PLANT

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1966-2010 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 39.5 | 1,162 | 126 | 0.1087 | 0.8913 | 76.35 |
| 40.5 | 1,036 | | 0.0000 | 1.0000 | 68.05 |
| 41.5 | 1,036 | | 0.0000 | 1.0000 | 68.05 |
| 42.5 | 1,036 | | 0.0000 | 1.0000 | 68.05 |
| 43.5 | 1,036 | | 0.0000 | 1.0000 | 68.05 |
| 44.5 | | | | | 68.05 |

AQUA TEXAS, INC.
ACCOUNT 354.5 STRUCTURES AND IMPROVEMENTS - RAW WATER TREATMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



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AQUA TEXAS, INC.

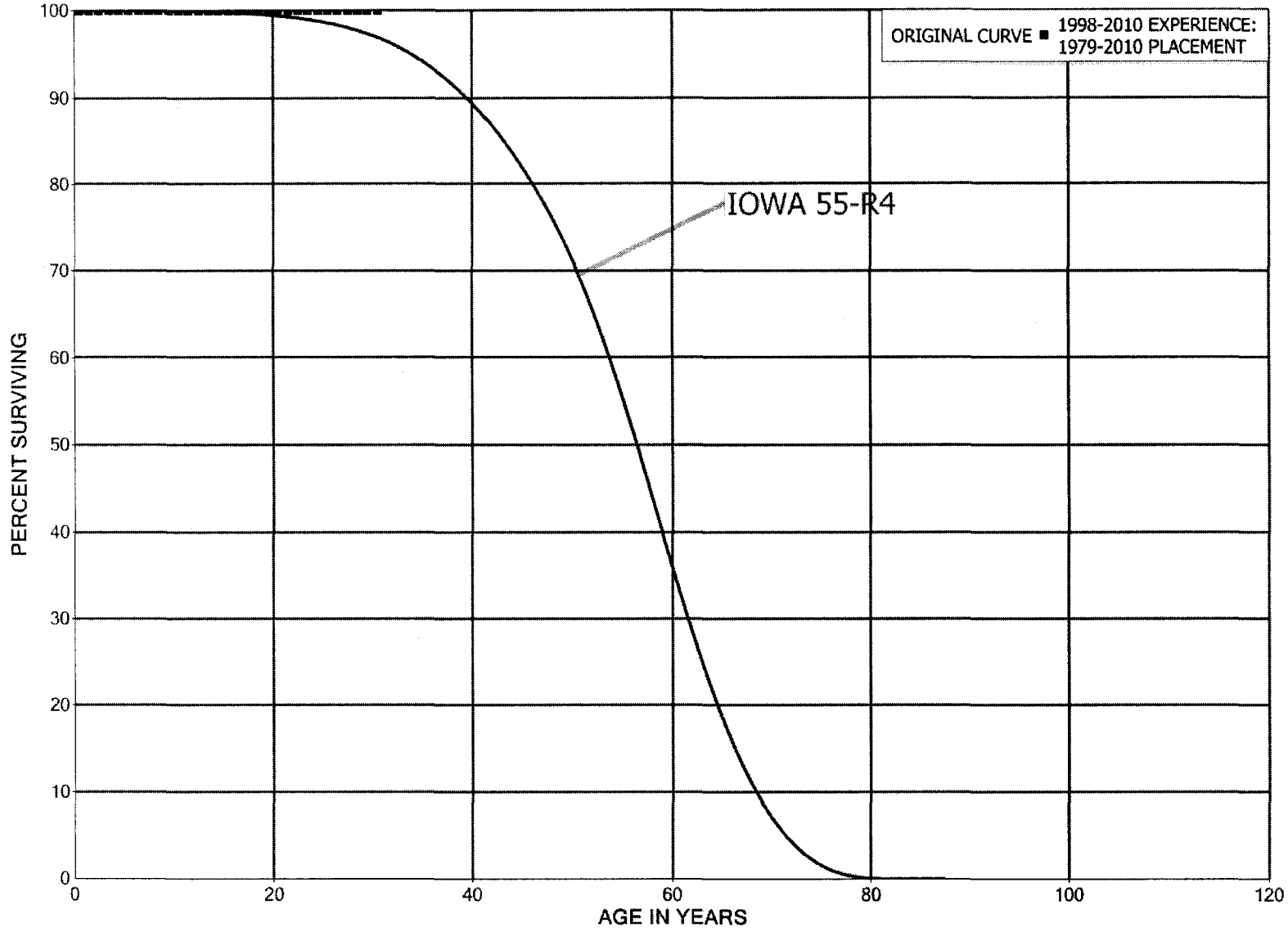
ACCOUNT 354.5 STRUCTURES AND IMPROVEMENTS - RAW WATER TREATMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 1980-2010 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 5,215,318 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 5,207,061 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 5,163,237 | 906 | 0.0002 | 0.9998 | 100.00 |
| 2.5 | 5,173,045 | | 0.0000 | 1.0000 | 99.98 |
| 3.5 | 4,431,054 | | 0.0000 | 1.0000 | 99.98 |
| 4.5 | 3,846,598 | | 0.0000 | 1.0000 | 99.98 |
| 5.5 | 3,132,048 | | 0.0000 | 1.0000 | 99.98 |
| 6.5 | 1,920,175 | | 0.0000 | 1.0000 | 99.98 |
| 7.5 | 1,474,300 | | 0.0000 | 1.0000 | 99.98 |
| 8.5 | 735,702 | | 0.0000 | 1.0000 | 99.98 |
| 9.5 | 420,745 | | 0.0000 | 1.0000 | 99.98 |
| 10.5 | 35,752 | | 0.0000 | 1.0000 | 99.98 |
| 11.5 | 927 | | 0.0000 | 1.0000 | 99.98 |
| 12.5 | 927 | | 0.0000 | 1.0000 | 99.98 |
| 13.5 | 927 | | 0.0000 | 1.0000 | 99.98 |
| 14.5 | 2,456 | | 0.0000 | 1.0000 | 99.98 |
| 15.5 | 2,456 | | 0.0000 | 1.0000 | 99.98 |
| 16.5 | 2,456 | | 0.0000 | 1.0000 | 99.98 |
| 17.5 | 8,102 | | 0.0000 | 1.0000 | 99.98 |
| 18.5 | 8,102 | | 0.0000 | 1.0000 | 99.98 |
| 19.5 | 7,175 | | 0.0000 | 1.0000 | 99.98 |
| 20.5 | 7,175 | | 0.0000 | 1.0000 | 99.98 |
| 21.5 | 7,175 | | 0.0000 | 1.0000 | 99.98 |
| 22.5 | 7,175 | | 0.0000 | 1.0000 | 99.98 |
| 23.5 | 7,175 | | 0.0000 | 1.0000 | 99.98 |
| 24.5 | 7,175 | | 0.0000 | 1.0000 | 99.98 |
| 25.5 | 7,175 | | 0.0000 | 1.0000 | 99.98 |
| 26.5 | 7,175 | | 0.0000 | 1.0000 | 99.98 |
| 27.5 | 5,646 | | 0.0000 | 1.0000 | 99.98 |
| 28.5 | 5,646 | | 0.0000 | 1.0000 | 99.98 |
| 29.5 | 5,646 | | 0.0000 | 1.0000 | 99.98 |
| 30.5 | | | | | 99.98 |

AQUA TEXAS, INC.
ACCOUNT 354.7 STRUCTURES AND IMPROVEMENTS - GENERAL
ORIGINAL AND SMOOTH SURVIVOR CURVES






AT-GRAY 000425

AQUA TEXAS, INC.

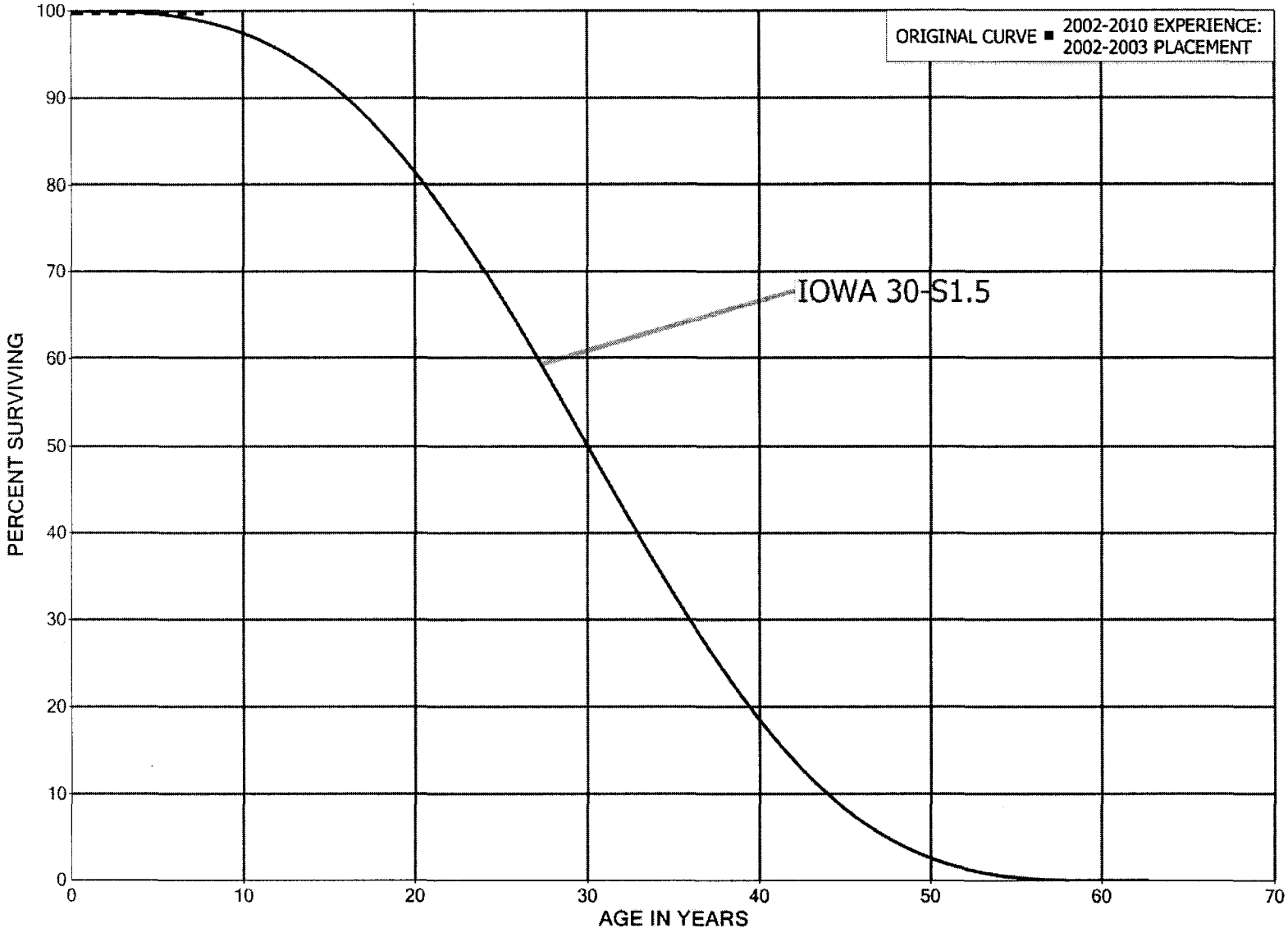
ACCOUNT 354.7 STRUCTURES AND IMPROVEMENTS - GENERAL

ORIGINAL LIFE TABLE

PLACEMENT BAND 1979-2010 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 1,492,735 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 1,500,868 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 1,654,048 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 1,617,436 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 1,567,250 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 1,480,924 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 1,453,718 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 884,029 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 1,057,251 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 450,219 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 201,295 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 196,277 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 43,610 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | 29,628 | | 0.0000 | 1.0000 | 100.00 |
| 13.5 | 29,628 | | 0.0000 | 1.0000 | 100.00 |
| 14.5 | 29,358 | | 0.0000 | 1.0000 | 100.00 |
| 15.5 | 29,671 | | 0.0000 | 1.0000 | 100.00 |
| 16.5 | 29,671 | | 0.0000 | 1.0000 | 100.00 |
| 17.5 | 29,896 | | 0.0000 | 1.0000 | 100.00 |
| 18.5 | 6,088 | | 0.0000 | 1.0000 | 100.00 |
| 19.5 | 6,088 | | 0.0000 | 1.0000 | 100.00 |
| 20.5 | 6,088 | | 0.0000 | 1.0000 | 100.00 |
| 21.5 | 6,088 | | 0.0000 | 1.0000 | 100.00 |
| 22.5 | 6,088 | | 0.0000 | 1.0000 | 100.00 |
| 23.5 | 6,088 | | 0.0000 | 1.0000 | 100.00 |
| 24.5 | 6,088 | | 0.0000 | 1.0000 | 100.00 |
| 25.5 | 3,843 | | 0.0000 | 1.0000 | 100.00 |
| 26.5 | 3,843 | | 0.0000 | 1.0000 | 100.00 |
| 27.5 | 3,843 | | 0.0000 | 1.0000 | 100.00 |
| 28.5 | 3,530 | | 0.0000 | 1.0000 | 100.00 |
| 29.5 | 3,530 | | 0.0000 | 1.0000 | 100.00 |
| 30.5 | | | | | 100.00 |

AQUA TEXAS, INC.
ACCOUNT 355.2 POWER GENERATION EQUIPMENT - COLLECTION
ORIGINAL AND SMOOTH SURVIVOR CURVES






AT-GRAY 000427

AQUA TEXAS, INC.

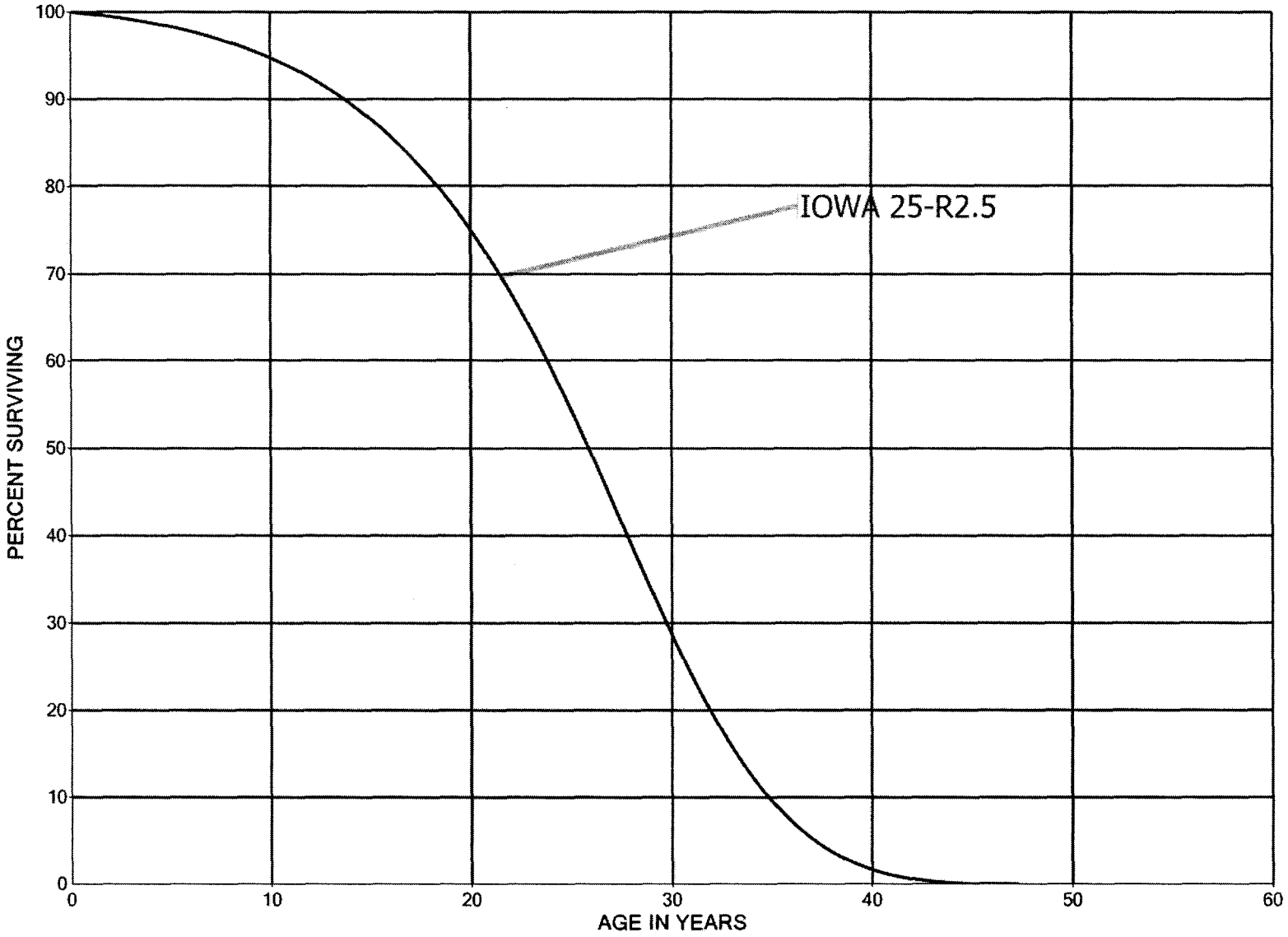
ACCOUNT 355.2 POWER GENERATION EQUIPMENT - COLLECTION

ORIGINAL LIFE TABLE

PLACEMENT BAND 2002-2003 EXPERIENCE BAND 2002-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 51,675 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 51,675 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 51,675 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 51,675 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 51,675 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 51,675 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 55,116 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 51,675 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | | | | | 100.00 |

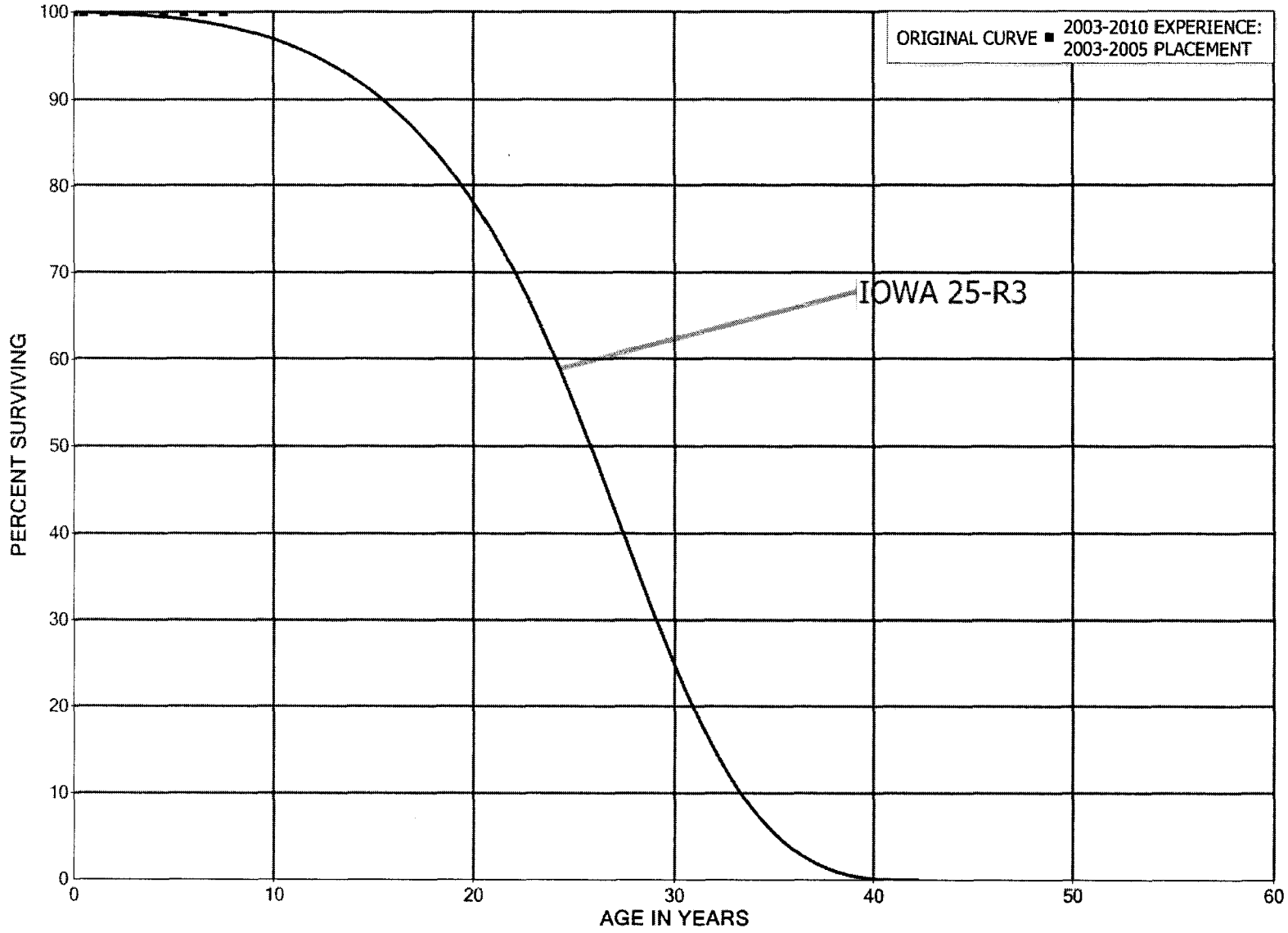
AQUA TEXAS, INC.
ACCOUNT 355.4 POWER GENERATION EQUIPMENT - TRANSMISSION AND DISTRIBUTION PLANT
SMOOTH SURVIVOR CURVE






AT-GRAY 000429

AQUA TEXAS, INC.
ACCOUNT 355.5 POWER GENERATION EQUIPMENT - RAW WATER TREATMENT
ORIGINAL AND SMOOTH SURVIVOR CURVES



AQUA TEXAS, INC.

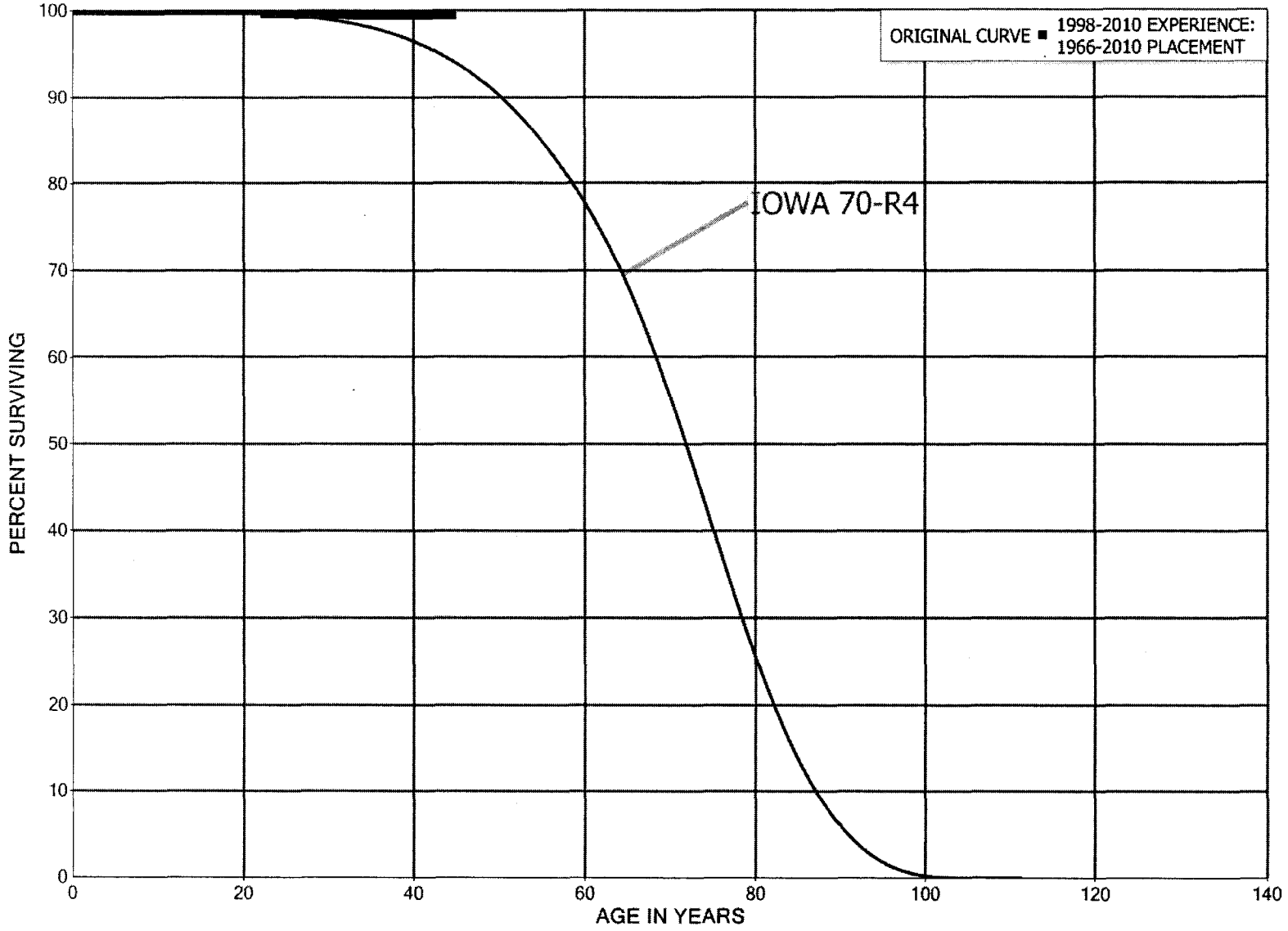
ACCOUNT 355.5 POWER GENERATION EQUIPMENT - RAW WATER TREATMENT

ORIGINAL LIFE TABLE

PLACEMENT BAND 2003-2005 EXPERIENCE BAND 2003-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 85,110 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 85,110 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 85,110 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 85,110 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 85,063 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 85,110 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 82,659 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 29,176 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | | | | | 100.00 |

AQUA TEXAS, INC.
ACCOUNT 360.0 COLLECTION SEWERS - FORCE
ORIGINAL AND SMOOTH SURVIVOR CURVES



AQUA TEXAS, INC.

ACCOUNT 360.0 COLLECTION SEWERS - FORCE

ORIGINAL LIFE TABLE

PLACEMENT BAND 1966-2010 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 6,211,539 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 6,095,051 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 6,158,136 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 5,779,860 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 5,128,801 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 4,811,096 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 4,271,926 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 4,148,293 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 2,625,173 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 1,704,841 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 675,705 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 274,310 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 232,452 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | 233,482 | | 0.0000 | 1.0000 | 100.00 |
| 13.5 | 263,262 | | 0.0000 | 1.0000 | 100.00 |
| 14.5 | 261,270 | | 0.0000 | 1.0000 | 100.00 |
| 15.5 | 240,415 | | 0.0000 | 1.0000 | 100.00 |
| 16.5 | 324,746 | | 0.0000 | 1.0000 | 100.00 |
| 17.5 | 450,580 | | 0.0000 | 1.0000 | 100.00 |
| 18.5 | 437,888 | | 0.0000 | 1.0000 | 100.00 |
| 19.5 | 437,888 | | 0.0000 | 1.0000 | 100.00 |
| 20.5 | 525,775 | | 0.0000 | 1.0000 | 100.00 |
| 21.5 | 526,492 | 1,944 | 0.0037 | 0.9963 | 100.00 |
| 22.5 | 474,541 | | 0.0000 | 1.0000 | 99.63 |
| 23.5 | 489,062 | | 0.0000 | 1.0000 | 99.63 |
| 24.5 | 618,959 | | 0.0000 | 1.0000 | 99.63 |
| 25.5 | 621,204 | 858 | 0.0014 | 0.9986 | 99.63 |
| 26.5 | 590,566 | | 0.0000 | 1.0000 | 99.49 |
| 27.5 | 590,566 | | 0.0000 | 1.0000 | 99.49 |
| 28.5 | 523,989 | | 0.0000 | 1.0000 | 99.49 |
| 29.5 | 371,107 | | 0.0000 | 1.0000 | 99.49 |
| 30.5 | 290,863 | | 0.0000 | 1.0000 | 99.49 |
| 31.5 | 351,114 | 466 | 0.0013 | 0.9987 | 99.49 |
| 32.5 | 344,757 | | 0.0000 | 1.0000 | 99.36 |
| 33.5 | 256,860 | | 0.0000 | 1.0000 | 99.36 |
| 34.5 | 233,549 | | 0.0000 | 1.0000 | 99.36 |
| 35.5 | 233,549 | | 0.0000 | 1.0000 | 99.36 |
| 36.5 | 214,165 | | 0.0000 | 1.0000 | 99.36 |
| 37.5 | 89,131 | | 0.0000 | 1.0000 | 99.36 |
| 38.5 | 85,856 | | 0.0000 | 1.0000 | 99.36 |

AQUA TEXAS, INC.

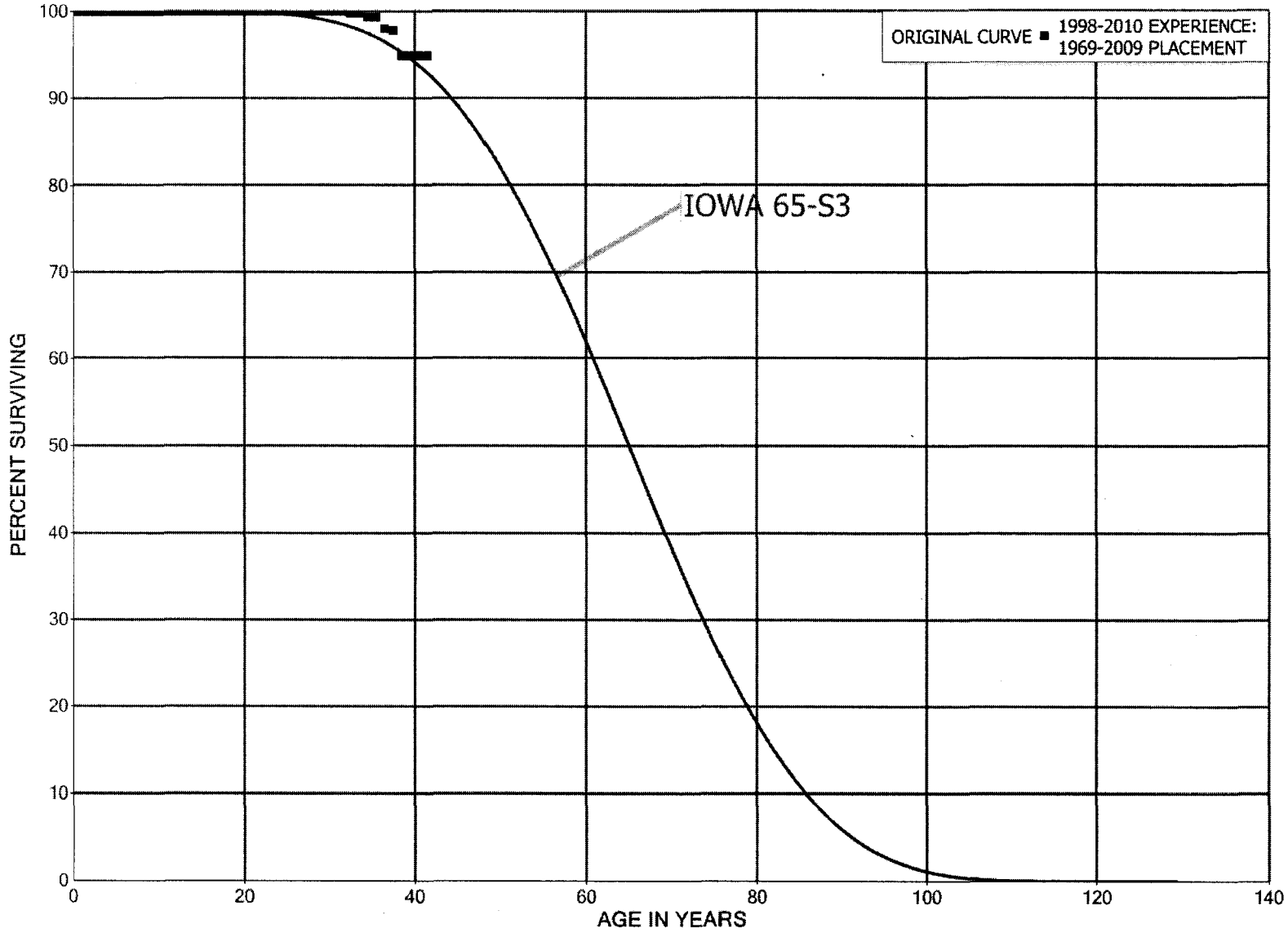
ACCOUNT 360.0 COLLECTION SEWERS - FORCE

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1966-2010 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 39.5 | 85,856 | | 0.0000 | 1.0000 | 99.36 |
| 40.5 | 85,856 | | 0.0000 | 1.0000 | 99.36 |
| 41.5 | 85,856 | | 0.0000 | 1.0000 | 99.36 |
| 42.5 | 85,856 | | 0.0000 | 1.0000 | 99.36 |
| 43.5 | 85,856 | | 0.0000 | 1.0000 | 99.36 |
| 44.5 | | | | | 99.36 |

AQUA TEXAS, INC.
ACCOUNT 361.0 COLLECTION SEWERS - GRAVITY
ORIGINAL AND SMOOTH SURVIVOR CURVES



AQUA TEXAS, INC.

ACCOUNT 361.0 COLLECTION SEWERS - GRAVITY

ORIGINAL LIFE TABLE

PLACEMENT BAND 1969-2009 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 7,079,268 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 7,167,382 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 7,832,054 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 7,697,283 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 7,557,238 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 7,483,182 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 6,979,611 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 5,470,149 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 4,715,972 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 3,695,544 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 2,695,763 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 2,594,999 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 1,984,939 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | 2,302,188 | | 0.0000 | 1.0000 | 100.00 |
| 13.5 | 3,058,988 | | 0.0000 | 1.0000 | 100.00 |
| 14.5 | 2,901,812 | | 0.0000 | 1.0000 | 100.00 |
| 15.5 | 3,796,445 | | 0.0000 | 1.0000 | 100.00 |
| 16.5 | 4,168,623 | | 0.0000 | 1.0000 | 100.00 |
| 17.5 | 4,204,522 | | 0.0000 | 1.0000 | 100.00 |
| 18.5 | 4,675,133 | | 0.0000 | 1.0000 | 100.00 |
| 19.5 | 4,888,558 | | 0.0000 | 1.0000 | 100.00 |
| 20.5 | 5,549,595 | | 0.0000 | 1.0000 | 100.00 |
| 21.5 | 5,824,589 | | 0.0000 | 1.0000 | 100.00 |
| 22.5 | 5,386,419 | | 0.0000 | 1.0000 | 100.00 |
| 23.5 | 5,807,670 | | 0.0000 | 1.0000 | 100.00 |
| 24.5 | 6,110,897 | | 0.0000 | 1.0000 | 100.00 |
| 25.5 | 5,914,153 | | 0.0000 | 1.0000 | 100.00 |
| 26.5 | 5,141,297 | | 0.0000 | 1.0000 | 100.00 |
| 27.5 | 5,359,547 | | 0.0000 | 1.0000 | 100.00 |
| 28.5 | 4,443,014 | | 0.0000 | 1.0000 | 100.00 |
| 29.5 | 3,745,555 | | 0.0000 | 1.0000 | 100.00 |
| 30.5 | 3,421,180 | | 0.0000 | 1.0000 | 100.00 |
| 31.5 | 3,015,816 | 9,383 | 0.0031 | 0.9969 | 100.00 |
| 32.5 | 2,609,504 | | 0.0000 | 1.0000 | 99.69 |
| 33.5 | 1,685,988 | 6,572 | 0.0039 | 0.9961 | 99.69 |
| 34.5 | 1,112,666 | | 0.0000 | 1.0000 | 99.30 |
| 35.5 | 1,109,593 | 14,954 | 0.0135 | 0.9865 | 99.30 |
| 36.5 | 731,440 | 1,905 | 0.0026 | 0.9974 | 97.96 |
| 37.5 | 372,281 | 10,951 | 0.0294 | 0.9706 | 97.71 |
| 38.5 | 217,744 | | 0.0000 | 1.0000 | 94.83 |

AQUA TEXAS, INC.

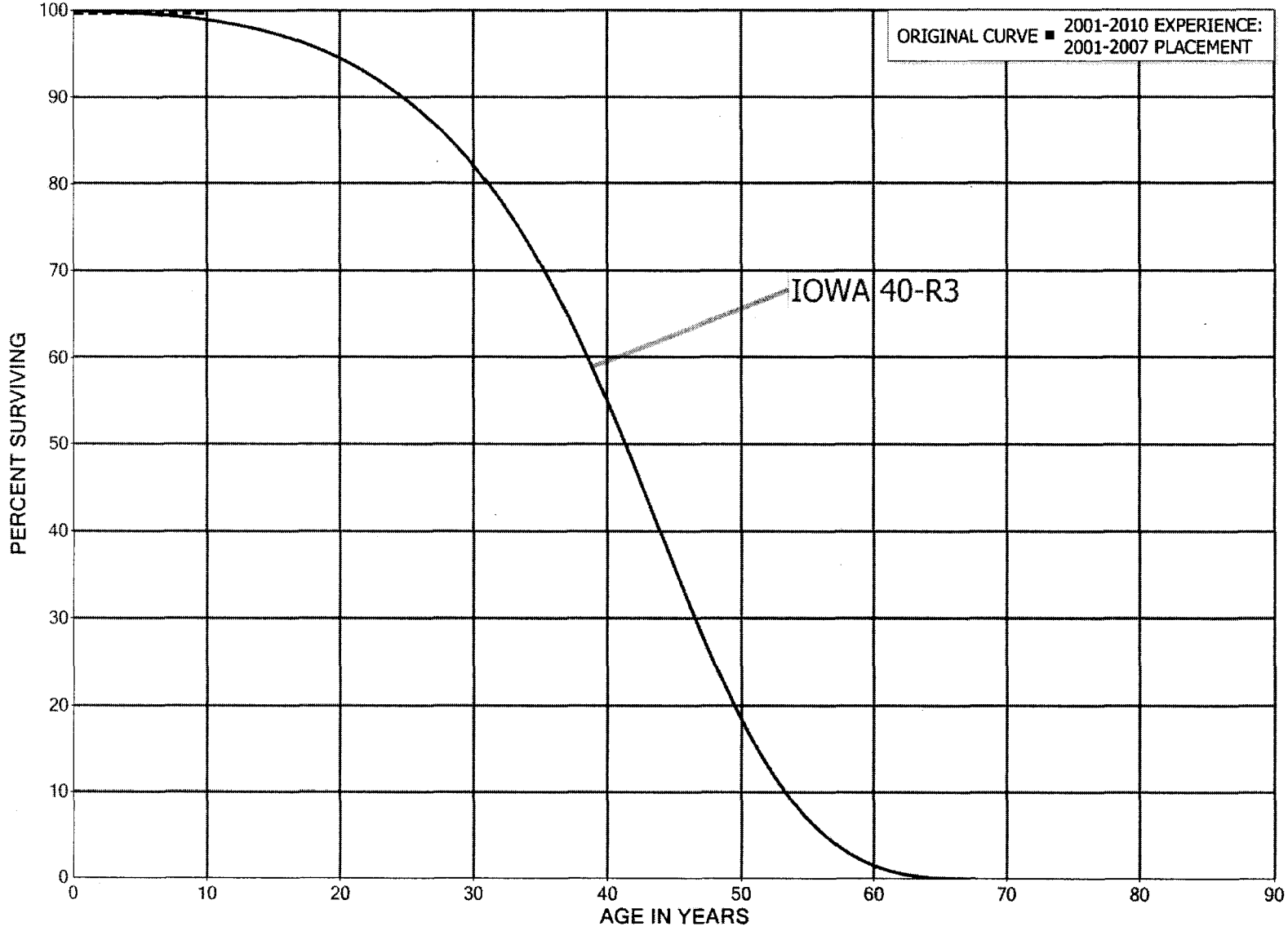
ACCOUNT 361.0 COLLECTION SEWERS - GRAVITY

ORIGINAL LIFE TABLE, CONT.

PLACEMENT BAND 1969-2009 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 39.5 | 142,948 | | 0.0000 | 1.0000 | 94.83 |
| 40.5 | 142,738 | | 0.0000 | 1.0000 | 94.83 |
| 41.5 | | | | | 94.83 |

AQUA TEXAS, INC.
ACCOUNT 362.0 SPECIAL COLLECTION STRUCTURES
ORIGINAL AND SMOOTH SURVIVOR CURVES



AQUA TEXAS, INC.

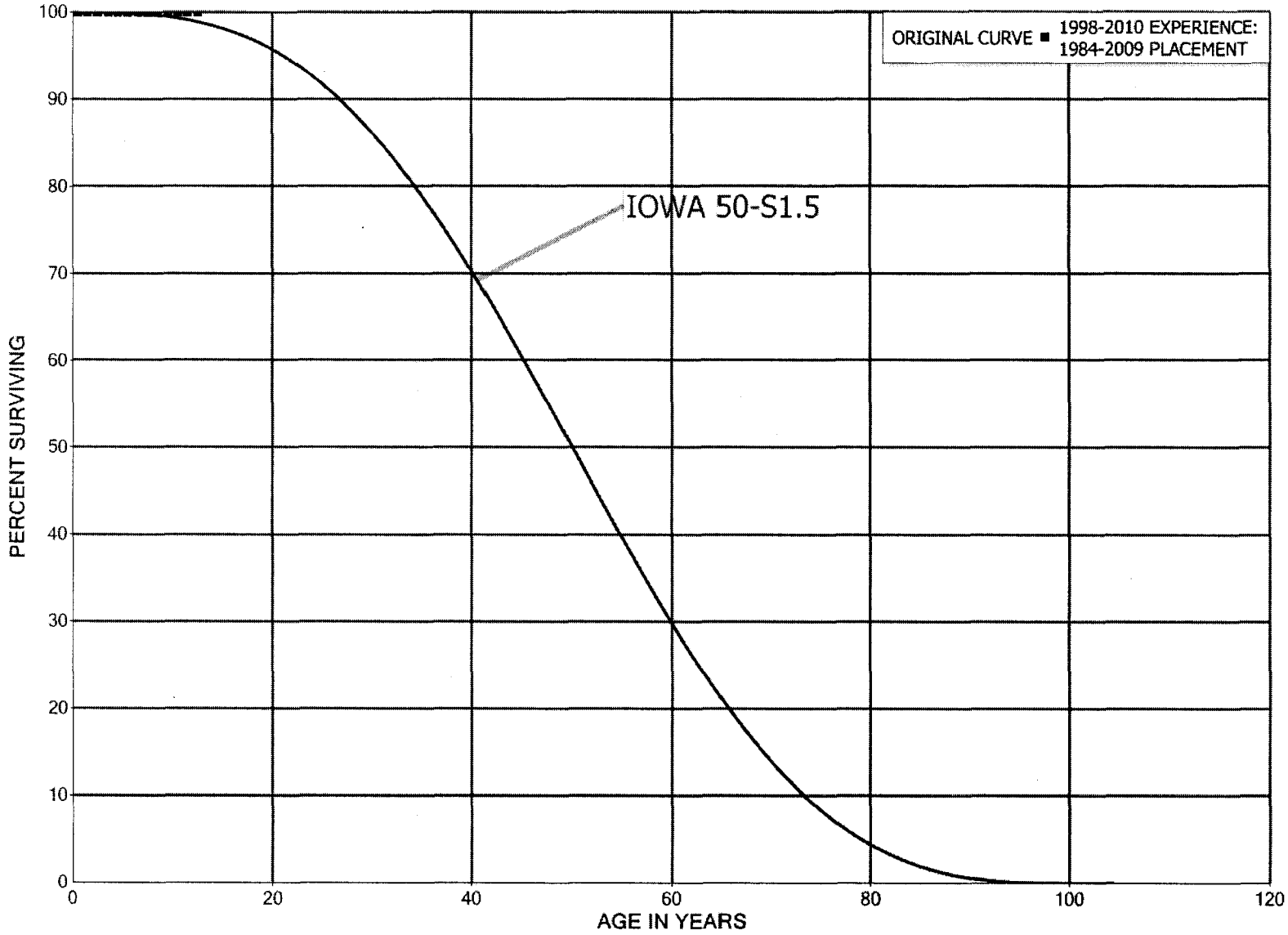
ACCOUNT 362.0 SPECIAL COLLECTION STRUCTURES

ORIGINAL LIFE TABLE

PLACEMENT BAND 2001-2007 EXPERIENCE BAND 2001-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 185,097 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 185,097 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 125,308 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 128,633 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 120,156 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 108,399 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 108,399 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 101,191 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 101,191 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 99,886 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | | | | | 100.00 |

AQUA TEXAS, INC.
ACCOUNT 363.0 SERVICES TO CUSTOMERS
ORIGINAL AND SMOOTH SURVIVOR CURVES






AT-GRAY 000440

AQUA TEXAS, INC.

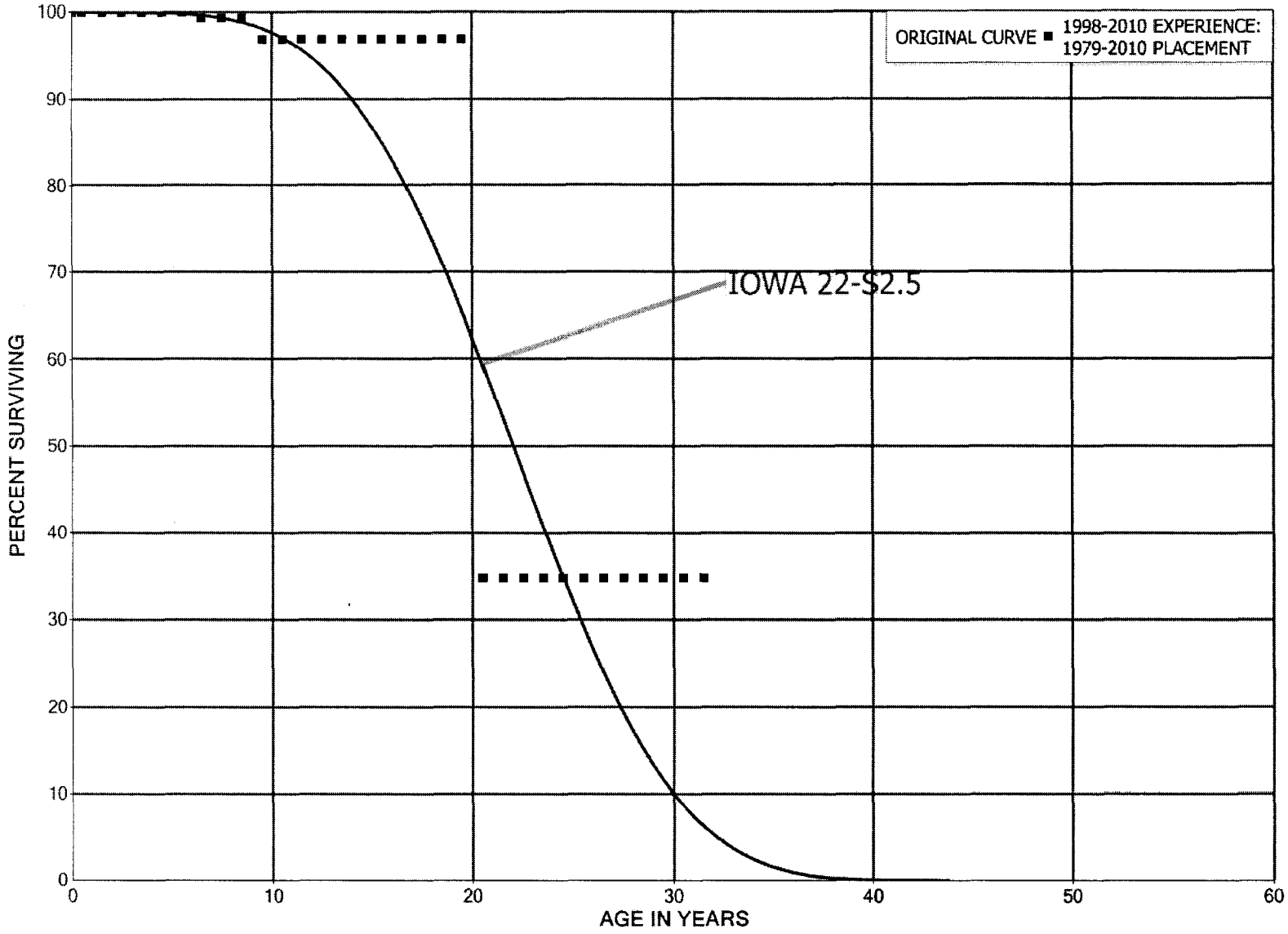
ACCOUNT 363.0 SERVICES TO CUSTOMERS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1984-2009 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 2,926,362 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 2,973,962 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 3,117,270 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 3,094,090 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 2,669,373 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 2,142,475 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 2,089,412 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 1,783,109 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 1,555,490 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 1,363,065 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 818,165 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 620,887 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | 2,630 | | 0.0000 | 1.0000 | 100.00 |
| 12.5 | | | | | 100.00 |
| 13.5 | 109,324 | | 0.0000 | | |
| 14.5 | 109,324 | | 0.0000 | | |
| 15.5 | 109,324 | | 0.0000 | | |
| 16.5 | 109,324 | | 0.0000 | | |
| 17.5 | 109,324 | | 0.0000 | | |
| 18.5 | 109,324 | | 0.0000 | | |
| 19.5 | 109,324 | | 0.0000 | | |
| 20.5 | 109,324 | | 0.0000 | | |
| 21.5 | 109,324 | | 0.0000 | | |
| 22.5 | 109,324 | | 0.0000 | | |
| 23.5 | 109,324 | | 0.0000 | | |
| 24.5 | 109,324 | | 0.0000 | | |
| 25.5 | 109,324 | | 0.0000 | | |
| 26.5 | | | | | |

AQUA TEXAS, INC.
ACCOUNT 364.0 FLOW MEASURING DEVICES
ORIGINAL AND SMOOTH SURVIVOR CURVES



AQUA TEXAS, INC.

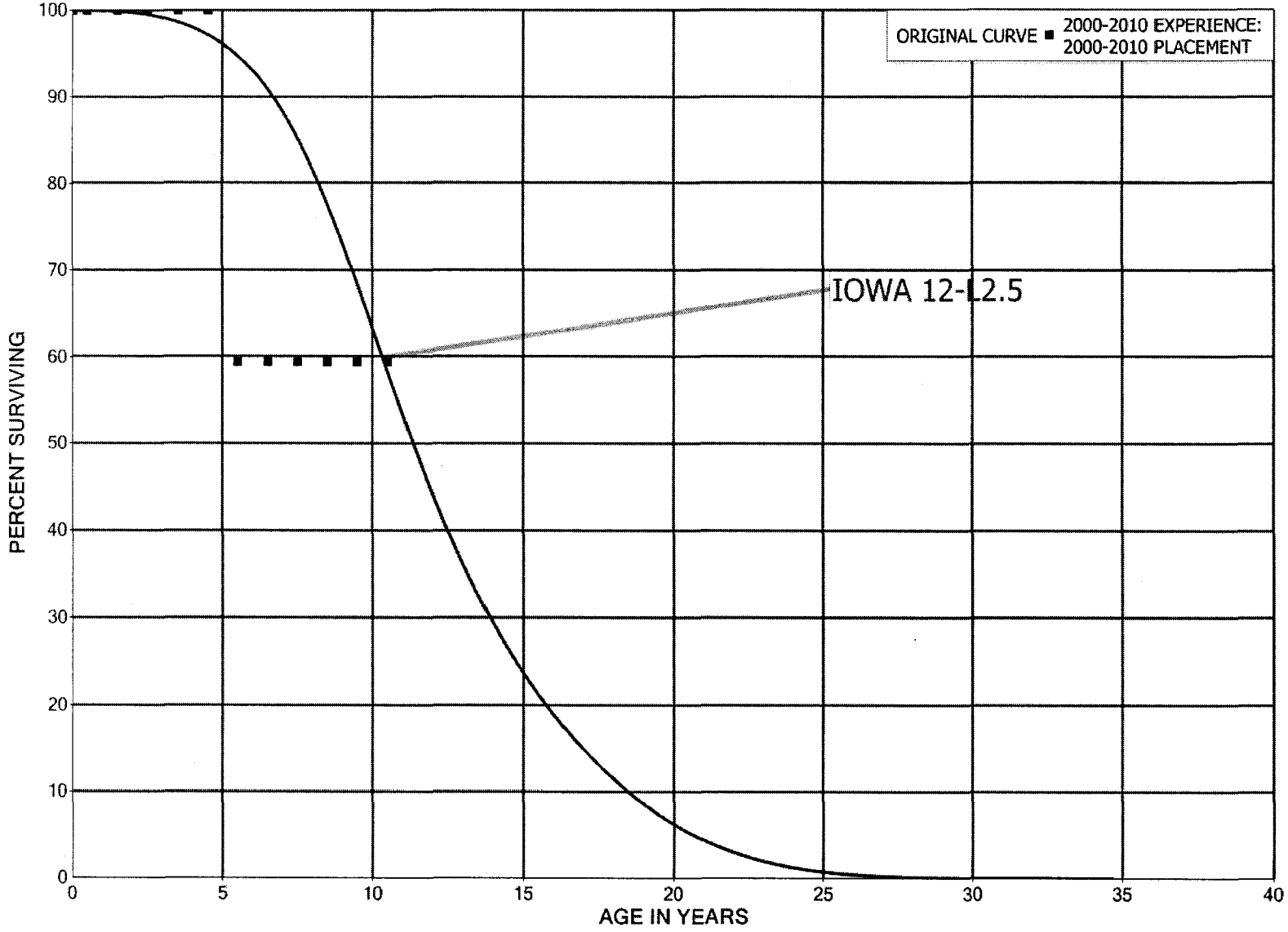
ACCOUNT 364.0 FLOW MEASURING DEVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1979-2010 EXPERIENCE BAND 1998-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 744,310 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 762,415 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 768,408 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 774,574 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 774,973 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 739,474 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 684,741 | 4,829 | 0.0071 | 0.9929 | 100.00 |
| 6.5 | 332,413 | | 0.0000 | 1.0000 | 99.29 |
| 7.5 | 331,186 | | 0.0000 | 1.0000 | 99.29 |
| 8.5 | 114,084 | 2,826 | 0.0248 | 0.9752 | 99.29 |
| 9.5 | 56,950 | | 0.0000 | 1.0000 | 96.84 |
| 10.5 | 38,871 | | 0.0000 | 1.0000 | 96.84 |
| 11.5 | 31,102 | | 0.0000 | 1.0000 | 96.84 |
| 12.5 | 31,102 | | 0.0000 | 1.0000 | 96.84 |
| 13.5 | 23,107 | | 0.0000 | 1.0000 | 96.84 |
| 14.5 | 19,377 | | 0.0000 | 1.0000 | 96.84 |
| 15.5 | 15,220 | | 0.0000 | 1.0000 | 96.84 |
| 16.5 | 7,901 | | 0.0000 | 1.0000 | 96.84 |
| 17.5 | 3,471 | | 0.0000 | 1.0000 | 96.84 |
| 18.5 | 5,408 | | 0.0000 | 1.0000 | 96.84 |
| 19.5 | 5,408 | 3,471 | 0.6419 | 0.3581 | 96.84 |
| 20.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 21.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 22.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 23.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 24.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 25.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 26.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 27.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 28.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 29.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 30.5 | 1,937 | | 0.0000 | 1.0000 | 34.68 |
| 31.5 | | | | | 34.68 |

AQUA TEXAS, INC.
ACCOUNT 365.0 FLOW MEASURING INSTALLATIONS
ORIGINAL AND SMOOTH SURVIVOR CURVES



AQUA TEXAS, INC.

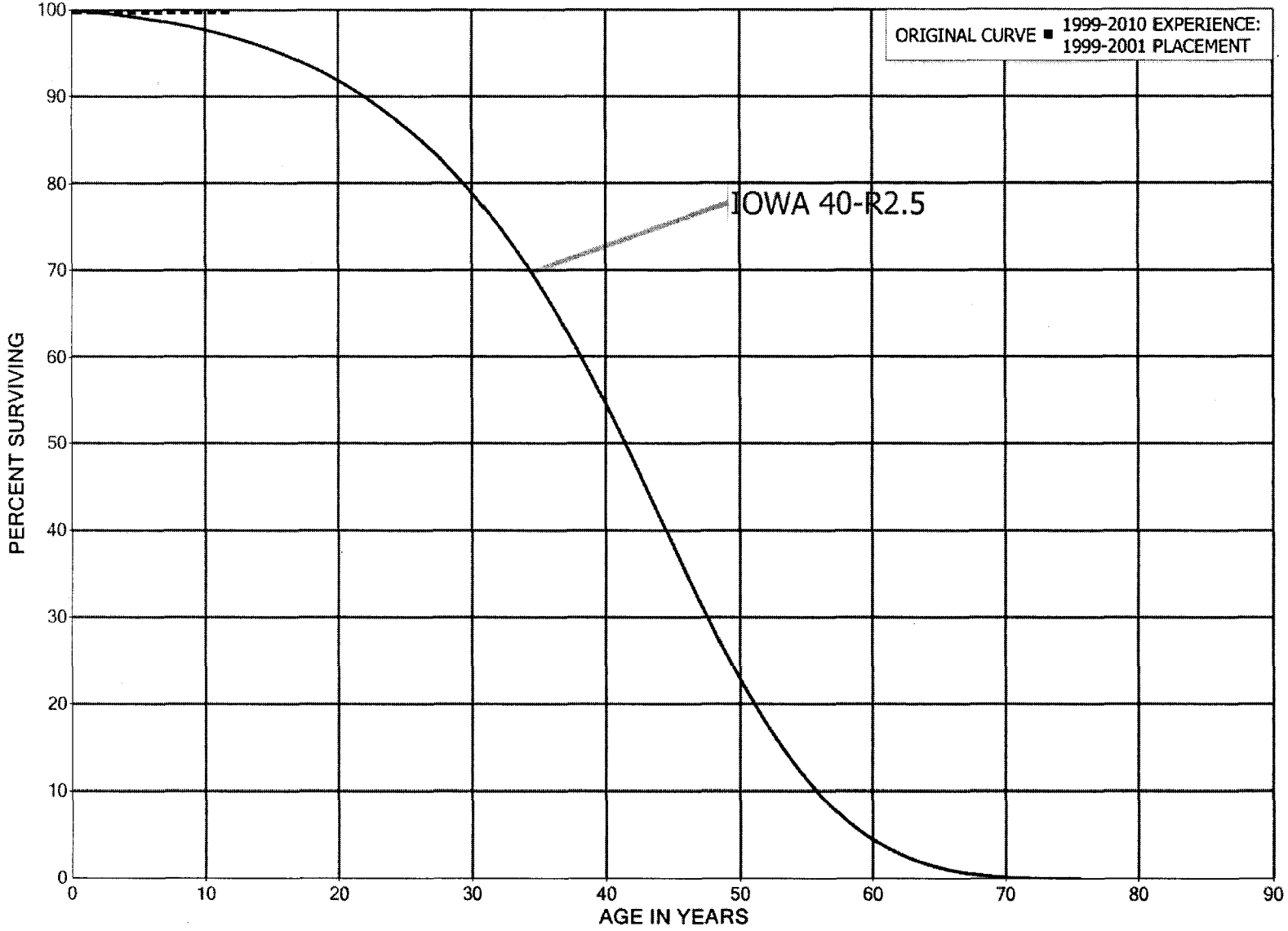
ACCOUNT 365.0 FLOW MEASURING INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 2000-2010 EXPERIENCE BAND 2000-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 27,525 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 15,723 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 15,723 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 12,592 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 12,592 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 9,856 | 4,004 | 0.4062 | 0.5938 | 100.00 |
| 5.5 | 5,852 | | 0.0000 | 1.0000 | 59.38 |
| 6.5 | 2,274 | | 0.0000 | 1.0000 | 59.38 |
| 7.5 | 2,274 | | 0.0000 | 1.0000 | 59.38 |
| 8.5 | 2,274 | | 0.0000 | 1.0000 | 59.38 |
| 9.5 | 2,274 | | 0.0000 | 1.0000 | 59.38 |
| 10.5 | | | | | 59.38 |

AQUA TEXAS, INC.
ACCOUNT 366.0 REUSE SERVICES
ORIGINAL AND SMOOTH SURVIVOR CURVES



AQUA TEXAS, INC.

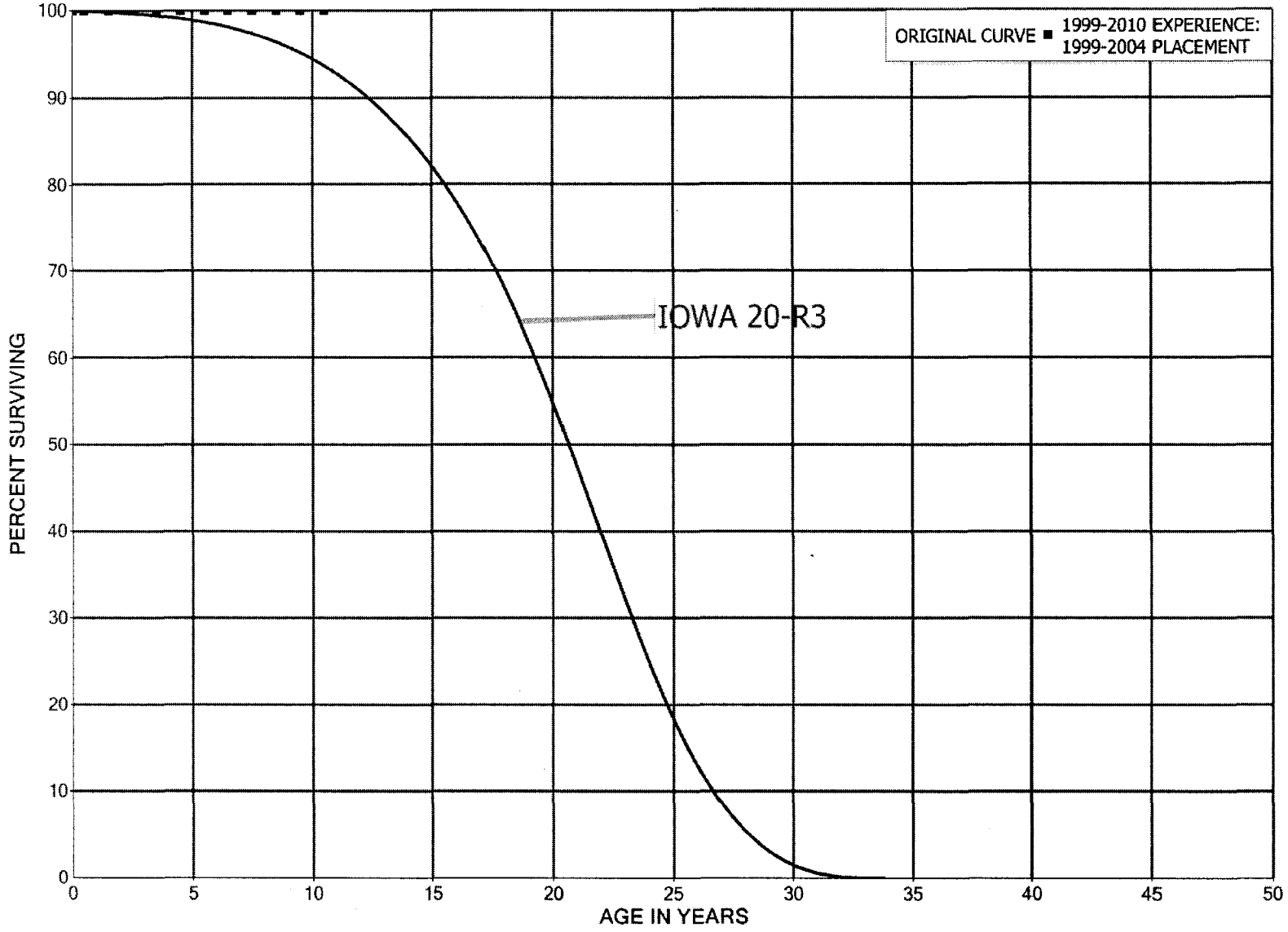
ACCOUNT 366.0 REUSE SERVICES

ORIGINAL LIFE TABLE

PLACEMENT BAND 1999-2001 EXPERIENCE BAND 1999-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 41,642 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 38,207 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | 38,207 | | 0.0000 | 1.0000 | 100.00 |
| 11.5 | | | | | 100.00 |

AQUA TEXAS, INC.
ACCOUNT 367.0 REUSE METERS AND INSTALLATIONS
ORIGINAL AND SMOOTH SURVIVOR CURVES



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AQUA TEXAS, INC.

ACCOUNT 367.0 REUSE METERS AND INSTALLATIONS

ORIGINAL LIFE TABLE

PLACEMENT BAND 1999-2004 EXPERIENCE BAND 1999-2010

| AGE AT BEGIN OF INTERVAL | EXPOSURES AT BEGINNING OF AGE INTERVAL | RETIREMENTS DURING AGE INTERVAL | RETMT RATIO | SURV RATIO | PCT SURV BEGIN OF INTERVAL |
|---|---|---|---|---|---|
| 0.0 | 2,370 | | 0.0000 | 1.0000 | 100.00 |
| 0.5 | 2,370 | | 0.0000 | 1.0000 | 100.00 |
| 1.5 | 2,370 | | 0.0000 | 1.0000 | 100.00 |
| 2.5 | 2,370 | | 0.0000 | 1.0000 | 100.00 |
| 3.5 | 2,370 | | 0.0000 | 1.0000 | 100.00 |
| 4.5 | 2,370 | | 0.0000 | 1.0000 | 100.00 |
| 5.5 | 2,370 | | 0.0000 | 1.0000 | 100.00 |
| 6.5 | 1,978 | | 0.0000 | 1.0000 | 100.00 |
| 7.5 | 1,978 | | 0.0000 | 1.0000 | 100.00 |
| 8.5 | 1,978 | | 0.0000 | 1.0000 | 100.00 |
| 9.5 | 1,978 | | 0.0000 | 1.0000 | 100.00 |
| 10.5 | | | | | 100.00 |

AQUA TEXAS, INC.
ACCOUNT 370.0 RECEIVING WELLS
ORIGINAL AND SMOOTH SURVIVOR CURVES