

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

1. Refer to WSKY's response to Commission Staff's Second Request for Information ("Staff's Second Request"), Item 3.b. WSKY was requested to discuss the details of the acquisition made by WSKY that required the recording of the acquisition adjustment. Explain in detail why it is appropriate to remove the amortization of this plant acquisition adjustment from test-year operations.

Response: WSKY believed that the removal of the amortization of the plant acquisition adjustment from test-year operations was appropriate since this is commonly accepted by the PSC. Please refer to the final order of Case No. 2013-00237 (page 23) and the final order of Case No. 2010-00476 (page 14). In both instances the Commission states, "...we find the proposed adjustment is reasonable and we accept it."

Witness: Steve Lubertozzi

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

2. Refer to WSKY's response to Staff's Second Request, Item 4.a. For each deferred charge identified in Item 4.a., provide invoices or direct time reporting to support the deferred costs.

Response: Please refer to the attached files, listed below, for the invoices related to each deferred charge identified in Item 4.a.

"Staff DR 3.02 – Asset 1006258"

"Staff DR 3.02 – Asset 1007984"

"Staff DR 3.02 – Asset 1008005"

"Staff DR 3.02 – Asset 1008115"

"Staff DR 3.02 – Asset 1008258"

"Staff DR 3.02 – Asset 5000134"

"Staff DR 3.02 – Asset 5000366"

Below is a breakout of costs to support the deferred costs presented in Item 4.a.

Response to Staff DR 3.02

<u>345.2960</u>	Invoice	Direct Time	Total
Asset Number	Amount	Amount	Amount
1006258	28,469	-	28,469
1008115	3,000	-	3,000
1008258	3,100	-	3,100
5000134	34,526	-	34,526
5000366	60,600	6,016	66,616

<u>345.3005</u>	Invoice	Direct Time	Total
Asset Number	Amount	Amount	Amount
1007984	1,555	-	1,555
1008005	900	-	900

Witness: Brian Halloran

Staff DR 3.2

Asset 1006258

RECEIVED

NOV 13 2012

Invoice



Date	Invoice #
11/9/2012	3438

Batch 141741
Doc 477839

Bill To
Utilities, Inc. P.O. Box 818 102 Water Plant Road Middlesboro, KY 40965

P.O. #	Terms
	Net 30

Description	Quantity	Rate	Amount
Blast & Paint fire hydrants	343	80.00	27,440.00
Blast & Paint hydrant caps	343	3.00	1,029.00
<p>P.O. # 119375 B.U. # 345102</p>			
We look forward to working with you again!		Total	\$28,469.00
		Payments/Deposits	\$0.00
		Balance Due	\$28,469.00

Staff DR 3.2

Asset 1007984

RECEIVED

SEP 05 2014

P.O. Box 907
Madisonville, KY 42431
270.821.7375



McCoy McCoy Laboratories, Inc.

Celebrating 60 Years of Service

www.mccoyslabs.com

INVOICE

E - Hard Copy Req'd

E-Mail: m.cocke@mccoyslabs.com

Invoice To:

Water Service Corporation of KY
Accounts Payable
2335 Sanders Road
Northbrook, IL 60062

Invoice Number: 1255387
Customer ID: WA9125
Invoice Date: 08/31/2014
Invoice Due: 09/30/2014
PO Number: 167861 BU345101

Sample ID: 4071223-01

Sample Date: 07/22/2014 13:05

Batch _____

Sample Desc: TPA Deep Wells WTP

Doc 626653

Analysis:

SOC Pkg KY
Trip 15 Pad

<u>Amount</u>
\$1,540.00
\$15.00

Total for Sample ID 4071223-01 \$1,555.00

Total for Work Order 4071223 \$1,555.00

Total for Invoice 1255387 Please Pay This Amount \$1,555.00

We appreciate your business and continued support. We remain committed to supplying you with the highest quality analytical results. If you have any questions concerning this invoice, please contact us at 270-821-7375.

Please submit this stub with payment

Customer ID: WA9125

Invoice: 1255387

Date: 9/3/2014

Invoice Amount: \$1,555.00

REMIT TO

PO BOX 907, Madisonville, KY 42431

Terms - Net 30 Days

A finance charge of 1 1/2% per month will be charged on past due balances over 30 days old. The minimum finance charge is 50¢.

Staff DR 3.2

Asset 1008005

3005061

Fouser Environmental Services

165 Camden Avenue
Versailles, KY 40383

INVOICE

RECEIVED

SEP 04 2014

DATE	INVOICE #
9/4/2014	45355

BILL TO:
Water Service Corporation of Kentucky 2335 Sanders Road Northbrook, Illinois 60062 Attn: Accounts Payable

Batch _____

Doc 626665

P.O. No.	TERMS
	Net 30

DESCRIPTION	QUANTITY	UNIT COST	AMOUNT
August 2014			
Total Coliform Analysis	25	12.00	300.00
Fluoride Analysis	2	15.00	30.00
Total Suspended Solids Analysis	1	15.00	15.00
Phosphorous Analyses	1	20.00	20.00
Analyses of Metals	1	15.00	15.00
TOC Analyses	2	30.00	60.00
DOC Analyses	2	40.00	80.00
Alkalinity Analysis	1	15.00	15.00
HPC Analyses	10	20.00	200.00
Complete Inorganic Analysis	1	195.00	195.00
Additional Secondary Analysis	1	65.00	65.00
Nitrate-Nitrite Analysis	1	35.00	35.00
Synthetic Organic Chemicals Analysis	1	900.00	900.00
Shipping Charges	1	89.00	89.00

PO# 167701
Business Unit # 345102

Please Include Invoice Number with Payment.
 Pay online at: <https://ipn.intuit.com/23w9shz9>
 Accounts Pay. 90 Days May. Acc. # 104 Per Month Late Fee.
 For all billing questions please call (859) 873-6211

BALANCE DUE	\$2,019.00
--------------------	-------------------

Staff DR 3.2

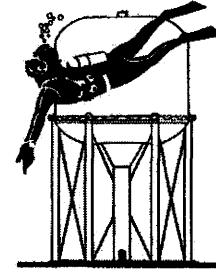
Asset 1008115

3006038

WET or DRY

RECEIVED

SEP 11 2014



Tank
Inspection
Services

Member: NACE, SSPC, ASTM, AWWA, NFPA
National Association of Corrosion Engineers Coatings
Inspectors on-staff

INVOICE

Batch _____

Invoice # 3
PO # 168485
B U# 345101
Date 11 Sept 2014

Doc 628000

Utilities, Inc.
2335 Sander's Road
Northbrook, IL.60062
Attn: Accounts payable

Evaluation and reports of 2 systems water storage tanks
WSC KY Clinton 100 E Jackson St, Clinton KY 42031

Total Due \$ 3,000.00

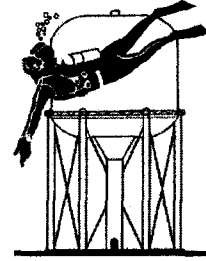
Please remit payment to:
Wet or Dry
1609 Hillsboro Rd.
Campbellsburg, KY 40011

006038

WET or DRY

RECEIVED

MAY 19 2014



Tank
Inspection
Services

Member: NACE, SSPC, ASTM, AWWA, NFPA
National Association of Corrosion Engineers Coatings
Inspectors on-staff

Batch 181477
Doc 601765

INVOICE

Invoice # 2
PO # 159758-345
Project # N/A
B U# 345102
Date 19May 2014

Utilities, Inc.
2335 Sander's Road
Northbrook, IL.60062
Attn: Accounts payable

Evaluation and reports tanks Middlesboro, KY operation

Total Due \$ 3,100.00

Please remit payment to:
Wet or Dry
1609 Hillsboro Rd.
Campbellsburg, KY 40011

Staff DR 3.02

Asset 5000134

Sep. 14. 2007 2:57PM & TOWER CO., INC

No. 7546
INVOICE:

P. 1

11037

PO BOX 517
1 WATERTANK PLACE
HENDERSON, KY 42419
(270) 826-9000

V 20304

Sold to

WATER SERVICE CORPORATION
P.O. BOX 818
ATTN JAMES LEANARD:
MIDDLESBORO, KY 40965

Ship to

CUSTOMER NAME
JOB # 207099/1
APPLY LOGO ON TANK
LAKE HILL RD SOUTH 20TH STREET
MIDDLESBORO, KY 40965

Account
WATESERV

P.O. Num

Ship Via

Ship Date

Terms
Net 30

Invoice

Date

09/14/07

Page
1

Item	Quantity	Description	Unit Price	Extended Price
	1	10% OF CONTRACT AMOUNT DUE UPON PLACEMENT OF ORDER	2142.00	2,142.00

140

PROJECT
ID# 4738

170 WATER SEWER OR BOTH PROJECT P.O. # 52-1592

SUB#

SUB NAME

R. 1100

CR

APPL

DATE

Subtotal

2,142.00

2

Total

\$2,142.00

RECEIVED SEP 17 2007

9/17 [Signature]

AAFS SYSTEMS
P.O. BOX 2310
MIDDLESBORO, KY 40965

I N V O I C E

10-16-07 99144

Terms : DUE BY 10TH

606-248-2929

1544
SERVICE ADDRESS :

71-270

WATER SERV. CORP. OF KY
MIDDLESBORO WATER COMPANY
P.O. BOX 240908-FILTRATION
CHARLOTTE NC 28224-0908

WATER SERV. CORP. OF KY
MIDDLESBORO WATER COMPANY
FILTRATION PLANT
LAKE HILL
MIDDLESBORO KY 40965
606-248-2306 LOC.

QUAN	PART #	DESCRIPTION	UNIT PRICE	TOTAL
1	DUE	75% OF BALANCE DUE UP FRONT FOR CAMERA SYSTEM	13,105.58	13,105.58

TAX IS INCLUDED
IN BILL.

SUB-TOTAL \$ 13,105.58
 SALES TAX \$ 0.00
 T O T A L \$ 13,105.58

===== OUTSTANDING INVOICES =====

1-29 Days	30 Days	60 Days	90+ Days
36.80	0.00	0.00	0.00

AAFS SYSTEMS

=====

T O T A L
D U E \$ ~~13,142.38~~

=====

118

*P.O.#
JK-1624*

**PROJECT
ID# 4768**

170

[Signature] *10/19*

RECEIVED OCT 18 2007

PITTSBURG TANK & TOWER CO., INC
P0 BOX 517
1 WATERTANK PLACE
HENDERSON, KY 42419
(270) 826-9000

Invoice:

11173

V903140

Sold to

WATER SERVICE CORPORATION
P.O. BOX 818
ATTN: JAMES LEONARD
MIDDLESBORO, KY 40965

Ship to

UTILITIES INC
JOB # 207099
APPLY LOGO ON TANK
LAKE HILL RD SOUTH 20TH STREET
MIDDLESBORO, KY 40965

Account
WATESERV

P.O. Num

Ship Via

Ship Date

Terms
Net 30

Invoice Date
10/11/07

Page
1

Item

Quantity
1

Description
COMPLETION OF PROJECT TO APPLYING
LOGO ON TANK

Unit Price

19278.00

Extended Price

19,278.00

P.O. # JK-1623

11/10/07 TT 40500 118

PROJECT
ID# 4738

170 WATER SEWER OR BOTH CIRCLE
[Signature]
RECEIVED OCT 18 2007

Subtotal 19,278.00

Total \$19,278.00

Staff DR 3.2

Asset 5000366

RECEIVED

JAN 15 2013

WET or DRY



**Tank
Inspection
Services**

SM

Member: NACE, SSPC, ASTM, AWWA, NFPA

National Association of Corrosion Engineers Coatings
Inspectors on-staff

INVOICE

Invoice # 1
PO # _123080_____
Project # _2012078__
B U# _345101_____
Date _ 2 Jan 2013__

Utilities, Inc.
2335 Sander's Road
Northbrook, IL.60062
Attn: Accounts payable

Batch 146485
Doc 491783

Repair and repainting of 200,000 Gallon standpipe tank Clinton KY

Total Due \$ 60,600.00

Please remit payment to:
Wet or Dry
1609 Hillsboro Rd.
Campbellsburg, KY 40011

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

3. Refer to WSKY's responses to Staff's Second Request, Item 7.

a. In response to Item 7.c., WSKC provided information that suggested an average annual "conservation" effect of 0.72 percent per year. Provide copies of any analysis, study, or any other form of evidence to support that this trend will continue into the years that the rates in this proceeding will be in effect.

b. For Item 7.d., Commission Staff requested that WSKC provide the work papers that show the derivation of the \$13,737 adjustment using the results of the consumption analysis. Using the results provided in the consumption analysis work papers, recalculate the usage normalization adjustment by customer class, showing all formulas and assumptions used to calculate each adjustment.

c. In response to Item 7.e., WSKC provided the order for Utility Services of Illinois, Inc.'s most recent rate application.

1) As was mentioned in the order, provide any industry studies, reports, executive orders, and other governmental policies that indicate a trend toward lower water usage.

2) Confirm that none of Utilities, Inc.'s other regulated subsidiaries have requested adjustments similar to the "Usage Normalization Adjustment" in rate applications filed with other state regulatory commissions. If this fact cannot be confirmed, identify each regulated subsidiary that has requested a similar adjustment and the status or disposition of the adjustment.

3) If there are cases as described above, provide the case number and, if applicable, the final order in each instance where this has occurred.

d. For Item 7.f., provide evidence that the purchased water price is a fixed cost

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

with no variable component. If the costs related to purchased water are fixed because of a contractual agreement, provide the agreement(s) and explain the benefits to the customers of WSKY in having a contractual agreement where WSKY does not exceed the minimum billings for each month

Response:

a. The Company has previously provided its own internal data in response to Staff DR 2.07, which agrees to the annual average “conservation” effect of .72% per year per customer. In the same response the Company had also provided an update to its consumption analysis to include its most recent consumption data, which shows the consumption decline trend continues. And as with any trend, it will continue until it is no longer a trend.

Per the study which the Company cited in its response to Staff DR 2.07c, which is now attached as “Staff DR 3.03 - North American Residential Water Usage Trends Since 1992” and was sponsored by both “The Water Research Foundation (“WRF”) and the U.S. Environmental Protection Agency (“EPA”), “The Magnitude of the decline is consistent across North American utilities and is confirmed by more detailed data provided by the study’s partner utilities,” (p. xxvii). One of the utilities central to the study cited and provided by the Company, was the Louisville Water Company (“LWC”), which serves customers in the Louisville, Kentucky area. The study found that the impact of low-flow appliances in the LWC service territory translate “into an annual average “conservation” effect of .56% per household per year, compounded.” (p. 61). And that “Louisville is still

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

between the innovation and maturity period for the Ultra-Low-Flush toilets and efficient clothes washers.” (p.61).. The findings presented by WRF and EPA, which are fully supported by the Company’s own internal data, suggest the trend in consumption decline will continue into the years that the rates in this proceeding will be in effect.

- b. Please refer to the file provided in response to Staff DR 2.7 labeled “WSKY Consumption Analysis”. In Column L, lines 45 through 52 on the tab labeled “Consumption Change”, the usage normalization adjustment is calculated by customer class. This percentage is then multiplied by the appropriate consumption by customer class in “*Staff DR 1.3 – w p s Revenue*”. Below is summary of the usage normalization adjustment percentages shown on Column L, lines 45 through 52 on the tab labeled “Consumption Change”:

Response to Staff DR 2.3.b

Customer Class	Usage Normalization Adjustment (%)
345CWCOM	0.43%
345CWGOV	-2.06%
345CWMLT	-0.26%
345CWRES	-2.33%
345MWCOM	-1.37%
345MWGOV	-0.29%
345MWIND	5.50%
345MWRES	-1.58%
Total	-0.72%

- c.

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

1. Attached is an industry study, "Staff DR 3.03 - North American Residential Water Usage Trends Since 1992" which was sponsored by both "The Water Research Foundation ("WRF") and the U.S. Environmental Protection Agency ("EPA").

2. The Company confirms that none of Utilities, Inc.'s other regulated subsidiaries have requested adjustments similar to the "Usage Normalization Adjustment" in rate applications filed with other state regulatory commissions.

3. N/A

d. Attached is Fern Lake Company's tariff, "Staff DR 3.03 - Fern Lake Company Tariff 12-12-2013", which holds its customer (WSKY) responsible for paying a minimum of \$10,267.00 per month. This tariff was approved and put into effect by the Kentucky Public Service Commission. WSKY does not consider this to be a variable expense because WSKY does not exceed the minimum gallon threshold of 41,667,000 per month.

Witness: Justin Kersey

Staff DR 3.3

North American Residential Water Trends Since 1992

North America Residential Water Usage Trends Since 1992

 Subject Area: Management and Customer Relations



North America Residential Water Usage Trends Since 1992



About the Water Research Foundation

The Water Research Foundation (formerly Awwa Research Foundation or AwwaRF) is a member-supported, international, 501(c)3 nonprofit organization that sponsors research to enable water utilities, public health agencies, and other professionals to provide safe and affordable drinking water to consumers.

The Foundation's mission is to advance the science of water to improve the quality of life. To achieve this mission, the Foundation sponsors studies on all aspects of drinking water, including resources, treatment, distribution, and health effects. Funding for research is provided primarily by subscription payments from close to 1,000 water utilities, consulting firms, and manufacturers in North America and abroad. Additional funding comes from collaborative partnerships with other national and international organizations and the U.S. federal government, allowing for resources to be leveraged, expertise to be shared, and broad-based knowledge to be developed and disseminated.

From its headquarters in Denver, Colorado, the Foundation's staff directs and supports the efforts of more than 800 volunteers who serve on the board of trustees and various committees. These volunteers represent many facets of the water industry, and contribute their expertise to select and monitor research studies that benefit the entire drinking water community.

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For its subscribers, the Foundation serves as a cooperative program in which water suppliers unite to pool their resources. By applying Foundation research findings, these water suppliers can save substantial costs and stay on the leading edge of drinking water science and technology. Since its inception, the Foundation has supplied the water community with more than \$460 million in applied research value.

More information about the Foundation and how to become a subscriber is available on the Web at www.WaterResearchFoundation.org.

North America Residential Water Usage Trends Since 1992

Prepared by:

Paul Coomes, Tom Rockaway, Josh Rivard, and Barry Kornstein

Center for Infrastructure Research, Civil and Environmental Engineering
University of Louisville, Louisville, Kentucky 40292

Jointly sponsored by:

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6666 West Quincy Avenue, Denver, CO 80235-3098

and

U.S. Environmental Protection Agency

Washington, DC 20460

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FOREWORD

The Water Research Foundation (Foundation) is a nonprofit corporation that is dedicated to the implementation of a research effort to help utilities respond to regulatory requirements and traditional high-priority concerns of the industry. The research agenda is developed through a process of consultation with subscribers and drinking water professionals. Under the umbrella of a Strategic Research Plan, the Research Advisory Council prioritizes the suggested projects based upon current and future needs, applicability, and past work; the recommendations are forwarded to the Board of Trustees for final selection. The Foundation also sponsors research projects through the unsolicited proposal process; the Collaborative Research, Research Applications, and Tailored Collaboration programs; and various joint research efforts with organizations such as the U.S. Environmental Protection Agency, the U.S. Bureau of Reclamation, and the Association of California Water Agencies.

This publication is a result of one of these sponsored studies, and it is hoped that its findings will be applied in communities throughout the world. The following report serves not only as a means of communicating the results of the water industry's centralized research program but also as a tool to enlist the further support of the nonmember utilities and individuals. Projects are managed closely from their inception to the final report by the Foundation's staff and large cadre of volunteers who willingly contribute their time and expertise. The Foundation serves a planning and management function and awards contracts to other institutions such as water utilities, universities, and engineering firms. The funding for this research effort comes primarily from the Subscription Program, through which water utilities subscribe to the research program and make an annual payment proportionate to the volume of water they deliver and consultants and manufacturers subscribe based on their annual billings. The program offers a cost-effective and fair method for funding research in the public interest.

A broad spectrum of water supply issues is addressed by the Foundation's research agenda: resources, treatment and operations, distribution and storage, water quality and analysis, toxicology, economics, and management. The ultimate purpose of the coordinated effort is to assist water suppliers to provide the highest possible quality of water economically and reliably. The true benefits are realized when the results are implemented at the utility level. The Foundation's trustees are pleased to offer this publication as a contribution toward that end.

David E. Rager
Chair, Board of Trustees
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Executive Director
Water Research Foundation

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- Conway Corporation

- Erwin Utilities
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- Georgetown Municipal Water & Sewer
- Glasgow Water Company
- Glendale Public Service Department
- Golden Heart Utilities
- Grand Junction Public Works Department
- Greater Vancouver Water District
- Greenwood Utilities
- Jackson Utility Division
- Jurupa Community Services District
- Knoxville Utilities Board
- Loudoun County Sanitation Authority
- Marietta Water Department
- Menomonie Water Department
- Mesa Consolidated Water District
- Midwest City Water Department
- Muscatine Power & Water
- Newport News Waterworks
- North Park Public Water District
- Orlando Utilities Commission
- Owensboro Municipal Utilities
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EXECUTIVE SUMMARY

OBJECTIVES

This study investigates trends in household water usage in North America during the past 30 years and draws preliminary conclusions on the magnitude and causes of declining usage per residential customer. The study focused on: 1) understanding residential water-usage behavior patterns and trends; 2) assessing the impact of those patterns on water utility operations; and 3) providing data that can be correlated with future trends for planning purposes.

BACKGROUND

Many water utilities across the United States and elsewhere are experiencing declining water sales among households. While “water conservation” is normally seen as positive, this gradual erosion in residential consumption may force utilities to raise rates to provide sufficient revenues for expanding service and replacing old water mains and equipment (Beecher et al. 1994). Without a clear understanding of the changing water-use patterns, it is difficult to develop appropriate pricing structures that will both recoup costs and provide resources for the future. Figure ES.1 shows the declining water-usage trends of the partners participating in this study.

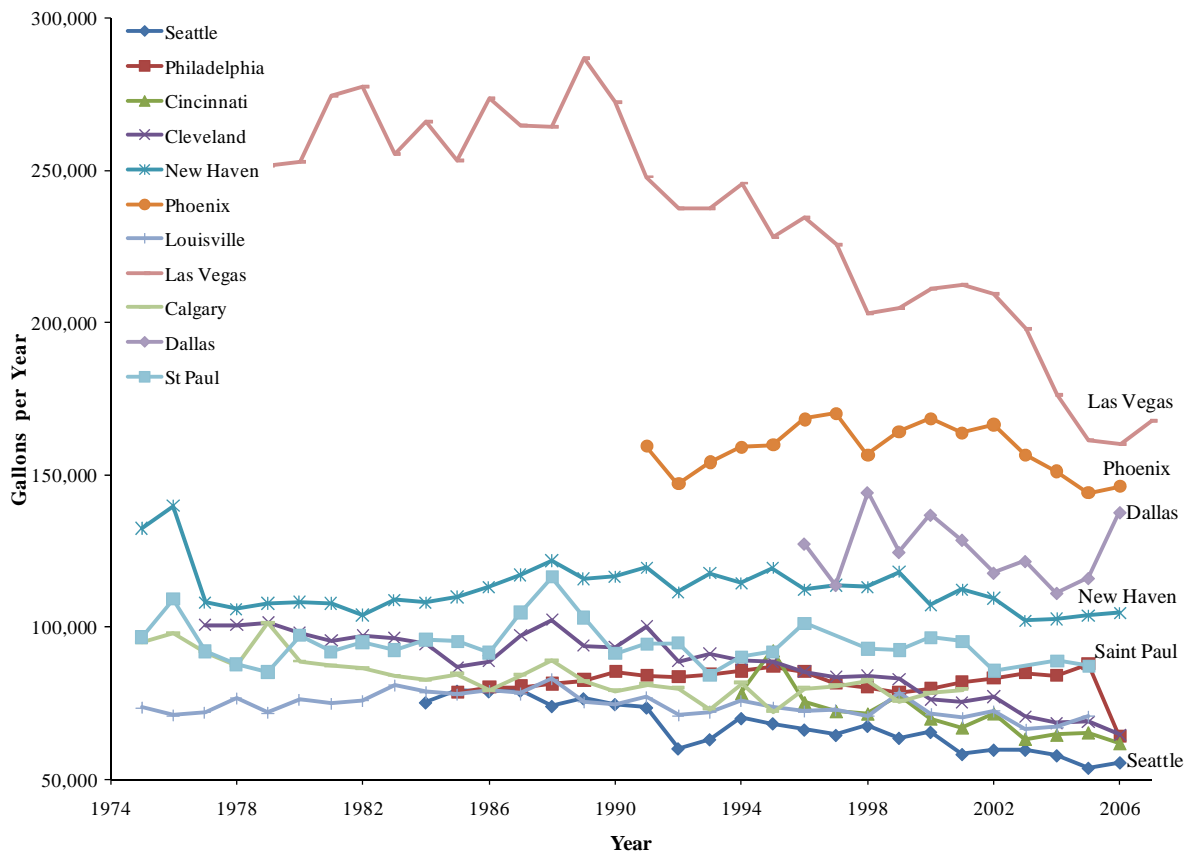


Figure ES.1. Partners’ average annual water usage per residential customer, in gallons

The decline in residential water usage per customer has occurred as the number of residents and households continues to grow and as household incomes continue to rise. A variety of theories have been advanced to explain the declining usage, including: wetter weather; changes in household size and type; water-conserving fixtures and appliances; customer classification anomalies; and price increases. However, to date, no definitive statement has been made as to the validity of these theories or the amount each contributes to residential water-usage decline.

For utilities to both encourage conservation and have sufficient financial reserves for maintenance and growth, it is necessary to better understand how water-use patterns have changed over the last 30 years, what factors are driving usage, and how these factors might impact utilities in the future.

APPROACH

This research was designed in three parts, beginning with a macro view of the issue and developing into a micro view, with assessments of household water consumption behavior at the national, regional, and local levels.

The national trends component of the study analyzed the historic databases of 43 representative utilities. The analysis estimated the statistical relationships among six variables over time: utility size, water source, ownership type, precipitation zone, temperature zone, and drought index. These variables were held statistically neutral to achieve a more accurate picture of usage trends. This national trends study was compared to trends documented by two Public Service Commissions, whose data showed similar patterns.

The regional component of the study examined the specific experiences reported by 11 utilities who agreed to participate and provide background information and data. Their data also was used to estimate the statistical relationships among the same six variables addressed in the national study. In addition, researchers factored in specific conditions and aspects particular to each utility, such as conservation initiatives, billing practices, and government oversight. Full case studies are provided in the appendix of this report.

The local component of the study assessed the *independent* impacts of many water-conservation fixtures and household demographics. Electronic data loggers were installed on 65 statistically representative homes in the service area of the Louisville Water Company. The devices captured flow signatures and accurately differentiated among various types of water use. The participating households were surveyed to determine their socioeconomic characteristics, as well as their inventory of indoor and outdoor water-using fixtures. The data were combined with demographic and economic factors to provide an assessment of water-use patterns at the local level. There have been a limited number of local water usage studies that have employed the detailed information employed in this study.

Finally, researchers analyzed the national, regional, and local components of the study to draw conclusions.

DATA LIMITATION ISSUES

Water-usage data maintained by utilities generally reflect information captured for billing and metering reasons, not for demographic and economic analysis. Moreover, utilities are not consistent in the way they classify and record water usage. Some do not distinguish water usage

by customer type, and a few do not even meter usage. There is no industry standard for classifying residential customers, with some utilities counting as residential only single-family residences and others counting units in large apartment complexes. And few utilities are able to provide time series data longer than five to ten years. These issues limit researchers' ability to make precise and reliable statements about usage trends and the causes of changing water usage.

Water utilities generate a wealth of customer data that could be much more effectively exploited for decision making if better classification protocols and storage standards were adopted by the industry. Customer usage data can be matched with publicly available property tax assessment data to draw inferences about the effects of housing vintage, size, and value on consumption. Geographic information system tools can be used to merge and match data on individual households, as well as to reveal patterns in water usage across space. Computing speed and capacity continue to rise while computing costs continue to fall. Analytical software to probe databases has become both more powerful and easier to use. Indeed, it appears that research into the causes of water use per customer will be quite fruitful as the problems related to data consistency are solved.

RESULTS

The national and regional components of the study found that residential water usage per customer has decreased more than 380 gallons annually over the last three decades. While the estimated decline amounted to only 0.44 percent of average annual usage, the long-term consequences of the reduced water usage are important. Compounded over 30 years, the decline amounts to 13.2 percent and implies that a household will use 11,673 gallons less water in the 2008 billing year than an identical household did in 1978.

The regional component of the study examined utility specific factors impacting residential water consumption and quantified the historic residential water consumption trends for the eleven partners. While overall water usage per household had declined, there did not appear to be a significant change in total water produced by utilities. This is attributed to the rising numbers of residential accounts. Additionally, water quality, distribution, and emergency response capabilities of the water utilities have remained relatively unchanged.

Other more qualitative components of the regional case studies provide insights into the various issues and questions, including the effects of changing residential water consumption on a utility's system design, revenue, conservation practices, and water quality. The case studies considered geography, population, age of the city, and how the utilities handled a multitude of issues and competing factors. The case study reports, found in the appendix, allow utilities to access information from utilities facing experiences similar to their own. Utility managers may extrapolate from the data the most salient points to assist them with making more informed planning decisions

A local study of statistically representative households was conducted to investigate the determinants of declining residential water usage. Similar to the national and regional findings, the Louisville Water Company (LWC) also has seen a reduction in water usage per residential customer. A statistical model was developed to investigate the independent impacts of weather, demographics, economics, indoor appliances, and outdoor water features. The model was estimated in stages, progressively adding groups of variables, to reveal any sensitivity to coefficient estimates as the model broadened. The resulting coefficient estimates were combined with historical billing data in an attempt to explain declining water usage over time ([Table ES.1](#)).

To determine daily household usage a representative subset of the households agreed to participate in a data-logging study, in which recorders were affixed to water meters outside the homes for two weeks. This data revealed actual water usage for each home by type of appliance, timing, length, and frequency of usage. The study also revealed for the first time the penetration of low-flow appliances in the LWC service territory. Seventeen percent of surveyed households used low-flow toilets, 79 percent low-flow showers, and 12 percent low-flow clothes washers. These findings provide a useful snapshot, allowing some rough estimates of the cumulative impact of water-conserving appliances on residential customer usage over the past two decades.

The model showed that household demographic and economic factors contribute to changing water usage trends, with fewer people per household causing falling water usage while rising incomes result in rising water usage due to larger and more expensive homes. Specifically the model estimated that each adult contributes about 37 gallons while each teenager contributed 32 gallons to daily household water demand. Another interesting interaction revealed in the model focuses on teenagers and the household size and age. The interaction estimates that teenagers in newer homes use less water than teenagers in older homes, but those in larger homes use more water than in smaller homes.

The model estimates that homes built after 1994 use about 13 gallons per day less than those built before 1994, after controlling for size and value. The introduction of low-flow toilets, showers, and clothes washers have had a significant impact on residential water usage, accounting for a decline of about 16 percent in average daily usage over approximately the last 20 years.

Combining the results of the household survey and the data-logging study helps to explain falling water usage per household over the recent past. After adjusting for weather, daily LWC household water usage fell 10 percent, from 208 to 187 gallons per day, between 1990 and 2007, a decline of 21 gallons a day. An increase in household income is believed to have boosted water usage by seven gallons per day. However, this increase is offset by changes in demographics factors, which is believed to have reduced water usage by five gallons per day. The rest of the estimated net decline, about nineteen gallons per day, is believed to be due to the increased penetration of low-flow appliances in the Louisville market.

LOCAL STUDY COMPARISONS

While there have been several studies that physically measured the type and volume of water usage in individual homes (1984 HUD study, 1999 Water Research Foundation Residential End Use Water Study (REUWS), 2006 Denver Water studies), there has been limited end use studies conducted in the water rich regions of the United States. The end use study completed for Louisville Water Company households allowed for comparison of a water rich utility to previously conducted end use studies. The study provides practitioners from water rich regions with a baseline for single-family customers' daily usage.

The sample of Louisville households used consistently less water than the REUWS baseline sample, albeit a decade later. However, the average number of people per household was 15 percent lower in the Louisville study than in the REUWS, 2.7 compared to 2.25 for Louisville. The fact that both the household usage and the number of people per household are lower in the Louisville study than in the REUWS study suggests that the number of people in the household is one of the contributing factors to the lower usage.

The Louisville sample household usage was on par when compared to indoor household usage from the 2006 Denver Water study. Interestingly, Denver Water has a proactive water conservation program while Louisville implements a passive conservation program, but both shared a similar overall daily household usage (156 gpd Denver Water and 152 gpd for LWC).

When comparing the Louisville and Denver households daily indoor water usage to the baselines established with the REWUS households, both communities consistently used less water than in the REUWS Study. This is attributed to two contributing factors: the lower number of people per household in both studies (2.5 for Denver Water and 2.24 for Louisville) and higher penetration rates of low flush toilets (20% for Denver and 17% for Louisville).

[Figure ES.2](#) compares the average daily indoor household usage of Louisville residents and the participants in the REUWS and Denver Water studies.

Table ES.1
OLS models of average daily water usage for the Louisville Water Company
 OLS Models of Average Daily Water Usage, 293 Randomly Selected Residential Customers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
BIN 1	Average monthly precipitation (inches)	-0.0380 (0.565)	-0.0740 (0.510)	-0.0729 (0.500)	-0.0882 (0.495)	-0.0718 (0.475)	-0.0962 (0.459)	-0.109 (0.458)
	Average monthly temperature (°F)	0.767** (0.308)	0.750*** (0.278)	0.745*** (0.273)	0.737*** (0.270)	0.739*** (0.259)	0.728*** (0.251)	0.724*** (0.250)
	Palmer Modified Drought Index (-4 to+4)	-2.554*** (0.496)	-2.589*** (0.448)	-2.613*** (0.439)	-2.612*** (0.435)	-2.594*** (0.417)	-2.599*** (0.403)	-2.599*** (0.402)
BIN 2	Total number of residents	35.55*** (0.742)						
	Adults			45.72*** (1.124)	43.29*** (1.234)	38.09*** (1.207)	36.37*** (1.205)	36.61*** (1.210)
	Teens			48.83*** (2.097)	46.90*** (2.081)	34.48*** (2.062)	32.24*** (2.039)	1230*** (188.1)
	Grade-schoolers			28.60*** (1.827)	24.13*** (1.843)	20.69*** (1.777)	18.69*** (1.737)	17.24*** (1.745)
	Pre-schoolers			5.919 (3.975)	7.629* (3.957)	13.22*** (3.822)	10.62*** (3.727)	6.715* (3.745)
	Babies, toddlers			2.107 (2.774)	-3.168 (2.775)	-4.436* (2.686)	1.113 (2.620)	1.894 (2.614)
	Number of workers				5.404*** (1.093)	6.694*** (1.055)	6.521*** (1.035)	6.508*** (1.034)
BIN 3	Education level (Education indices)			7.883*** (0.666)	3.400*** (0.660)	3.593*** (0.654)	3.655*** (0.653)	
	Year home built (Year)				0.226*** (0.0515)	0.176*** (0.0529)	0.325*** (0.0562)	
	Built after 1994 (no, yes)				-11.66*** (3.492)	-10.42*** (3.503)	-13.19*** (3.548)	
	Assessed value of home (\$)				0.181*** (0.0324)	0.105*** (0.0338)	0.146*** (0.0375)	
	Square footage of home (sq ft)				20.34*** (2.871)	23.96*** (2.822)	17.05*** (3.212)	
	BIN 4	Bathtubs with showers (number)					-2.891 (1.806)	-4.618** (1.833)
Bathtubs only, no shower (number)						11.91*** (2.140)	14.36*** (2.406)	
Showers only, no bathtub (number)						-7.622*** (1.948)	-8.209*** (1.948)	
Top loading washing machine (no, yes)						9.635** (4.126)	9.315** (4.127)	
Front loading washing machine (no, yes)						-0.814 (4.339)	2.203 (4.361)	
Water outdoor landscaping (no, yes)						9.684*** (1.666)	9.090*** (1.675)	
BIN 5	Swimming pool (no, yes)					65.19*** (2.982)	64.80*** (2.974)	
	Outdoor spa (no, yes))					13.62*** (3.828)	14.89*** (3.837)	
BIN 6	Interaction: Teens x Year Home Built						-0.620*** (0.0968)	
	Interaction: Teens x Home Square Footage						22.07*** (5.664)	
	Interaction: Teens x Assessed Value of Home						-0.121* (0.0664)	
	Constant	109.5*** (13.03)	29.22** (11.88)	13.09 (11.71)	-11.35 (11.78)	-484.5*** (100.8)	-394.1*** (103.4)	-679.2*** (109.5)
	Observations	10146	10146	10146	10146	10146	10146	10146
	R-squared	0.036	0.214	0.246	0.260	0.318	0.364	0.368

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

All models include monthly dummy variables, not shown.

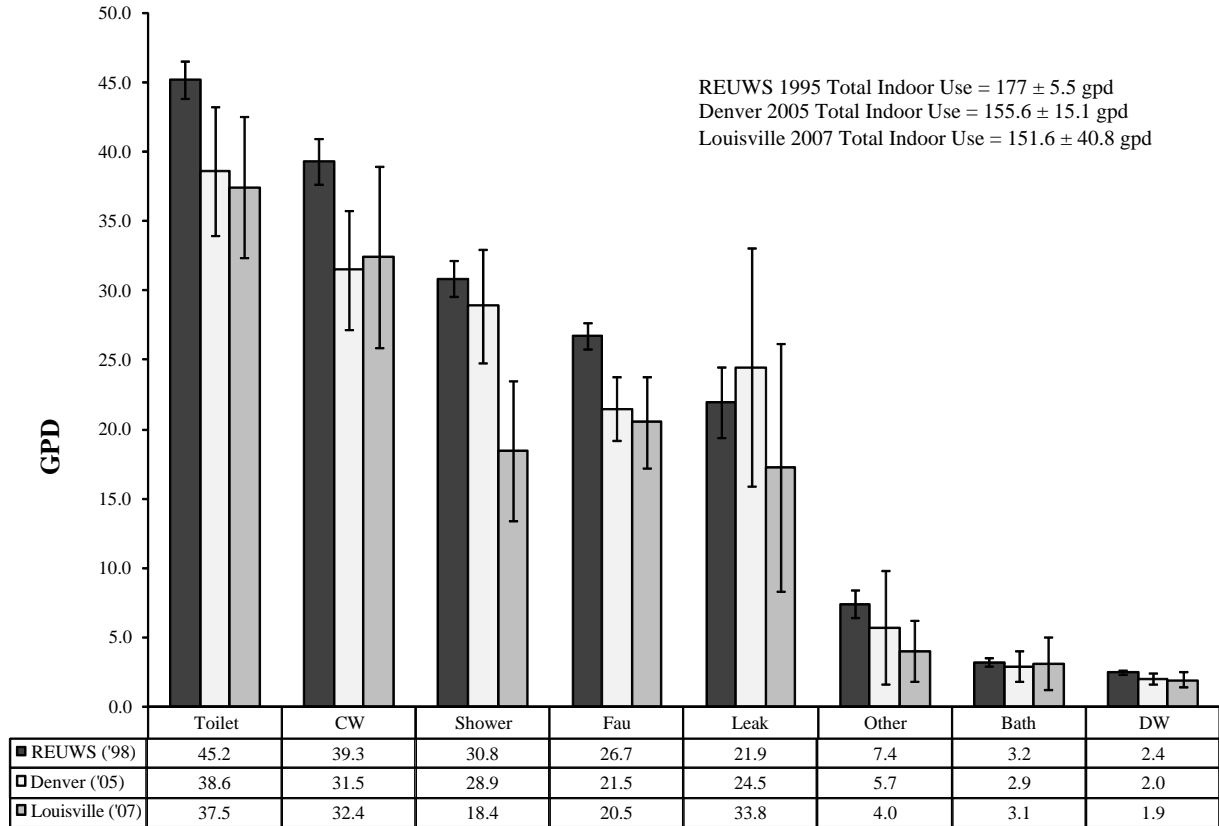


Figure ES.2. Comparing average household indoor use of Louisville Water Company, Denver Water and Mayer’s “Residential End Uses of Water” study (REUWS)

SUMMARY AND CONCLUSIONS

This research documents a pervasive trend toward lower water usage per household. The magnitude of the decline is consistent across North American utilities and is confirmed by more detailed data provided by the study’s 11 partner utilities, although there were annual variations due to regional factors. The results of the study’s statistical models identify the magnitude of both positive and negative forces affecting water usage. The decline in number of residents per household is clearly an important factor in falling water consumption per residential customer. However, the negative consequences of smaller households appears to be more than offset by the positive consequences of higher household incomes. Higher incomes have led to larger homes, with more water-using appliances, and more landscape irrigation. Thus, the net decline in water usage per household appears to be due to the steady penetration of low-flow appliances over the past 20 years. The end-use study found that low-flow appliances and changing household demographics accounted for a 16 percent reduction in average household water use in 2007, as compared to 1990.

The steady decline in usage per household has important financial-planning consequences for water utility companies, as infrastructure is spread over more housing units using less water than before. The data compiled in this research are intended to assist utilities in developing realistic management plans that take into account the primary causes of declining residential water usage. The data provide a tool for projecting residential water usage in light of utility-

specific trends. Utilities serving communities with growth in single-occupant households are likely to see erosion in revenues per household. Additionally, new federal regulations governing water-conserving appliances and fixtures further indicate that residential water usage will continue to decline as newer homes make up a larger component of the housing stock. Utilities may find it useful to track persons per household in addition to number of households as they plan infrastructure and set rates.

Although the rate of decline may slow, there is no indication that national household-size trends will reverse. Also, new and existing federal regulations will prompt further penetration of water-conserving appliances.

RECOMMENDATIONS

Standardized Classification and Data Management Practices

Researchers faced difficulties in obtaining accurate data for measuring usage and identifying patterns. Water-usage data obtained from utilities reflect information captured for billing and metering reasons, not for analysis. It is challenging to assemble consistent household water-usage data over time across utilities because of the lack of universal metering practices, a standardized method for classifying customers and maintaining databases. Thus, it is recommended that the American Water Works Association (AWWA) along with the Water Research Foundation (Foundation) and the International Water Association (IWA) work on establishing standardized customer classifications and database maintenance practices.

Local Level Studies

Though the water usage model developed for this study provides valuable insight into the detailed structure of residential water usage, these models are still weak in explaining the huge variations in residential water usage among the participating utilities. Other studies have also found only weak relationships between water usage and traditional socio-economic and physical factors (Balling 2008), (Domene and Sauri 2005), (Schleich 2007). Further research is needed on other demographic and housing variables to obtain a more comprehensive understanding of the determinants of residential water usage, especially in areas periodically affected by water stress.

For a utility to adequately understand the local factors influencing residential usage, it needs to conduct an in-depth demographic study of existing customers. Combining this information with daily household usage data gathered via data logging allows utilities to gain valuable insight into the impacts of local factors on residential water usage. The model employed in this study provides a reasonable methodology for utilities to adopt and extend.

KEY FINDINGS

The following are some the key findings from the study:

- A pervasive decline in household water consumption has been determined at the national and regional levels.
 - An estimated decrease of more than 380 gallons annually over the last three decades in household water usage.

- While the decline amounted to only 0.44 percent of average annual residential usage, when compounded over 30 years, the decline amounts to 13.2 percent and implies that a household will use 11,673 gallons less water in the 2008 billing year than an identical customer did in 1978.
- Within the Louisville Water Company household sample, daily usage is highly influenced by weather, household demographics, housing stock age, size, and value, and by the characteristics of water using appliances inside and outside the home.
 - After adjusting for weather, daily household water usage fell 10 percent from 208 to 187 gallons per day between 1990 and 2007, a decline of 21 gallons a day for Louisville households.
 - The study found that low-flow appliances and changing household demographics accounted for a 16 percent reduction in average household water use from 1990 to 2007.
 - This net decline in water usage per household appears to be due to the steady penetration of low-flow appliances over the past 20 years.

CHAPTER 1

INTRODUCTION

BACKGROUND

Many water utilities across North America and elsewhere are experiencing declining water sales among their households. Company officials attribute the decline in usage to several possible factors, including wetter weather, new water-conserving appliances, changing demographics, and classification anomalies. While “water conservation” is normally seen as positive, this gradual erosion in residential consumption may force many utilities to raise rates to provide sufficient revenues for expanding service and replacing old water mains and equipment. Without a clear understanding of the changing water-use patterns, it is difficult to develop appropriate pricing structures that will both recoup costs and provide resources for the future. [Figure 1.1](#) shows the declining water-usage trends of the partners participating in this study.

Water utilities are finding it increasingly difficult to accurately manage their finances in the face of changing water-use patterns. Old rules of thumb, such as assuming households consume 200 to 300 gallons per day per person, are no longer sufficient. Household water-use predictions must account for competing factors. The average number of people per housing unit and the penetration of water-conserving appliances in the housing market lead to less water use per household. However, rising incomes and an increased demand for landscape watering precipitate increases in total water use. Further complicating the issue, water usage by customer type varies and is dependent upon geographic location, climate, industrial composition, housing stock, pricing, and local conservation policies.

Generating sufficient revenues for utility maintenance and growth is not a matter of simply increasing water rates to offset declining usage per household. In the short run, water-rate increases lead to more revenues for the utility. However, the situation is becoming more complicated as water rates continue to rise and are linked to rising wastewater rates. Economic theory predicts that there will be a price point at which customers change behavior by reducing outdoor watering, installing water-conserving appliances, and changing habits. Moreover, governing boards may limit the ability of water utilities to significantly modify their rates and pricing structures.

For utilities to both encourage conservation and have sufficient financial reserves for maintenance and growth, it is necessary to understand how water-use patterns have changed over the last 30 years, what factors are impacting usage, and how these individual factors impact patterns on the national, regional, and local levels.

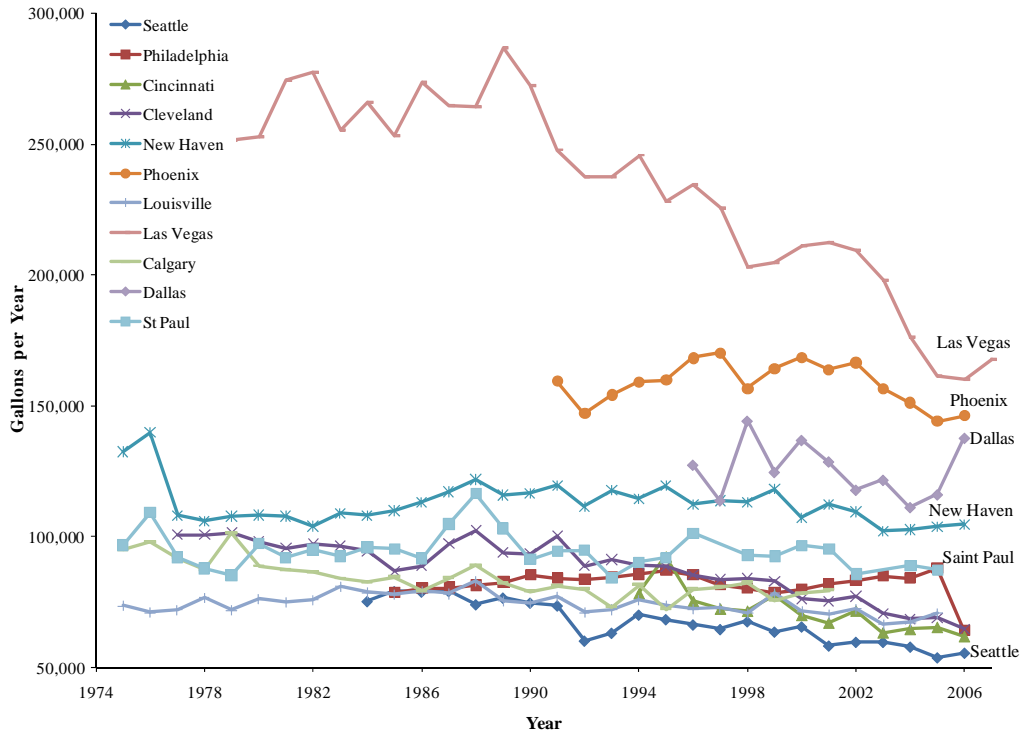
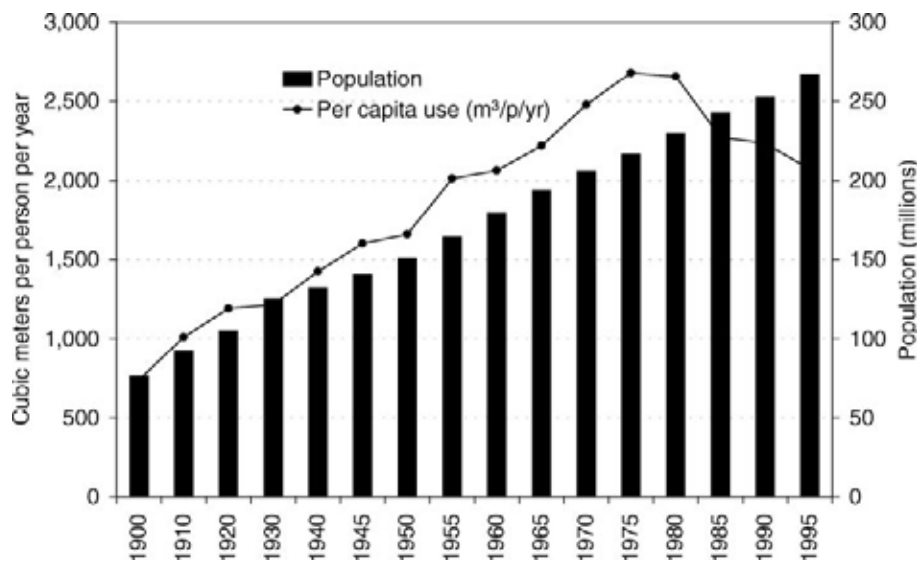


Figure 1.1. Study partners’ average annual water usage per residential customer, in gallons

Previous Research Approaches

A literature review found only generalized national studies of water usage that focused primarily on per capita aggregate estimated consumption (consumption/ population). However, it is interesting to note that these studies of aggregate water abstractions did find overall per capita water withdrawals (fresh and saline) have leveled or dropped since 1980, Figure 1.2 (OECD 2005 and Gleick 2003).



Source: Gleick 2003.

Figure 1.2. Overall water withdrawals per capita 1900-1995

The best data on water-use patterns are found at the regional and local levels. In the United States, these studies have focused primarily on the arid Southwest where water is a constrained resource. Researchers and utility managers in this area have been keenly interested in how to best manage their water resource in the face of rapid growth in the number of households. This phenomenon has led to hundreds of scholarly and practitioner papers on topics such as investigating demand and/or price elasticity's effect on reducing water usage, the spread and impact of low-flow appliances, and the effect of bans on certain water practices (Arbues et al. 2003). Regional studies of residential water use in the majority of these states found falling or flat levels of per capita consumption since 1985 (Diaz and Anderson 1995; Solley 1997; Brookshire, et al. 2002; Morris and Devitt 1997). Based on metered residential customer accounts, Albuquerque, New Mexico's per-capita residential water demand has been falling significantly since 1995 (Gutzler and Nims 2005).

Although some types of data for water-poor areas are plentiful, there have been few attempts to study the water-usage patterns in relatively water-rich areas. One exception is Cleveland, where the utility studied trends in water consumption and found a drop of 17 percent in overall consumption in the past five years (Speranza, Sundheimer, and Zone 2007). Another study in the South found that consumption also has fallen, prompting a decline in water revenues and subsequent budget shortfalls (Williams 2001).

Studies conducted in areas outside of the United States have focused on residential classification and provide more relevant patterns. Randolph, Holloway, Pullen and Troy (2007) conducted a significant study in Sydney, Australia, using actual household-level data to understand gross per capita water-demand trends, the impact of socioeconomic variables, and water-supply forecasts over time. Arbues and Villanúa (2006) used cross-sectional, time-series data to investigate the consumer demand of water in Zaragoza, Spain, using actual data collected at the household level in a micro-series study. These kinds of empirical studies provide more reliable information about water-demand trends and the effects of pricing, climate, income, household size, and household appliances.

Most of the U.S. studies analyze water demand through estimated models based on seasonal variations and a host of other variables, without breaking out usable data based on customer classification. Those studies that do disaggregate data do so only for a specific locality and do not focus on historical and current water-use trends on larger scales. Some studies investigate the variance of quantity demand across households using individual data (Domene and Sauri 2005; Hanke and de Mare 1982; Danielson 1979; Martinez-Espineira 2002), but these do not investigate long-term demand trends. This paucity of research is most likely due to a lack of accurate, consistent data collection across states and regions and the costliness of collecting disaggregated residential water end-use information. Only recently have regional and localized studies, such as the 1999 Water Research Foundation "Residential End Uses of Water" study, started using actual data, rather than estimated or simulated data, in order to understand trends in water consumption at the end-user level (Mayer et al. 1999).

Previous studies provide only a general view of total usage trends and do not account for various types of usage and customers. This study employed more refined measurements of residential usage. It eliminated the commercial and industrial data based on historic billing records and isolated residential customers (households) for study. The goal was to compare like households in different geographic regions in order to arrive at precise measurements of changing residential water-use patterns.

Commonly Cited Causes of Changes in Water-Use Patterns

While many researchers have looked into the shifting water-use patterns, there still is no clear understanding of the underlying causes. Commonly cited causes include the following factors:

Wet weather - Weather has been shown to affect seasonal water demand, although results vary geographically and it is difficult to generalize. Nieswiadomy and Molina (1989) investigated the interaction of weather and price elasticities, calculating the difference between potential evapotranspiration for Bermuda grass and actual rainfall. Evapotranspiration was shown to significantly alter the own-price elasticity of water. Others have used precipitation during the growing season, minutes of sunshine, and annual rainfall (Arbues et al. 2003).

As measured by Miaou (1990), weather was shown to be hysteretic, dynamic, and state-dependent. (Hysteretic implies the temperature response is seasonally dependent; dynamic implies that the rainfall's effect diminishes over time; and state-dependent implies water use is dependent on current conditions or that during a rain event more water-use reduction can be expected.) Additionally, weather is thought to have non-linear effects on water usage. According to Miaou's statistical analysis, the number of rainy days is a better predictor of water usage than total rainfall.

Household size and type - The literature points to a positive relationship between residential water demand and number of members of a household. Moreover, researchers have suggested that a change in number of people in a household causes a less-than-proportional change in water demanded (Howe and Linaweaver 1967). There are economies of scale in water usage for a household, particularly for dishwashing and laundry, so water use is not expected to be a linear function of the number of persons per household.

Other research suggests that the age composition of a household is a statistically significant determinant of water usage (Lyman 1992; Hanke and de Mare 1982). Lyman finds, "Another child would increase water usage in a home by about 2.5 times that of another teenager and 1.4 times that of another adult."

Water conservation - To comply with the U.S. Energy Policy Act of 1992, major plumbing manufacturers nationwide began producing low-volume toilets, urinals, showerheads, and faucets. Over the past decade, these products have slowly become more common as new homes are constructed or older homes renovated. As the prevalence of these low-flow water fixtures increases, their effect on overall household water usage is anticipated to be significant. In one study the introduction of low-flow water technology reduced water consumption per household by 36 percent and in another by 46 percent (Mayer et al. 2003, Mayer et al. 2004). However, on a communitywide basis, some of these observed water-usage reductions may be offset by longer showers, above-average rates of toilet-flushing, luxury appliances (Jacuzzi or water features), and second rinses in the clothes washer.

Misclassification of residential customers within utility database - The water industry does not have a standardized methodology for customer billing classifications. However, academic research and industry officials acknowledge that most water companies group customers according to similar "use characteristics," such as amount of water consumed, topographic constraints, and service type, rather than actual property use (Dziegielewski et al. 2002). This approach to customer classification poses a problem in trying to understand water-consumption patterns based on economic and demographic models. For example, economists analyze water demand and supply in the same way they model other goods and services. But it is difficult to apply these models when some water companies treat all single-family homes,

multi-family units, and mobile homes as residential, while other companies categorize apartment complexes, mobile homes, or condominiums as commercial (Dziegielewski et al. 2000).

Price increases - Economic theory predicts that residential consumption will be inelastic with respect to price, as there are no substitutes for water in its basic household uses. Moreover, water prices have historically been low enough that water bills typically account for a small percentage of a household's monthly income. Thus, consumers often are not even aware when water prices change, and it is unlikely that consumption would change in the face of small price variations.

However, the literature indicates that price elasticity of water is not zero. Beyond drinking and sanitation, much household water usage cannot be deemed a necessity. Water use for lawn and garden irrigation, car washing, water features, and swimming pools would likely decline if water prices rose appreciably. Leaky plumbing that might be ignored under low prices would be repaired under high prices (Arbues et al. 2003).

PROJECT SYNOPSIS

This study was intended to investigate trends in household water usage in North America during the past 30 years, and where feasible to determine the causes of changes in consumption. The study focused on: 1) understanding residential water-usage behavior patterns and trends; 2) assessing the impact of those patterns on water utility operations; and 3) providing data that can be correlated with future trends for planning purposes.

Project Design

The purpose of this research was to quantify residential water-use changes across North America observed during the past 30 years. The study was designed in three parts, beginning with a macro view of the issue and developing into a micro view. To appropriately account for geographic and demographic variations, it was necessary to assess national, regional, and local consumption patterns.

The national trends component of the study analyzed the historic databases of 43 representative utilities. The analysis estimated the statistical relationships among six variables over time: utility size, water source, ownership type, precipitation zone, temperature zone, and drought index. These variables were held statistically neutral to achieve a more accurate picture of usage trends. This national trends study was compared to trends documented by two Public Service Commissions, whose data showed similar patterns.

The regional component of the study examined the specific experiences reported by 11 utilities who agreed to participate and provide background information and data. This data also estimated the statistical relationships among the same six variables addressed in the national study. Researchers factored in specific conditions and aspects particular to each utility, such as conservation initiatives, billing practices, and government oversight. In addition, researchers attempted to incorporate census tract demographic information into the analysis, to examine the influence of demographics on daily household usage. However, the matching of the census track and service area boundaries proved to be too big of an endeavor for the scope of this project. Full case studies are provided in Appendix B of this report.

The local component of the study assessed the *independent* impacts of water-conservation fixtures and household demographics. To avoid the natural tendency of self-reporting subjects to underestimate their water usage, electronic data loggers were installed on 65 statistically representative homes in the service area of the Louisville Water Company. The device captured flow signatures and accurately differentiated among various types of water use. For example, it could identify that the water being used was by a person washing his hands rather than by someone taking a shower. The participating households were surveyed to determine their socioeconomic characteristics, as well as their inventory of indoor and outdoor water-using fixtures. The data were combined with demographic and economic factors to provide an assessment of water use patterns *within* a community.

Finally, researchers analyzed the national, regional, and local components of the study to draw conclusions.

Method of Analysis

The study employed two statistical models. The first was a simple ordinary least squares (OLS) regression, with annual usage per residential customer as the dependent variable. OLS is one of the simpler methods of linear regression. The goal of OLS is to closely "fit" a function with the data. It does so by minimizing the sum of squared errors from the data.

To capture time-invariant place characteristics, such as demographic, topographic, and climatic differences, a fixed effects statistical model was used. This is a common regression technique for panel data, where there are observations over time on a constant set of locations. The technique essentially estimates how much the regression intercept moves up or down across locations and is a way of capturing time-invariant place characteristics. It provides users with the ability to control for all stable characteristics of the individuals in the study, thereby eliminating potentially large sources of bias. The fixed effects estimator is obtained by OLS on the deviations from the means of each unit or time period.

Measurement Issues

Water-usage data maintained by utilities reflect information captured for billing and metering reasons, not for analysis. The researchers have faced difficulties in obtaining accurate data for measuring usage and identifying patterns. It is challenging to assemble consistent household water-usage data over time across utilities because of the following issues:

- Some utilities do not meter water usage. Rather, they simply charge each customer a flat fee per month and supply all the water the customer chooses to use. The random sample of 200 utilities included at least three (South Lake Tahoe, Calif.; Lake George, Utah; and Juneau, Ark.) that did not meter usage.
- Some utilities do not distinguish water usage by customer type. They meter water usage on a monthly, bimonthly, or quarterly basis, but they do not differentiate between residential, commercial, industrial, public use, or other types of customers. Hence, historical data on usage per customer reflects patterns across many customer types. The random survey included two utilities (Bristol, Conn., and Sonora, Calif.) that did not distinguish by customer type.

- In databases of water customers, there is no standard way to treat single-family and multi-family residential units. Some utilities break these out carefully; others treat both simply as part of a residential total; still others measure housing units inconsistently. This is an important issue because apartment complexes may contain dozens or hundreds of housing units, use individual or group metering, and may have very different demographic characteristics than single-family homes. In some cases, a user is deemed a residential customer if the building's water-supply pipe is below a certain size and a commercial customer if the pipe is larger. In this case, a large apartment complex will have many households but be treated as a single commercial customer.
- Few utilities maintain time-series data longer than 5 to 10 years. Longer time series are necessary for analysis of usage patterns since weather conditions can cause major year-to-year fluctuations in usage per customer. Moreover, a utility's service territory can frequently change as exurban developments are annexed, wholesale customers are converted to retail customers, or as utilities are merged or acquired.
- The water industry does not have a standardized methodology for customer billing classification. Academic researchers and industry officials acknowledge that most water companies group customers according to similar "use characteristics" -- such as amount of water consumed, topographic constraints, and service type -- rather than actual property use (Dziegielewski et al. 2002). This approach poses a problem when analyzing water consumption patterns based on economic and demographic models.

This study was specifically designed to overcome these measurement issues and arrive at an accurate depiction of household water-use patterns and trends.

CHAPTER 2 NATIONAL TRENDS

OVERVIEW

A key component of this study was investigating national trends in water-use patterns and learning whether declining usage was pervasive geographically or limited to certain regions or types of utilities. A random sample of water utilities was compiled and stratified by size, climate, ownership type, and customer base. The utilities were requested to participate in a survey and provide historical usage data. The primary objective of the survey was to determine the consumption trends per residential customer throughout North America. The study's statistical model of residential water usage estimated the relationship among six variables: utility size, water source, ownership type, precipitation zone, temperature zone, and a drought index. A fixed effects version of the model then captured time-invariant place characteristics, such as demographic, topographic, and climatic differences.

As part of the national-level analysis, the Public Service Commission's (PSCs) from all 50 states were contacted and asked to participate in the study. Only two states, Kentucky and Wisconsin, provided usable data. Both data sets displayed declining usage trends similar to the national survey results.

The national trend survey found that there has been a pervasive decline in water usage per residential customer across the United States and Canada. However, this aggregate data did not reveal which factors caused the decline.

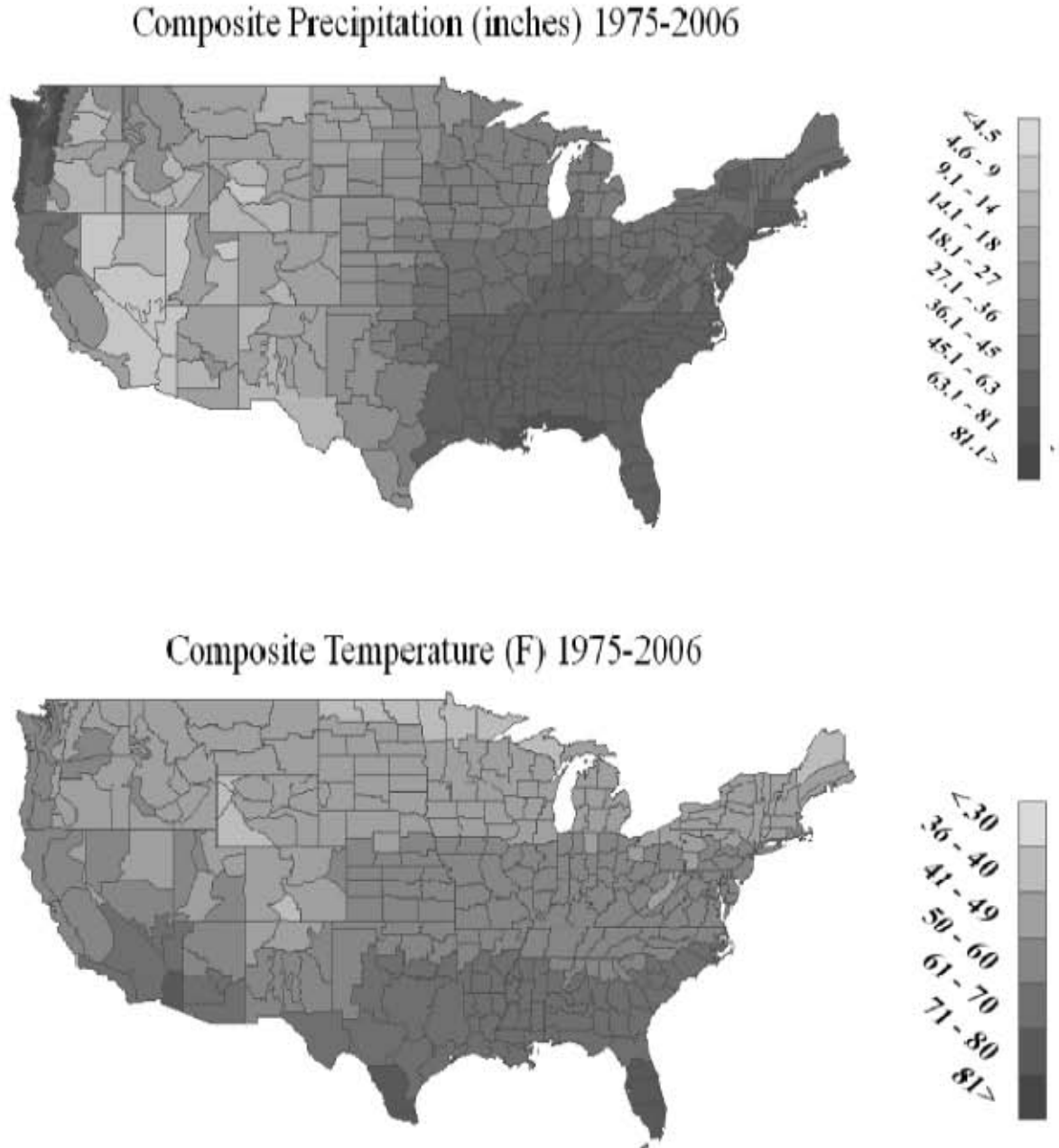
Sample Design

The national trends analysis began with a comprehensive database of water utilities comprised of all respondents to the AWWA 1999 Financial/Revenue Survey (AWWA 2001). The database contained information for approximately 4,000 water utilities. However, there were many inconsistent entries and blank fields in the database. Usable data for 602 utilities were available on location, ownership type (private or public), source of water (ground, surface, or purchased), population served, and total water sales by customer type. The utilities were further coded by climate characteristics. These published characteristics provide a basis for sampling, so that the results from the utilities surveyed are representative of the industry as a whole.

The water industry is characterized by a relatively small number of utilities serving very large markets and hundreds of utilities serving smaller communities. Therefore, it is not surprising that over half the utilities in the database served a population of fewer than 50,000. The majority reported that they used lakes, rivers, and wells for their primary water sources. Eighty-eight purchased water from other utilities. Only 57 of the utilities reported being privately owned. The majority were owned by municipalities, water associations, and other public entities. There were 240 utilities that reported no sales to industrial customers, while 30 reported that industrial customers accounted for 40 percent or more of total water sales. The study employed interval measurements for population size and percentage of water sales to industrial customers and used these along with binary variables for water source and ownership type.

Each of the 602 utilities was assigned a precipitation and temperature zone, as set by the National Oceanic & Atmospheric Administration (NOAA) and Environment Canada. The zone

numbers correspond to increasing precipitation and temperature, so these were ideal for inclusion in the regression analysis. Maps showing the composite precipitation and temperature for the continental United States are shown in Figure 2.1, and the climate distribution for the utilities in this study is summarized in Figures 2.2 and 2.3.



Sources: National Oceanic & Atmospheric Administration, Physical Sciences Division, Climate Analysis Branch; and Environment Canada, Canadian Climate Normals, 1971-2000.

Figure 2.1. Composite precipitation and temperature maps for 1975-2006

Sampling and Survey Synopsis

The six measures of utility and climate characteristics were used to stratify the 602 utilities that had provided sufficient data for the AWWA 1999 Financial/Revenue Survey (AWWA 2001). A random sample of 200 of these utilities was drawn for inclusion in the survey. The AWWA 1999 Financial/Revenue Survey database served as a starting point to determine the best contact person at each utility, which was augmented with Internet research. All 200 utilities were contacted for participation with a letter explaining the purpose of the research and the sponsorship by Water Research Foundation (Foundation). The initial contact requested the utility to supply 25 years of data as well as the number of accounts and annual consumption, primarily for residential customers and secondarily for commercial and industrial customers where applicable.

The follow-up consisted of phone calls and emails sent to non-responding utilities. A personalized letter was sent to the top utility manager identified. Many utilities did not respond. Others responded but reported they did not keep such data. Most utilities could provide only a subset of the 25 years of usage data requested. After three months of follow-up contacts, the survey phase ended. The final study group was comprised of 43 water utilities located throughout the United States and Canada.

Although limited in size, the responding utility group was statistically representative of the full sample. The 43 responding utilities were located across 22 states, two Canadian provinces, seven precipitation zones, and five temperature zones. They represented all utility types and size classes. Collectively, they provided 605 annual observations on water usage per single-family residential customer, [Figure 2.2](#) provided an overview of historic residential usage trend for the national level participants. [Table 2.1](#) summarizes the distribution of those observations across the six variables. [Figures 2.3](#) and [2.4](#) summarize the climate characteristics of the sample utilities.

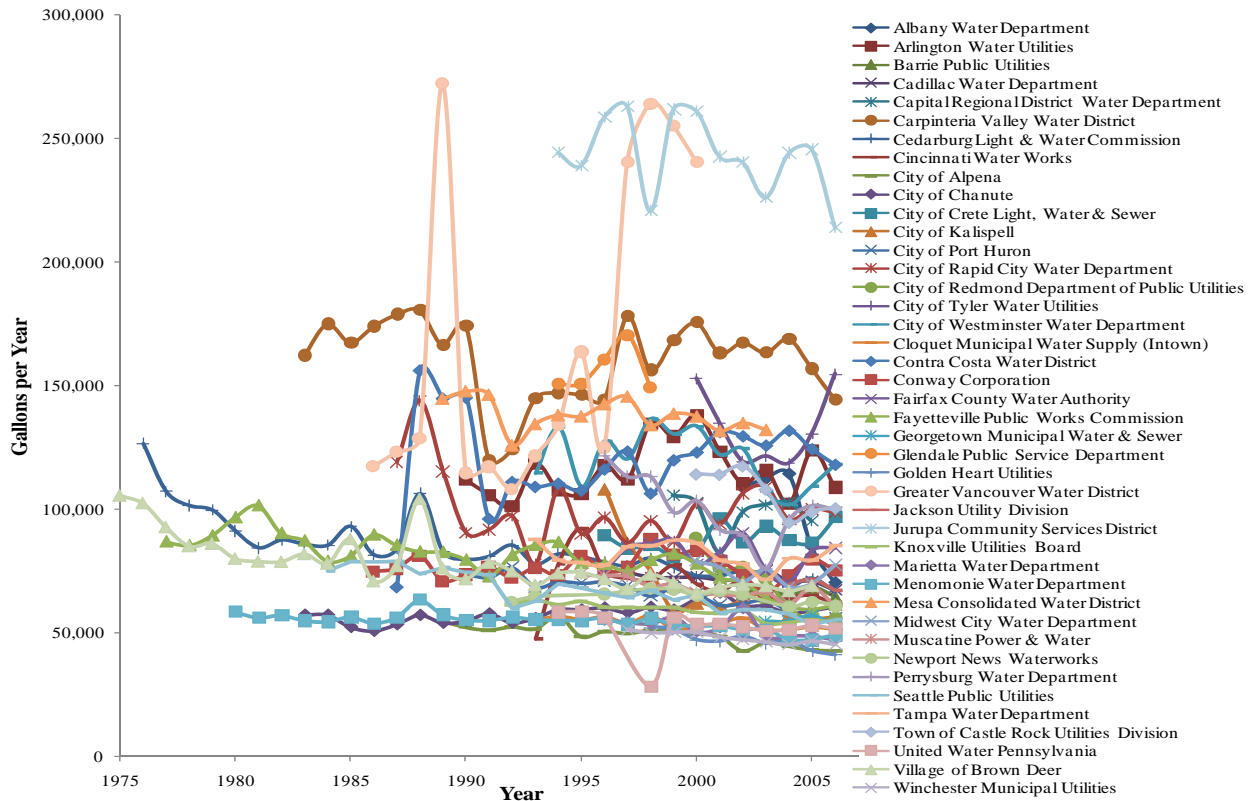


Figure 2.2. National historic residential usage trend

Table 2.1
Distribution by survey respondents

Category	Annual Temperature Zone (Fahrenheit)	Annual Precipitation Zone (inches)	Ownership	Primary Water Source	Population Size	Industrial Percentage of Total Water Sales
0			41	17	26	12
1		1	2	20	5	7
2	1	0		6	7	10
3	0	16			5	6
4	5	17				2
5	2	8				6
6	11	1				
7	11	0				
8	12					
9	0					
10	0					
11	1					
12	0					

See Figure 3.3 See Figure 3.4 0= Public; 1=Private 0= <50,000; 0=-%,
 1=50,001- 1=less than 5%,
 2=150,001- 2=5% to 20%,
 3=500,000; 3=20% to 40%,
 4=500,001> 4=greater than 40%,
 5=Unknown

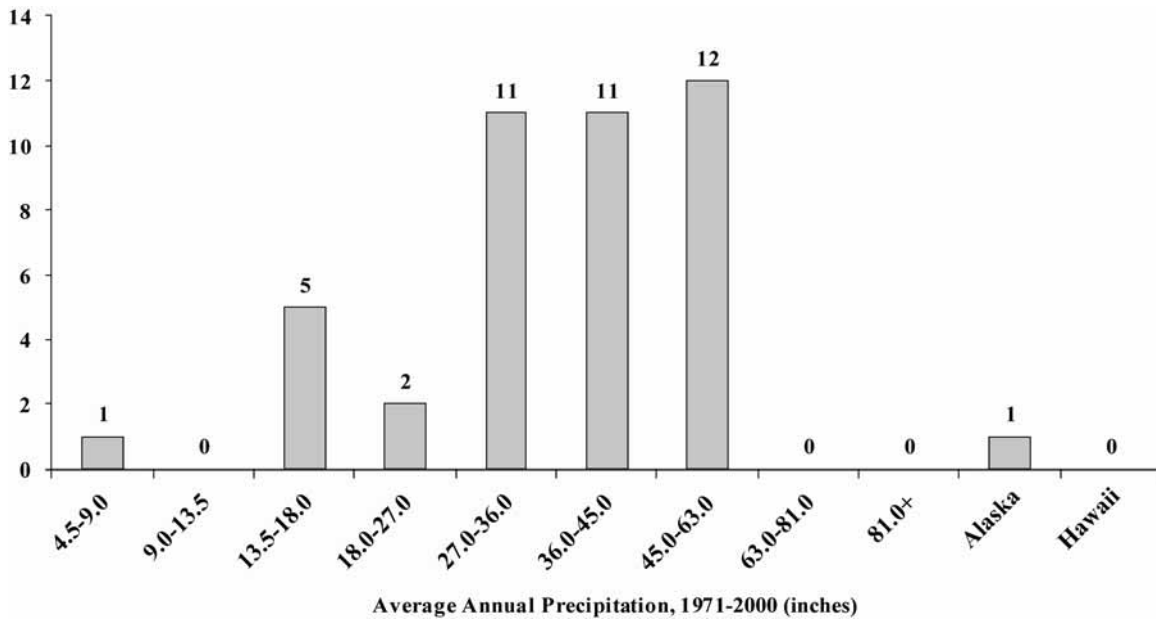


Figure 2.3. Survey respondents by precipitation zone

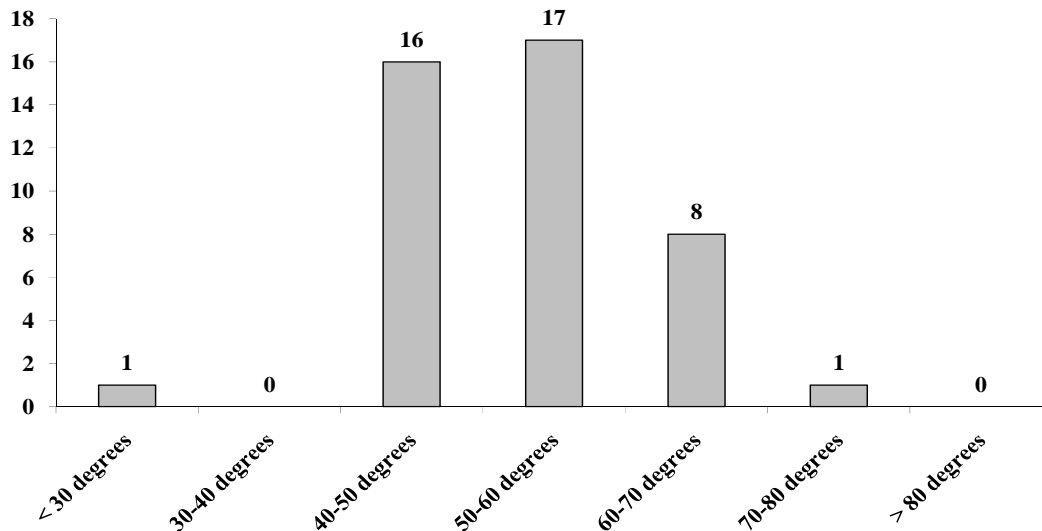


Figure 2.4. Average annual temperature (Fahrenheit) by survey respondents, 1971-2000

ANALYSIS RESULTS

The primary objective of the national trends study was to determine if water usage per residential customer was declining and, if so, to what extent the trend varied throughout North America. A simple Ordinary Least Squares (OLS) statistical model of residential water usage

was estimated to find the relationship between water usage per customer and time, while controlling for six variables: utility size, water source, ownership type, precipitation zone, temperature zone, and a drought index. In practice, the number of residential customer accounts provided by each utility was used as the measurement of “utility size.” These variables were the ones used to stratify the sample, to ensure valid representation of the industry. Fixed-effects models were also estimated to provide an alternative method of measuring place-specific, time-invariant, characteristics of the utilities. The regression results are shown in [Table 2.2](#).

To examine the effects of abnormal weather on residential water usage, the analysis included the average value of the Palmer Drought Severity Index (PDSI) for each year for each region. This meteorological drought index is used to assess the severity of dry or wet periods. According to NOAA, the drought index “generally ranges from -6 to +6, with negative values denoting dry spells and positive values indicating wet spells. PDSI values 0 to -.5 = normal; -0.5 to -1.0 = incipient drought; -1.0 to -2.0 = mild drought; -2.0 to -3.0 = moderate drought; -3.0 to -4.0 = severe drought; and greater than - 4.0 = extreme drought” (NOAA 2007). Similar adjectives are attached to positive values that indicate wet periods. Researchers also allowed for a possible nonlinear effect of drought on water usage by adding a quadratic term (drought index squared) to the regression.

Climate Variables

The first statistical model used a simple ordinary least squares (OLS) regression, with annual usage per residential customer as the dependent variable, shown in [Table 2.2](#), in the column titled OLS. Climate variables were found to be statistically important in explaining water usage. Annual residential water usage fell as precipitation rose through the nine zones, which ranged from almost no rain to those with more than 80 inches per year. This pattern presumably reflects the fact that lawn and landscape irrigation are not needed in the rainiest climates, and conversely, outdoor watering is heavily used in arid climates. Since the precipitation measure is an interval, and not a continuous measure, it is difficult to infer the impact that an inch of rain has on customer water usage. However, a valid, if rough, interpretation is that a household located in a zone receiving 36 to 45 inches of precipitation per year would use an average of 15,233 more gallons than the same household in a zone receiving 45 to 63 inches per year. This difference amounts to 17.4 percent of the average customer’s usage in the sample.

Average temperatures were strongly correlated with water usage. The interval scale showed that a customer living in a zone with average temperatures between 60 and 70 degrees would use on average 14,514 more gallons than one living in a zone where temperatures averaged between 50 and 60 degrees. This difference amounts to 16.6 percent of the average customer’s usage in the sample. Clearly, customers in hot, arid climates purchase significantly more water than those in cooler and wetter climates.

The drought index is geographically more specific to each utility than the broad regional precipitation and temperature zones, and it varies by year. Like the other two climate measures, the estimated coefficient was statistically significant. For example, a movement in the average annual drought index from a value of -1 (mild drought) to a value of -2 (moderate drought) increased average water usage by 646 gallons per year.

Number of Accounts and Type of Ownership Variables

OLS also estimated a negative and statistically significant relationship between the number of residential accounts and residential water usage per customer. A growth of 1,000 customers was associated with a decline in usage of 88.7 gallons per customer annually. This pattern could plausibly be interpreted as a measure of urbanization. Large cities tend to have higher population density, higher land prices, smaller yards, and fewer people per household. Similarly, the measure of industrial water sales as a share of all water sales was negatively associated with residential usage per customer. This pattern may reflect the higher likelihood of major industrial users in very large cities. Smaller water districts often are dominated by suburban households and light retail. The type of utility ownership did not have a statistically significant effect on water usage per customer.

Time Trend Variable

The variable of most interest in this study was the time trend, denoted “Time” in [Table 2.2](#). With the OLS model, the estimated coefficient of -200.5 indicated that, on average, single-family households have been reducing their water usage by 200.5 gallons per year over the past three decades. However, the large standard error indicated that the coefficient estimate was imprecise and further study was needed.

Table 2.2
Regression results
Annual Water Usage per Single-Family Residential Customer
43 Water Utilities, Mixed Time Periods, 1975 to 2006

Variable	(1) OLS	(2) Panel, with Fixed Effects	
Precipitation zone	-15,233*** (1,003)		
Temperature zone	14,514*** (1,516)		
Ownership type	3,821 (6,869)		
Water source	7,923*** (3,018)		
Number of customers	-0.0887*** (0.0296)	-0.0155 (0.122)	
Percent industrial	-4,908*** (1,121)		
Drought index	-2,256*** (695.8)	-738.8** (333.5)	-741.3** (332.6)
Drought index squared	536.7** (237.3)	123.0 (113.4)	122.7 (113.3)
Time	-200.5 (176.4)	-380.8*** (111.0)	-388.5*** (93.15)
Constant	138,650*** (9,068)	96,758*** (3,547)	96,411*** (2,269)
Observations	605	605	605
R-squared	0.484	0.038	0.038

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

A fixed effects version of the model provided further information, and the results are shown in the last column of [Table 2.2](#). Fixed effects is a common regression technique for panel data such as these, where there are observations over time on a constant set of locations. The technique essentially estimates how much the regression intercept moves up or down across locations and is a way to capture time-invariant place characteristics, such as demographic, topographic, and climatic differences. The number of customers and drought variables were retained, since they take on different values over time. Estimating a fixed effects model supplants the categorical variables used in the OLS model. The estimate of the coefficient on the number of customers was not statistically different from zero, so with the fixed effects model that variable was dropped.

This more precise analysis found an even more pervasive decline in water usage per residential customer across the United States and Canada than the OLS model. While the estimated annual decline in water usage amounted to only 0.44 percent of average annual usage over the sample, the long-term consequences are important. The customers of utilities participating in the study averaged 88,433 gallons usage annually. Compounded over 30 years, the decline would amount to 13.2 percent, or 389 gallons per year per customer. For the utilities surveyed, this represents an average decline of 11,673 gallons in total customer water usage over the past 30 years.

EVIDENCE FROM PUBLIC SERVICE COMMISSIONS

Prior to undertaking the national survey, an exhaustive search was conducted for consumption data from state regulator commissions, using the National Association of Regulatory Utility Commissioners (NARUC) database. Each state's water utility regulatory commission was asked for aggregated annual consumption and account data for water utilities under their control. Five states provided information: Indiana, Kentucky, Maine, North Carolina, and Wisconsin. Out of these, Kentucky and Wisconsin provided the detailed information required in the study. Both of these data sets were obtained via download through the states' respective Public Service Commission (PSC) Web sites.

The databases for water utilities regulated by the Kentucky and Wisconsin PSCs provided a rich data set on trends in water usage per customer. While conditions in Kentucky and Wisconsin are not necessarily representative of the rest of the United States, it was interesting to see how the trends compared to those found in the national survey. The states shared similar usage patterns per residential account.

Kentucky Public Service Commission

The Kentucky PSC does not regulate municipal water utilities, so the data set included only information on private utility companies and cooperatives. The data set comprised of about 50 such utilities for the period of 1993 to 2005 and included number of customers, usage, and revenues. The customer and usage data are summarized in the [Figure 2.5](#). There was a steady increase in the number of customer accounts, with growth of about 8,000 customers per year. This growth was accompanied by a clear negative trend in water usage per customer of an estimated 570 gallons per year, with fluctuations around the trend due to weather. This negative trend was much greater than what researchers found in the sample of 43 water utilities from around the United States. However, the timeframe for the PSC data was much more recent,

which suggests that the detected national decline in water usage per customer may be primarily due to changes in behavior during the last half of the sample time period. In 2005, fifty Kentucky PSC utilities served an average of 5,541 customers in 2005. This average included Kentucky-American Water Company, which serves Lexington, KY a community of 268,000.

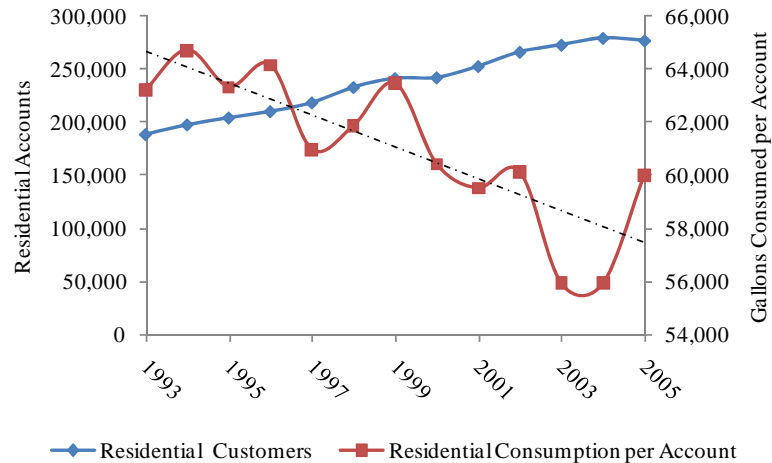


Figure 2.5. Kentucky regulated utilities' account and consumption trends

Wisconsin Public Service Commission

The Wisconsin PSC regulates nearly 600 water utilities, including municipal utilities, and thus has more observations than Kentucky. Most other states only regulate private (investor-owned) water utilities and do not regulate their municipal systems. Wisconsin utilities are classified by size: 68 Class A-B utilities defined as having more than 4,000 customers; 156 Class C utilities defined as having between 1,000 and 4,000 customers; and 346 Class D utilities with fewer than 1,000 customers (Schmidt 2004).

The databases collected consisted of data from 1982 to 2005. The data prior to 1989 was inconsistent, therefore analysis focused on the data were available for the period between 1990 and 2005. In 2005, five hundred and seventy-nine Wisconsin PSC regulated utilities served an average 1,995 customers each. As with Kentucky utilities, there was a steady growth in customers and a clear negative trend in usage per customer. On average, water usage per customer declined 720 gallons each year over the 16 years analyzed. [Figure 2.6](#) summarizes the trends for customer accounts and usage per customer.

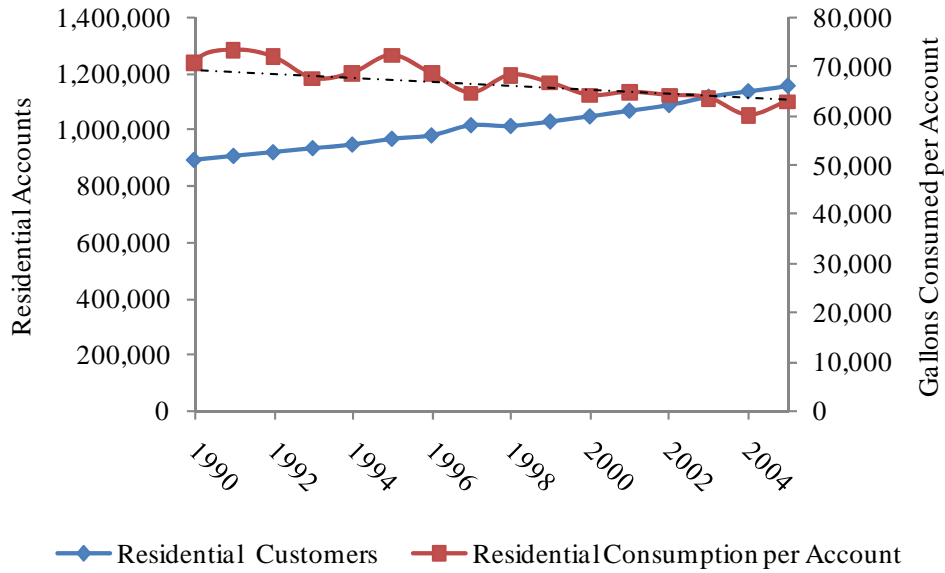


Figure 2.6. Wisconsin regulated utilities account and consumption trends

Conclusion

The analysis of the Kentucky and Wisconsin PSC data served as a qualitative analysis of easily obtained residential water usage data. Overall, the utilities regulated by the Wisconsin and Kentucky public service commission (PSC) exhibited similar declining residential usage trends.

CHAPTER 3 REGIONAL CHARACTERISTICS

OVERVIEW

The purpose of the regional component of the study was to identify and characterize regional variations in water-usage trends. The study developed partnerships with 11 utilities located in nine U.S. states and one Canadian province (Table 3.1). Study participants provided aggregate annual residential usage data and participated in in-depth interview sessions. Nearly all reported a long-term decline in water usage per customer, but the analysis showed considerable variation among utilities.

Residential Consumption Analysis

The study requested 30 years of annual account and usage data from each partner. The period of data provided varied according to the utility's specific record-keeping protocol and the availability of historical records. All partners were asked to provide a minimum of 11 years of residential usage data. Water-usage data for other customer classes (multi-family, commercial, and industrial) were requested but were not available in all cases.

To gain further insight into the relationship among the utility's specific characteristics, customer behaviors, and historic consumption trends, each partner participated in an in-depth interview. Interviews explored the partner's customer-classification practices, rate structures, conservation practices, and water-quality issues. A case study report on each partner includes interview results and general data analysis. Full case studies are found in Appendix B.

Table 3.1
Partner Utilities

Utility	Location
The City of Calgary	Calgary, Alberta Canada
Greater Cincinnati Water Works	Cincinnati, Ohio
Cleveland Division of Water	Cleveland, Ohio
Dallas Public Utilities	Dallas, Texas
Las Vegas Valley Water District	Las Vegas, Nevada
Louisville Water Company	Louisville, Kentucky
South Central Connecticut Regional Water Authority	New Haven, Connecticut
Philadelphia Water Department	Philadelphia, Pennsylvania
Phoenix Water Service Department	Phoenix, Arizona
Saint Paul Regional Water Services	Saint Paul, Minnesota
Seattle Public Works	Seattle, Washington

Climate Variables and Utility Population Demographics

As in the national analysis, the regional analysis utilized climate measurements – the annual precipitation and temperature averages for each partner obtained from the NOAA and Environment Canada. The partner utilities were located across seven precipitation zones and four temperature zones.

The partners were publicly-owned utilities serving urban communities with populations greater than 350,000. All partners except for New Haven and Saint Paul Regional Water Services (Saint Paul) served populations greater than 500,000. All the partners utilized surface water (lakes and rivers) as their primary water source. One utility, Las Vegas Valley Water District, relied on a purchased water supply. Many of the partner utilities indicated they used ground water to supplement their primary water supply or to meet peak demands. [Table 3.2](#) summarizes the distribution of those observations across the five utility and climate characteristics.

Table 3.2
Overview of partner utility characteristics

Partner Utilities	Average Annual Temperature Range (°F)	Annual Precipitation Range (in)	Ownership	Primary Water Source	Population Served
The City of Calgary	30-40	9-13.5	Public	Surface	900,000
Greater Cincinnati Water Works	50-60	36-45	Public	Surface	813,000
Cleveland Division of Water	40-50	36-45	Public	Surface	1,500,000
Dallas Public Utilities	60-70	27-36	Public	Surface	1,314,800
Las Vegas Valley Water District	50-60	4.5-9.0	Public	Purchased Surface	1,100,000
Louisville Water Company	50-60	45-63	Public	Surface	836,926
South Central Connecticut Regional Water Authority	40-50	45-63	Public	Surface	389,300
Philadelphia Water Department	50-60	36-45	Public	Surface	1,600,000
Phoenix Water Service Department	60-70	18-27	Public	Surface	1,533,582
Saint Paul Regional Water Services	40-50	27-36	Public	Surface	414,735
Seattle Public Works	50-60	63-81	Public	Surface	629,000

ANALYSIS RESULTS

The 11 utility partners had a combined population of more than 11 million residents. To calculate average water usage, each utility's annual residential water usage was divided by the average number of residential customers (households). Several trends emerged. There was considerable variation among utilities, with the average Dallas customer using over twice as much water as the average Seattle customer. However, nearly all the utilities reported seeing a slow, long-term decline in water usage per customer.

Residential Consumption Analysis

Because the period of data provided by each utility varied, descriptive analysis focused only on the usage data provided from 1996 through 2005. The median and mean annual usages per account for all the partners were very close, 102,985 gallons to 103,614 gallons per year respectively, with a standard variation of 21,544 gallons. However, average *residential* water usage per household varied widely among the partner utilities. Las Vegas reported the highest annual water usage per customer, 203,483 gallons, and Seattle reported the lowest, 61,593 gallons. [Table 3.3](#) presents the descriptive statistical summary of the annual residential usage per account for each partner from the years 1996 through 2005. [Figure 3.1](#) provides an overview of the regional partners residential usage.

To illustrate the historic trends in residential usage per customer for each partner, a box plot was constructed, shown in [Figure 3.2](#). The box plot graphically represents the dispersion of the usage data for each partner, displaying the second quartile, 50th (median), third quartile, and mathematical outliers.

Table 3.3
Descriptive residential consumption statistics for the eleven partner utilities (1996-2005)

	Mean*	Standard Error*	Median*	Standard Deviation*	Sample Variance*	Range*	Minimum*	Maximum*	Number of Records
Calgary	79,525	939	79,742	2,301	6,792	75,815	82,606	477,151	6
Cincinnati	69,822	1,489	70,723	4,710	14,272	63,242	77,514	698,217	10
Cleveland	77,341	2,059	76,783	6,510	16,984	68,481	85,465	773,410	10
Dallas	124,147	3,312	123,048	10,474	33,126	111,070	144,197	1,241,472	10
Las Vegas	203,483	6,816	206,883	21,555	73,189	161,167	234,357	2,034,831	10
Louisville	71,236	1,046	71,076	3,307	12,067	66,364	78,431	712,363	10
New Haven	109,558	1,693	110,943	5,353	15,877	102,274	118,152	1,095,575	10
Philadelphia	82,764	919	82,505	2,906	9,448	78,431	87,879	827,637	10
Phoenix	160,844	2,712	163,860	8,576	26,032	143,988	170,020	1,608,439	10
Saint Paul	92,526	1,820	92,636	5,146	15,355	85,815	101,169	740,208	8
Seattle	61,593	1,418	61,559	4,484	13,837	53,634	67,471	615,933	10
Average Overall	102,985	2,202	103,614	6,848	21,544	91,844	113,387	984,112	9

* Denotes gallons per year

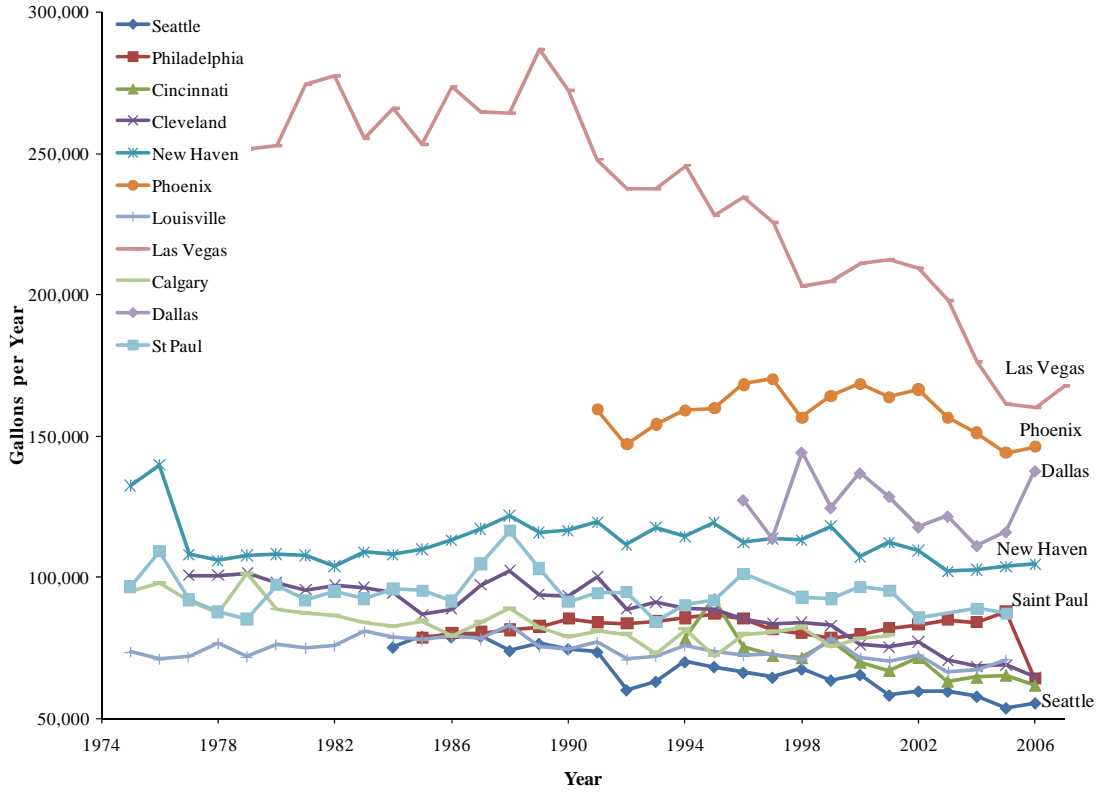


Figure 3.1. Comparing the regional partners’ average annual residential water usage, in gallons

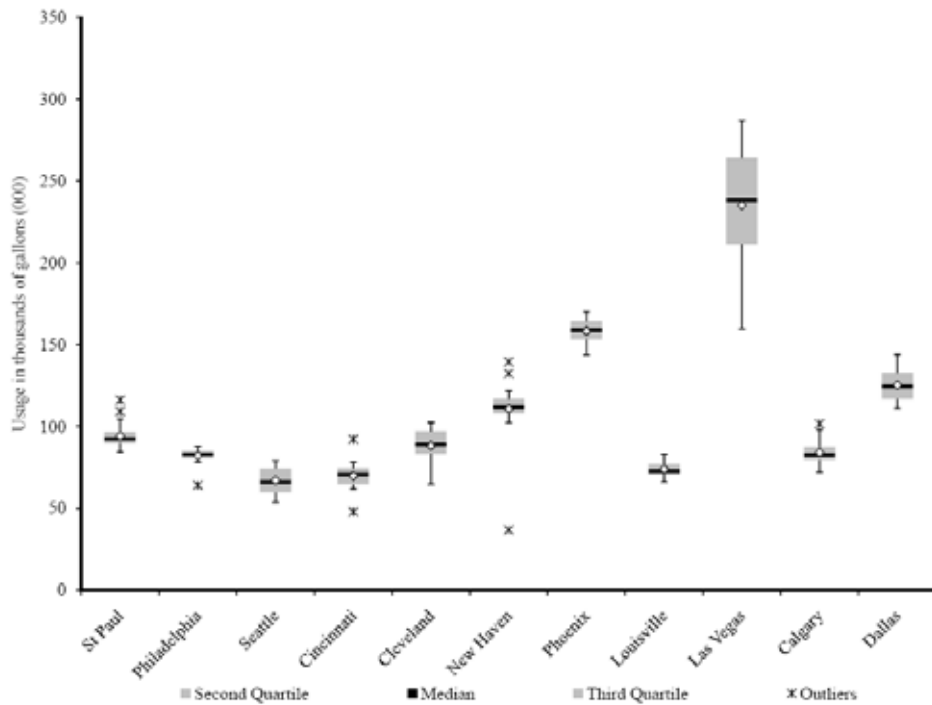


Figure 3.2. Box plot of partners’ annual consumption per account (gallons)

Regression Analysis

Simple statistical models revealed the trends in average water usage across the 11 partner utilities. As with the national sample, each of the utilities was coded by precipitation zone, temperature zone, and water source. All the partner utilities were publicly owned so there was no need for an ownership variable. The number of residential customers (households) was used as a measure of utility size. Only partial data was available on their industrial water sales, and therefore that variable could not be included in this statistical analysis. Also included were the Palmer Drought Severity Index for the region associated with each utility, as well as a quadratic term to allow for a possible nonlinearity between soil moisture and residential water usage. Drought data was not available for Canada, so data was obtained from nearby Montana.

As with the national survey, two statistical models were used, and the results are summarized in [Table 3.4](#). First, the OLS was used to run a simple regression of average water usage against climate, institutional, size, drought, and trend variables. Second, a simple fixed effects model on the panel was used, letting the change in intercept for each utility pick up the time-invariant place characteristics. All coefficients were statistically significant in both models, except for the quadratic term on the drought variable. Since there were fewer utilities in the sample, there was less variation in the categorical variables than with the stratified random sample used in the national survey model.

It is important to note that the estimated coefficients on the time variable were large and statistically significant in both specifications. The coefficient estimate was -427.9 in the OLS model and -389.9 in the fixed effects model, a difference of only 38 gallons per year. Clearly, both models show that the partner utilities have experienced similar declines in water usage per residential customer. The degree of the decline was of similar magnitude as that estimated for the national component of the study, although less than that observed by the PSCs in Kentucky and Wisconsin. The average annual customer usage for the complete partner data set was 86,012 gallons per year. Thus, the estimated annual decline for the utility partners was between 0.44 and 0.50 percent annually, or between 14 percent and 16 percent if compounded over 30 years.

Table 3.4
Regression results
Average Water Usage per Single-Family Residential Customer
 11 large urban water utilities, mixed time ranges from 1975 to 2007

Variable	(1) OLS	(2) Panel Model with Fixed Effects
Precipitation zone	-7,195*** (844.3)	
Temperature zone	16,682*** (1,818)	
Water source	-54,852*** (2,956)	
Number of customers	-0.0401*** (0.0110)	-0.0463** (0.0182)
Drought index	-2,375*** (698.7)	-1,562*** (245.9)
Drought index squared	291.3 (230.2)	101.7 (78.51)
Time	-427.9*** (151.2)	-381.9*** (61.70)
Constant	154,502*** (7,973)	103,830*** (3,371)
Observations	264	237
R-squared	0.614	0.370

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

INTERVIEW SYNOPSIS

Each study partner participated in an in-depth interview. Interviews specifically explored the utilities' customer-classification practices, rate structures, leakage management approaches, and conservation practices. The information obtained from the interviews provided insight into the impact of the changing water-usage patterns, the utility's ability to respond to emergencies, water quality, and system design. [Tables 3.5](#) and [3.6](#) provide an overview matrix of the case study results. Full case studies can be found in Appendix B.

Customer Classification

Because of the lack of a standardized customer classification policy, utilities employ various classification practices. This classification issue has implications on studies of water-usage patterns because accounts used for commercial establishments are blended with accounts used primarily for residential purposes. This also contributes to the difficulties encountered when attempting to differentiate single-family consumption from multifamily consumption.

In 2005, the University of Louisville conducted a study to examine the extent of this classification issue. The study examined a random sample of 500 commercial customers and found that the sample contained 162 premises with 1,528 house units. The majority of commercial premises identified as residences were multifamily rental or condominium

properties. The sample results imply that about 15 percent of all housing units in Jefferson County are counted under the commercial, rather than residential, customer class in the LWC's database (Coomes et al. 2005).

In this current study, customer classification practices varied from location to location in the partner utilities. Typically, partners utilized meter size to determine customer classification, therefore removing the need for strict customer classification practices. As a result, utilities grouped multifamily accounts in with commercial, residential, or industrial customers. In addition, many utilities do not charge different rates based upon customer classification, which further negates the need for a concerted effort to reevaluate customers' current classification.

Some utilities have recognized this classification issue and have begun proactively addressing the problem. This is done either when utilities are updating billing systems or when converting customers to an Automatic Meter Reading (AMR) System. Recently, the Calgary Water Service separated multi-family customers into a unique rate code because of different consumption witnessed in multi-family accounts.

System Design and Water Quality

Interviewers investigated whether, and to what extent, changing water consumption rates influenced distribution system operations, long-term infrastructure planning, and water quality. All respondents indicated changes in consumption patterns had limited affect on the quality of water provided or on their ability to respond to emergencies within their communities. These statements were validated through the Environmental Protection Agencies Safe Drinking Water Information System (SDWIS), which compiles health and monitoring violations for all water utilities. The majority of reported violations for the 11 partners were monitoring and reporting in nature.

A few utilities indicated that changes in flow conditions had influenced their water treatment and distribution systems designs. In those cases, utilities reported that it was actually a retention-time issue, not low flow, that had influenced changes in pipe and storage tank sizing and pump curve selection. Water age had been a longtime concern for these utilities, and they were exploring new ways to address the issue.

Utilities did indicate recent expansions of infrastructure to meet growth or to expand services to surrounding communities. In particular, Cincinnati, Cleveland, and Louisville have expanded water infrastructure capacity to surrounding communities in search of future revenue streams. All three of these utilities have ample water sources.

Demand-Side Conservation

The recent water shortages witnessed in Georgia, Florida, and California exemplify the need for conservation-planning measures at the local, regional, and state levels. In this study, the intricacies of the local conservation plans and regulation programs implemented by the partner utilities varied. They ranged from offering conservation educational material through the utility's Web site to distributing conserving plumbing fixtures or offering rebates to customers to purchase these fixtures. [Table 3.7](#) outlines the conservation programs implemented by each utility.

For a number of partners, water-allocation problems are more difficult than ever due to increased populations, periodic droughts, groundwater depletion, water-quality degradation, land-use concerns, and competition among water users (agriculture, recreation, urban drinking water, and industrial use). In the study, two partners were located in the arid southwestern

United States: Las Vegas and Phoenix. In these two areas, water-conservation policies and regulations have become a priority because recent population growth has been compounded with limited water supplies, increased litigation over surface and groundwater sources, and water quality issues (Billing et al. 2008).

Of special note, Arizona state law requires the Arizona Department of Water Resources to designate the adequacy of each municipality to support the water demands of proposed development projects. In 1998, Arizona Department of Water Resources approved Phoenix's application for a designation of assured water supply for the next 100 years (PWSD 2005b).

There is a variety of demand-side conservation programs employed in the industry today. Below are short descriptions of the most common ones.

- High-efficiency washing machines are designed to save water and energy. Water utilities provide customers using high efficiency-washing machines with rebates in various forms.
- Meters are installed at existing customer sites where currently no meter exists. These programs also require installation of water meters at all new construction sites. Such programs sometimes add meters to individual units in a multi-family building where there was previously only a master meter (CUWCC 2005).
- Low-flow shower heads and other water-efficient plumbing devices are provided to the customer through various types of incentive programs.
- Residential home surveys target both indoor and outdoor water use. In practice, home surveys usually imply a site visit by trained staff members who solicit information on current water-use practices and make recommendations for improvements. Sometimes indoor plumbing retrofit devices are directly installed when appropriate. The outdoor portion of the survey can vary widely, ranging from an intensive outdoor efficiency study to provision of a brochure on outdoor watering practices (CUWCC 2005).
- Ultra-low-flush (ULF) toilets are toilets using no more than 1.6 gallons per flush, and High Efficiency Toilets (HETs) are toilets using no more than 1.28 gallons per flush. HETs include dual-flush fixtures. Various incentive programs are used by water utilities to promote the installation of ULF toilets and HETs.
- Commercial – Institutional and Industrial Surveys/Audits can range from short “walkthroughs” to sophisticated water-efficiency studies. Customers are targeted with a marketing strategy and incentives. Recommendations are made to reduce the water consumption at the facility (CUWCC 2005).

Federal Regulations

On Jan.24, 2007, the Environmental Protection Agency announced that it is releasing a final specification for the latest generation of water-saving, high-efficiency toilets. Those toilets that use fewer than 1.28 gallons per flush and meet performance standards for quality will qualify for EPA's WaterSense label to help consumers make informed buying decisions about water-efficient products. During the development of its WaterSense program, EPA analysts determined that toilets represented a significant target for its water-efficiency activities. Toilet usage accounts for nearly one-third of home water consumption. It is estimated that the

installation of high-efficiency toilets can reduce total household water consumption by about 10 percent (AMWA 2007).

On Feb.8, 2007, the EPA announced that it is developing similar product-performance criteria for high-efficiency bathroom sink faucets. Residential bathroom and kitchen faucets account for approximately 15.3 percent of indoor residential water use in the United States (AMWA 2007). The Energy Policy Act of 1992 originally set the maximum flow rate for both lavatory and kitchen faucets at 2.2 gallons per minute. Research based upon the standards set by the 1992 act estimate that public water demands will be reduced by 5 percent by 2010, climbing to an 8 percent water reduction by 2020 (Dickinson et al. 2003).

Rate Structures and Demand-Side Conservation

As indicated previously, water rates are believed to be an effective tool for reducing water use in states and cities faced with drought, shrinking water supplies, or other reasons to conserve water. However, in most locations this strategy appears to have been ineffective because the pricing structures are not aggressive and the incremental price increases are virtually unnoticeable to customers (WRA 2003). A majority of the partner utilities had implemented increasing block rate pricing structures.

Analysis of the marginal price curves of the rate structures revealed differences in the utilities' price incentives. Each utility's rate structure has a unique marginal price curve. The marginal price curves represent the change in the unit prices of water as consumption levels increase. In an increasing block rate structure, the marginal price curves move upward in a "staircase" manner, with each "stair" representing each block rate. Plotting all of these marginal price curves on one graph exposes the distinct economic effect of each price structure (WRA 2003). [Table 3.8](#) provides a breakdown of partner utilities rate structures. [Figure 3.3](#) illustrates the significant differences between increasing block rates, declining block rates, uniform, and seasonal rates implemented by the partner utilities.

Seattle's 2007 "inside" rate structure showed the steepest marginal price curve of the partners. The steepness was attributed to the sizeable incremental increases in each block price, the number of blocks, and the relatively low "volume triggers" for each block. Seattle is an example of an aggressive increasing block rate structure. Seattle also had the lowest average usage per residential account among the partner utilities.

While the increasing block rate structure is the typical choice for encouraging conservation, it may fail to provide revenue stability for the utility (AWWA 2000). The setting of the block volumes and prices is integral to this strategy's effectiveness. Although the majority of water providers in the study implemented an increasing block rate structure, many of the block prices in these structures appear to be set too low to be effective. This ineffectiveness is compounded if the incremental price increases from block to block are negligible (WRA 2003).

**Table 3.5
Case Study Matrix**

Utility	Rate Structure	Customer Classification	Conservation	Residential Consumption (Period)
Calgary	A three-block declining rate structure.	Six customer classes: metered single family residential, flat rate residential, multi-family residential, metered general service, irrigation, and outside city customers.	The city of Calgary has numerous conservation policies currently in place: water efficiency plan, toilet rebate program, rain barrel promotion, indoor water saver kits, outdoor water saver kits, school education programs, and water conservation report.	Declining (1975-2001)
Cincinnati	A three-block declining rate structure for all customer classes.	Seven customer classes: commercial, free, industrial, interdepartmental, residential, welfare, and wholesale.	Water is plentiful in the Cincinnati region, and no local conservation policies are currently in place. GCWW does provides educational materials for customers via the department's website.	Relatively flat (1993-2006)
Cleveland	A two-block inclining rate structure.	Customer classification system is based upon meter size. The general rule of thumb is that meters less than or equal to 1" are classified as residential. Those accounts with meter sizes greater than 1.5" are classified as commercial.	Water is plentiful in the Cleveland region, and no local conservation policies are currently in place. CWD does provides educational materials for customers via the department's website.	Declining (1977-2006)
Dallas	A four-block inclining rate structure.	Five customer classes: residential, general service, municipal, optional general service, and wholesale.	DWU conservation program focuses on outreach initiatives (minor plumbing repair ,toilet voucher and irrigation system inspection programs) and education and outreach initiatives.	Increasing (1996-2006)
Las Vegas	A three-block inclining system.	Customer classification based upon meter size and customers indicated function of the property. Currently there are 15 customer classes	LVVWD conservation program focuses on watering and turf limits and restrictions. LVVWD offers rebates and services through Southern Nevada Water Authority and has an intensive education and outreach initiatives program.	Declining (1978-2007)

None of the partners indicated that changes in household usage affected the water quality nor their ability to respond to emergencies.

**Table 3.6
Case Study Matrix continued**

Utility	Rate Structure	Customer Classification	Conservation	Residential Consumption (Period)
Louisville	A hybrid (inclining and declining) seven-block rate structure. The first three blocks service all residential customers.	Seven customer-billing classes: residential, commercial, industrial, fire hydrant, fire service, municipal, and wholesale.	Water is plentiful in the Louisville region, and no local conservation policies are currently in place. The LWC does provide educational materials for customers via the department's website.	Declining (1975-2005)
New Haven	Two-block declining rate structure.	Five customer classes: residential, commercial, industrial, public authority, and fire protection.	The SCCRWA provides water audits for large commercial and industrial customers to promote water conservation. They provide residential customers educational materials.	Relatively flat (1977-2006)
Philadelphia	Four block declining rate structure.	Classification by meter size: small meter accounts equal <1", and large meter accounts for meters >1".	The Water Conservation Assistance Program (CAP) is designed to reduce water waste through repairing plumbing and installing water conservation devices. CAP also offers conservation literature to customers.	Declining (1985-2006)
Phoenix	Seasonal uniform rate structure.	Classification based upon meter size. Currently, there are over 40 customer classification types utilized by the department, 87 percent are single family.	Water Conservation Plan (WCP) focuses on five areas: education and public awareness; technical assistance; regulation; planning and research; and interagency and intra-city coordination.	Declining (1991-2006)
Saint Paul	Seasonal uniform rate structure.	Customers are classified as either domestic or commercial. All services meters one-inch and smaller are typically classified as domestic accounts.	For residential customers SPRWS provides educational materials.	Declining (1975-2005)
Seattle	A seasonal three block inclining rate structure.	Two customer classes: residential and commercial. The residential class includes single-family and duplex households. The commercial class serves as a catchall for all other accounts.	SPU conservation program focuses on higher marginal rates in the summer peak season, aggressive water conservation programs, efficiency standards for water fixtures, and improved system operations.	Declining (1984-2006)
None of the partners indicated that changes in household usage affected the water quality nor their ability to respond to emergencies.				

Table 3.7
Conservation measures implemented by partner utilities

Measurement	Calgary	Cincinnati	Cleveland	Dallas	Las Vegas	Louisville	New Haven	Philadelphia	Phoenix	Saint Paul	Seattle
Implemented Conservation Measurements	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes
Efficient Showerhead Program	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	Yes
Low Flow Toilet Program	Yes	No	No	Yes	No	No	No	Yes	No	No	Yes
Water Conservation Fixtures	No	No	No	Yes	Yes	No	No	Yes	No	No	No
Rain Barrel	Yes	No	No	No	No	Yes	No	No	No	No	No
Irrigation Ordinance	No	No	No	Yes	Yes	No	No	No	Yes	No	No
Leak Detection	Yes	No	No	Yes	Yes	No	No	Yes	Yes	No	Yes
Metering Testing, repair and replacement	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No
Public Education Programs	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Xeriscape lawn replacement program	No	No	No	No	Yes	No	No	No	No	No	No

Table 3.8
2007 Water rates and surcharges for residential accounts

Partner Utilities	2007 Rate Structure	Fixed Service Charge	Consumption Rate: per 1,000 gallons of water consumed	Additional Rates or Fees
Calgary	Uniform	\$10.74/month		\$3.86
Cincinnati	Declining Block Rate	\$8.17/month [#]	\$2.23 for the first 14,960 gal. \$1.78 next 433,840 gal. \$1.59 for over 448,800 gal.	Fire Protection: \$10.56/month
Cleveland	Inclining Block Rate	\$2.33/month	\$1.16 first 7,480 gal. \$2.49 for over 7,480 gal.	
Dallas	Inclining Block Rate	\$4.24/month [#]	\$1.49 first 4,000 gal. \$2.43 next 6,000 gal. \$3.37 next 5,000 gal. \$4.32 for over 15,000 gal.	
Las Vegas	Inclining Block Rate	\$4.04/month	\$1.10 first 5,000 gal. \$1.89 next 5,000 gal. \$2.62 next 10,000 gal. \$3.48 over 20,000 gal.	
Louisville	Mixed declining and inclining	\$5.65/month [#]	\$2.03 first 3,000 gal. \$2.22 next 3,000 gal. \$2.50 next 194,000 gal. \$2.36 next 1,300,000 gal. \$2.16 next 3,500,000 gal. \$1.58 next 5,000,000 gal. \$1.44 for over 8894000 gal.	
New Haven	Declining Block Rate	\$17.75/month [#]	\$3.10 first 748,000 gal. \$2.35 next gal.	
Philadelphia	Declining Block Rate	\$4.88/month [#]	\$2.91 first 14,960 gal. \$2.31 next 733,040 gal. \$2.05 next 14,212,000 gal. \$1.54 for over 14,960,000 gal.	
Phoenix	Seasonal Inclining	\$4.69/month [#] (includes 4,488 gal. Oct.-May and 7,480 gal. June-Sept.)	Dec.-Mar. \$2.20 for over 4,448 gal. Apr., May, Oct, Nov. \$2.63 over 4,448 gal. June-Sept. \$3.34 over 7,480 gal.	Environmental Charge: \$0.33 per 1,000 gal.
Saint Paul	Seasonal Uniform	\$0.00/month	June-Nov. \$2.62 first 748,000 gal. June-Nov. \$2.54 for over 748,001 gal. Dec.-May \$2.49 gal. first 748,000 gal. Dec.-May \$2.41 for over 748,001 gal.	Yearly Testing Fee: \$0.53/month (continued)

Table 3.8 Continued

Seattle ^{\$}	Seasonal Inclining	\$9.40/month [#]	Sept. 16th-May15th \$3.50 first 3,740 gal. May 16th- Sept. 15th \$3.85 first 3,740 gal. May 16th- Sept. 15th \$4.48 next 9,724 gal. May 16th- Sept. 15th \$11.43 over 13,465 gal.
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#: Average between 5/8 and 3/4 sized meters

\$ Inside Seattle Customer

% Inside Cincinnati Customer

Comparing Marginal Price curves for 2006

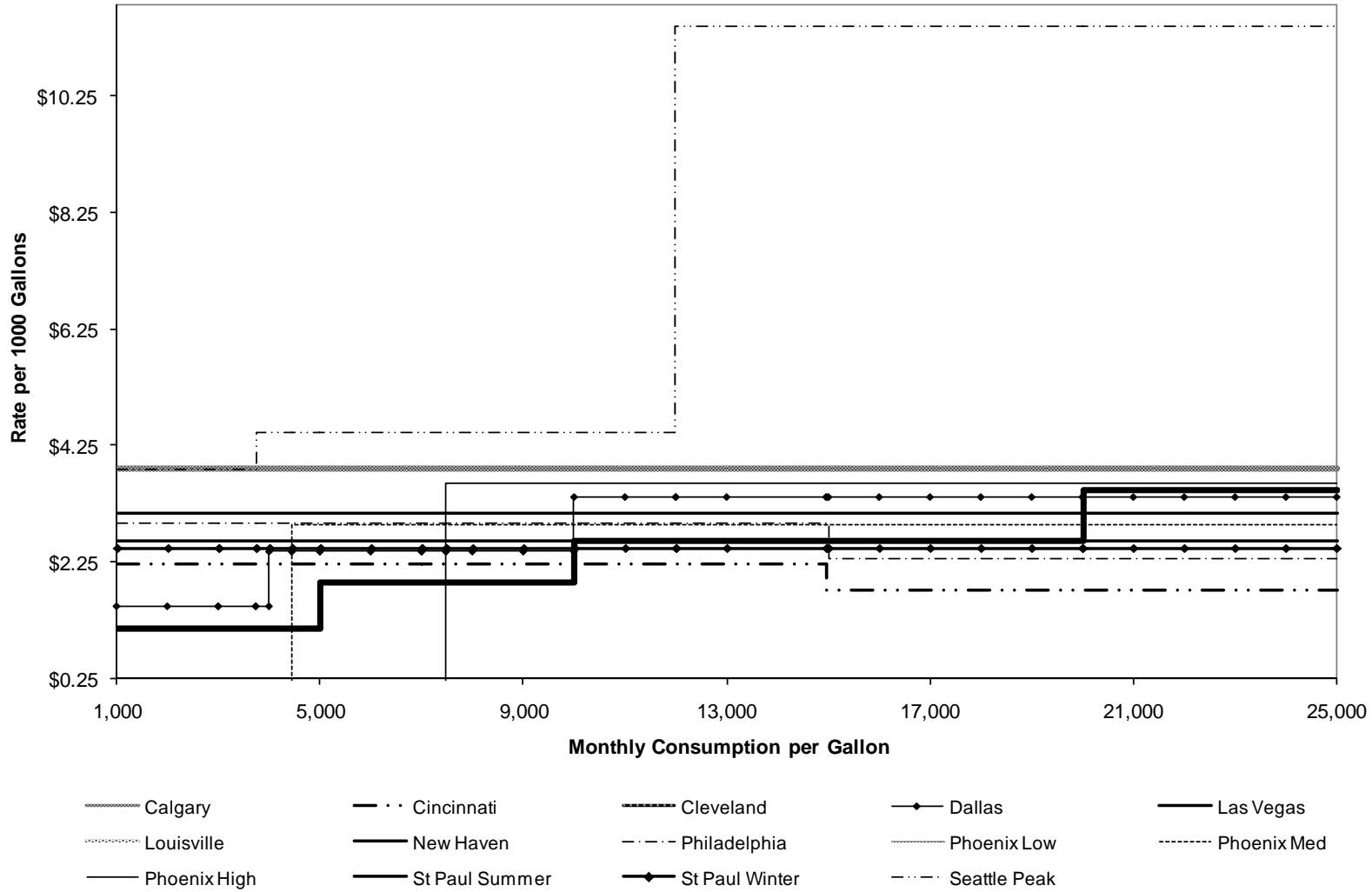


Figure 3.3. Comparing rate structures (normalized to cost per 1,000 gallons)

Distribution-Side Conservation

As water-generated revenues continue to decrease, water utilities are increasing efforts to account for and bill for all water produced. To identify lost water revenues, some utilities are implementing distribution-side conservation programs, also known as water-loss control programs. While these programs are not pervasive throughout North America, the programs can result in multiple benefits to the water utility and the environment (Sturm 2007). For example, the U.S. Geological Survey (1998) identifies 6 billion gallons per day as the amount of “public use and loss,” an amount of water sufficient to supply the 10 largest U.S. cities.

Due to the current lack of standard reporting methods, it is difficult to quantify the amount of water lost in U.S. distribution systems (Sturm 2007). The most commonly employed water loss-performance indicator (percentage ratio of water losses in relation to the total system supply) is highly unreliable and translates nothing about water volumes and cost, the two most important parameters in water-loss assessments (Kunkel et al. 2003). As a result, the majority of U.S. water utilities only apply reactive leakage management practices (Sturm 2007).

Water-loss control programs vary from utility to utility, since they are tailored to the needs and specific characteristics of the utility. However, in general there are three major components in a water-loss control program. The first is the water audit phase, which is complemented by a component analysis of real losses, the assessment of the economic optimum volume of real losses, and the design of an appropriate intervention strategy. It is paramount for the success of any intervention program or any investment in leak detection equipment, no matter how expensive and sophisticated the equipment might be, that the utility has undertaken a detailed water audit in order to gain the necessary understanding of its water losses (Sturm 2008). The next step is the intervention phase, which is followed by the final phase of result evaluation.

Having a reliable water audit is the foundation of proper resource management for drinking water utilities. The Water Loss Control Committee (WLCC) of the American Water Works Association (AWWA) recommended both the IWA Water Balance and the IWA Performance Indicators in their Committee Report (Kunkel et al. 2003) as the current industry best practice for assessing water losses. The method accounts for all water as either consumption or losses. The water audit standards can help utilities uncover a number of shortcomings that can be corrected to recover lost water and revenue (Billings et al. 2008). [Table 3.9](#) outlines the AWWA standard water balance methodology.

Although nearly all the partner utilities implemented water audits, no common water audit format was used. Only the Philadelphia Water Department implemented the water audit methodology recommend by the AWWA.

**Table 3.9
IWA/AWWA Standard water balance**

System Input (Corrected)	Authorized Consumption	Billed Authorized Consumption	Billed Water Exported	Revenue Water
			Un-billed Metered Authorized Consumption	
			Un-billed Un-metered Authorized Consumption	
	Un-billed Authorized Consumption	Un-billed Metered Authorized Consumption	Non-Revenue Water	
		Un-billed Un-metered Authorized Consumption		
	Water Losses	Apparent Losses	Unauthorized Use (including theft of water)	
			Consumption Meter Error	
Real Loss				

CHAPTER 4 LOCAL BEHAVIOR

INTRODUCTION AND STUDY OBJECTIVES

Over the past decade, water managers have become increasingly concerned about the causes of declining water usage among their households. For example, water usage for the average customer peaked in late 1988 at around 7,000 gallons per month for the Louisville Water Company, but today that number is just 5,600 gallons per month, a decline of 20 percent. Suggested explanations for the decline include wetter weather, new water-conserving appliances, declining number of people per residence, classification anomalies (multifamily residences counted under commercial customer category), and measurement problems (deteriorating meters). These factors would cause water usage per residence to fall, but the relative magnitude of each impact is unknown.

Understanding the root causes of the decline in water usage is complicated by competing factors that typically increase usage. Household incomes continue to rise, leading to more luxury water features and less sensitivity to price. Lawn-irrigation systems are now commonplace, and these can easily use as much water as all indoor uses combined. These and other factors complicate the identification of underlying causes and their associated effects on residential water usage.

To investigate the causes of residential water usage decline, a local end-use study was conducted for the Louisville Water Company (LWC) service area. This study built on the 1999 study by Mayer et al., which was thorough in its findings and widely disseminated by the Foundation. However, the Mayer study noted that the 12 locations chosen for the survey work “are not statistically representative of all North American utilities.” In fact, most of those study sites were in the West or Southwest, with Waterloo, Ontario, and Tampa, Fla., the only eastern cities included. Most of the U.S. population resides east of the Mississippi River, a generally wet area where many utilities are more concerned with selling all the water they have rather than with developing conservation and rationing schemes. Therefore, this study was intended to be an extension of the Mayer study, using essentially the same methods and tools but applying them to a typical, large urban water system in the middle of the country where the weather is significantly wetter.

First, the study identified community usage trends and characteristics. A 48-question survey was mailed to a stratified random sample of 1,002 LWC households. The mail survey included questions about the type and number of water-using appliances in the home, types of outdoor water usage, characteristics of the housing structure, number and ages of residents, and education of the primary wage-earner.

With the characterization survey complete, 65 respondents were randomly selected to participate in the data-logging phase, conducted jointly with Aquacraft Inc. of Boulder, Colo. The loggers were installed on meters outside the homes for 14 days and recorded water flows into the home at 10-second intervals. The resulting usage record was matched to the inventory and flow signatures of water-using appliances in the home, enabling a detailed breakdown of how and when customers used water. By focusing on the daily usage patterns of actual customers, the study could record and measure the effects of demographics, water-conserving appliances, and other factors.

Performing the local-level study in a two-staged process enabled the development of a robust database that combined water usage and demographic information with publically available information from census tracts and tax records. With this combined information, it was possible to measure the independent effects of:

- Weather – local temperature, precipitation, and soil moisture
- Demographic factors - the number of people in the home and their ages
- Housing vintage – age of home, as one measure of water infrastructure
- Home value and size – as a proxy for income of household
- Water-using appliances in home – inventory of number, type, and vintage
- Seasonal behavioral patterns – snowbirds leaving for winter, students returning from college, holiday usage differences
- Lot size, housing footprint on lot – a measure of potential lawn and landscape watering
- Significant water features, such as swimming pools and fountains

By studying the water usage of a representative sample of households over an extended period, researchers could directly observe the effects of changing weather and seasonal behavior, while controlling for demographic, economic, and housing characteristics. The data obtained from the survey and data logging were combined and used to develop statistical models to identify and quantify important underlying causes of differential water usage by customer.

MAIL SURVEY DESIGN AND SAMPLING

Mail Survey

For the mail survey, 1,002 customers were randomly selected from a qualifying pool of over 250,000 LWC households. The qualifying pool was first filtered from the total population of 1.75 million bi-monthly customer billing records based on households who purchased water for the full year and who used either 5/8- or 3/4-inch meters. For each selected customer, the street address, meter size, customer type, and monthly or bimonthly water usage for 2005 through 2007 were obtained. The street address of each customer was subsequently matched to 2005 property tax assessment records to determine the assessed value of the real estate, age of structure, square footage of home, and lot size. The purpose of the mail survey was to obtain more precise characteristics of households than is generally available from public or water utility databases. The survey collected information on indoor water fixtures, outdoor landscaping, outdoor water fixtures, and household demographics. A copy of the survey is provided in an appendix to this report.

Researchers used household size, house age, assessed value, water usage, and geographic distribution by zip code to draw a stratified random sample of 1,002 residential water customers. These customers were sent a letter from the LWC president asking for their help with the research project. Included with the letter was the four-page survey instrument, provided in an appendix to this report. The instrument was a slightly modified version of that used by Mayer et al. (1999) in their seminal study of residential end uses of water. The LWC survey achieved a response rate of 30.2 percent (n=302). Due to the limited timeframe to complete the local survey and data-logging elements of the study, no follow-up letters or postcards were sent to survey

non-respondents. Out of the respondents, 58 percent (N=178) volunteered to participate in the data-logging phase of the study. Based on comparison of the data, the survey respondents were suitably representative of the entire population.

MAIL SURVEY RESULTS

Housing Trends

The results of the mail survey and street-address matching provide insight into community characteristics and how customers use water. Based on the demographic information related to the street addresses, [Figure 4.1](#) shows that most of the housing stock for the LWC predates the federal mandates for water-conserving appliances legislated in the mid-1990s. In fact, 4 out of 10 homes in the county were constructed between 1950 and 1969. However, those that were remodeled during the last 15 years may well have water-conserving appliances.

[Figure 4.2](#) provides an overview of the square footage of homes in the LWC community. Over 40 percent of homes have less than 1,250 square feet, and two-thirds have less than 1,850 square feet. A very small proportion of homes are larger than 4,000 square feet. Home values are roughly correlated with square footage, with two-thirds of homes valued at less than \$150,000, as shown in [Figure 4.3](#). Water usage, however, is much more evenly distributed, except at the extremely high end. There is roughly the same number of homes using just 2,000 gallons of water per month as there are those using 6,000 gallons. Only about 2 percent of homes use more than 12,000 gallons per month, as shown in [Figure 4.4](#).

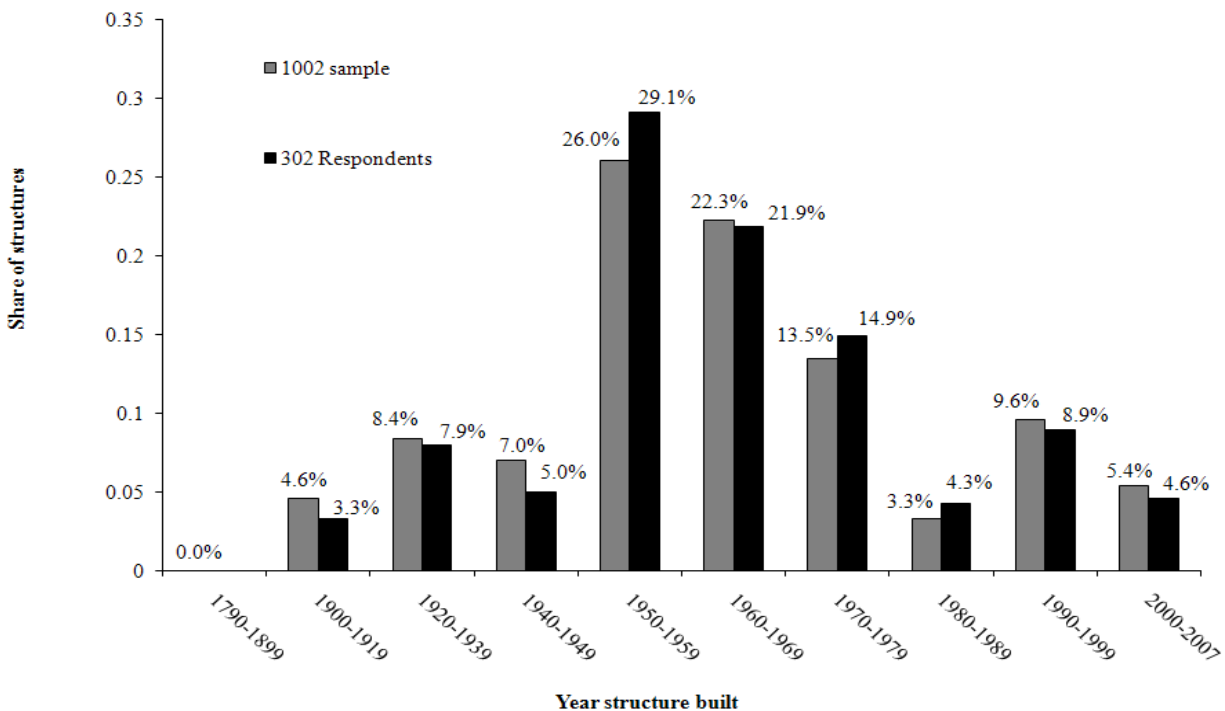


Figure 4.1. Comparison of construction dates of homes

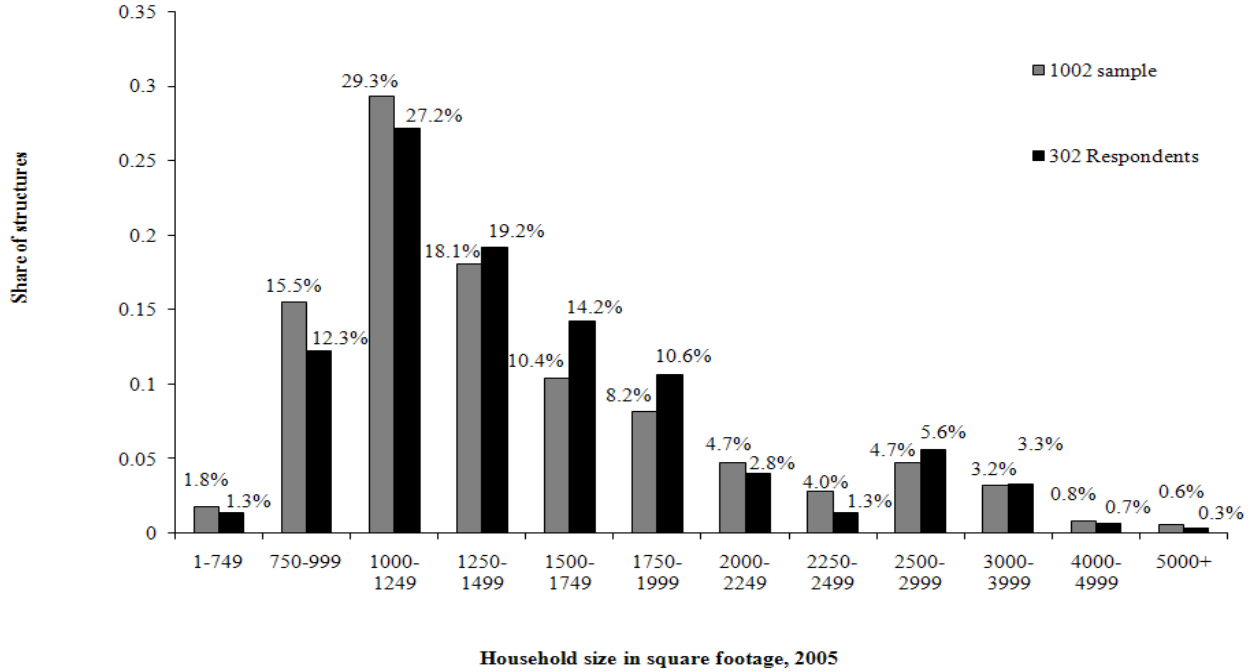


Figure 4.2. Comparison of home sizes

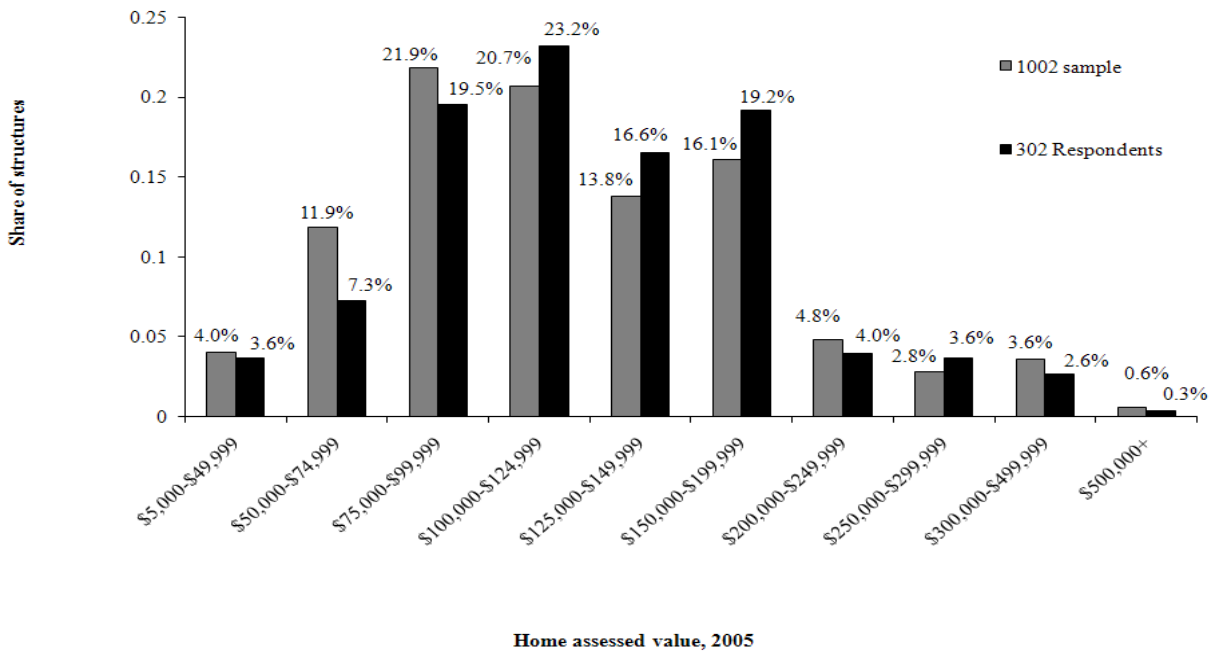


Figure 4.3. Comparison of assessed home values

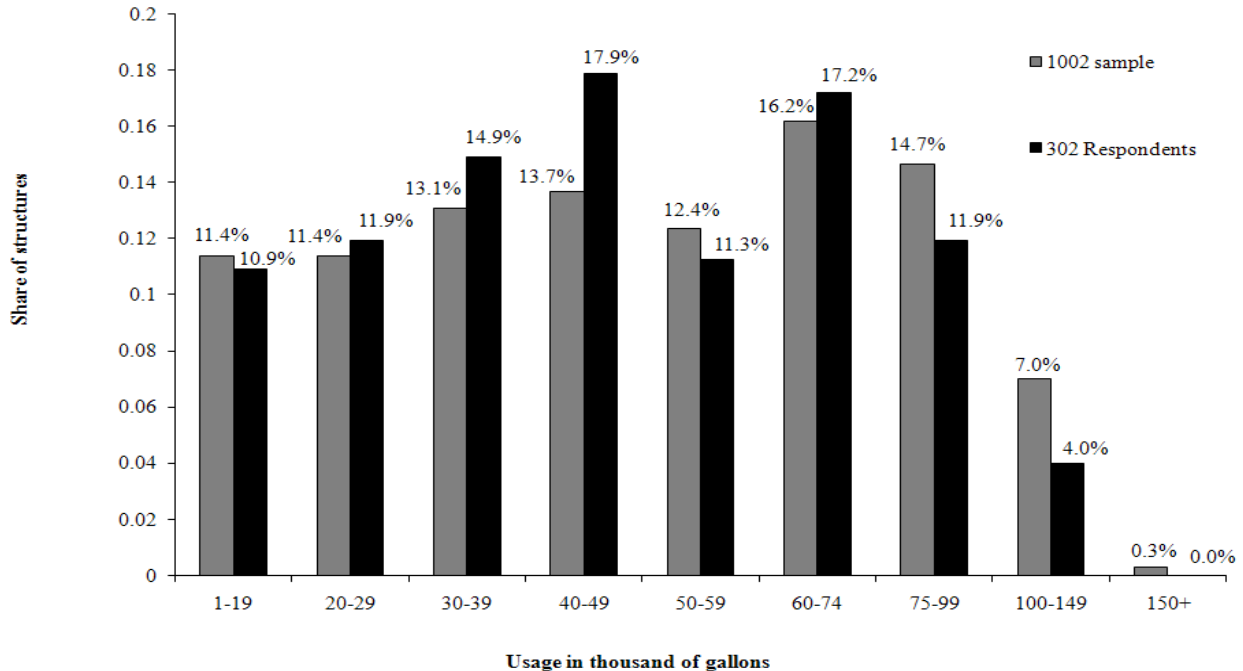


Figure 4.4. Comparison of average residential annual usage for 2006

Indoor Water Fixtures

One of the primary objectives of the survey instrument was to explore the number and types of water-using fixtures and appliances in the home. The survey respondents averaged 1.97 toilets and 1.27 bath/shower combinations per house. Over 99 percent of respondents reported having some kind of clothes washer, and 92 percent were top-loaded compared to 7.4 percent front-loaded. More than 66 percent reported having a dishwasher in the home, and 35 percent reported having a garbage disposal, as shown in [Table 4.1](#). [Table 4.2](#) provides a comparison of the saturation of top-loaded and front-loaded clothes washers, garbage disposals, and dishwashers.

The U.S. Energy Policy Act of 1992 restricted household toilets to 1.6 gallons per flush (gpf), and all faucet fixtures manufactured in the United States since 1994 restrict maximum water flow at or below 2.2 gallons per minute (gpm). Several survey questions were designed to assess the penetration of these low-flow fixtures in the survey population. Based on the data, 23 percent of respondents had at least one ultra-low-flush toilet (1.6 gallons per flush) in the household, and 27 percent had at least one low-flow (water-conserving) showerhead in the home. The extent of low-flow fixtures is detailed in [Table 4.3](#).

The number of respondents who indicated renovation or replacements of indoor water fixtures and infrastructure since 1994 varied. Nearly one-third of the respondents indicated they had indoor plumbing work done since 1994. More than 59 percent indicated replacing kitchen fixtures since 1994, while 60 percent indicated replacing bathroom fixtures. Survey results related to these issues are detailed in [Table 4.4](#).

Table 4.1
Water using appliances or fixtures

	# Toilets	# Bath with showers	Bathtub only	Shower only	Indoor utility sink/garage sink
Mean	1.94	1.26	0.28	0.48	0.32
Median	2	1	0	0	0
Std. Deviation	0.87	0.57	0.60	0.56	0.59
Variance	0.76	0.32	0.36	0.31	0.35

Table 4.2
Saturation of garbage disposal, clothes washers, and dishwashers from local mail survey

	Top-loading wash machine	Front-loading wash machine	Dishwashing machine	Garbage Disposal
Yes	92.2%	7.4%	66.4%	35.0%
No	6.4%	79.5%	29.7%	61.8%
NR	1.4%	13.1%	3.9%	3.2%

Table 4.3
Inventory of water-conserving bathroom fixtures

	# of ultra-low-flush toilets (1.6 gallons per flush)	# of low-flow (water conserving) showerheads
NR	1.1%	2.8%
0	38.9%	40.3%
1	23.3%	27.9%
2	16.6%	15.5%
3	6.0%	1.4%
4 or More	2.8%	2.1%
Don't Know	11.3%	9.9%

Table 4.4
Renovated or replaced water-using fixtures since 1994

	Plumbing pipes (inside the house)	Bathroom fixtures	Kitchen fixtures
Yes	32.2%	60.4%	59.4%
No	64.3%	37.8%	39.2%
NR	3.5%	1.8%	1.4%

Outdoor Landscape

The survey also explored household irrigation practices employed for each type of landscape. The survey instrument included specific questions to determine the percentage of the household landscape dedicated to turf, gardens (flower or vegetable), and landscaped plants (trees, shrubs, vines, groundcover, etc.). Irrigation practices employed during the winter and summer months also were assessed, and more than 53 percent of respondents indicated that they consistently watered their outside landscape. Of those, 8 percent indicated they employed a contractor for maintaining outdoor landscapes. Only two respondents indicated that contractors were responsible for watering outdoor landscapes.

The percentages of turf, gardens, and landscaped plants maintained by each respondent ranged widely. More than 14 percent reported that turf made up “half or more” of their outdoor landscape. Approximately 19 percent reported that gardens consisted of “less than 5 percent to 10 percent” of their outdoor landscape. About 21 percent of respondents indicated that landscape plants made up “less than 5 percent” of their outdoor landscape.

The water-irrigation practices associated with maintaining the outdoor landscapes also ranged widely. Most indicated irrigating outdoor landscapes (turf, gardens, or landscape plants) a few times per month, or twice or less per month. The third-most-common practice was to irrigate twice a week. This was true for all three landscape types. A breakdown of the percentage of turf, garden, and landscape and the watering frequency are detailed in [Figures 4.5 and 4.6](#).

Three respondents indicated using an alternative water source, directed roof water, in addition to water purchased to meet outdoor water needs. Nine of the household respondents indicated having an in-ground watering (irrigation) system. Out of those nine, two indicated the presence of a weather-based irrigation controller (WBIC) or “smart” controller.

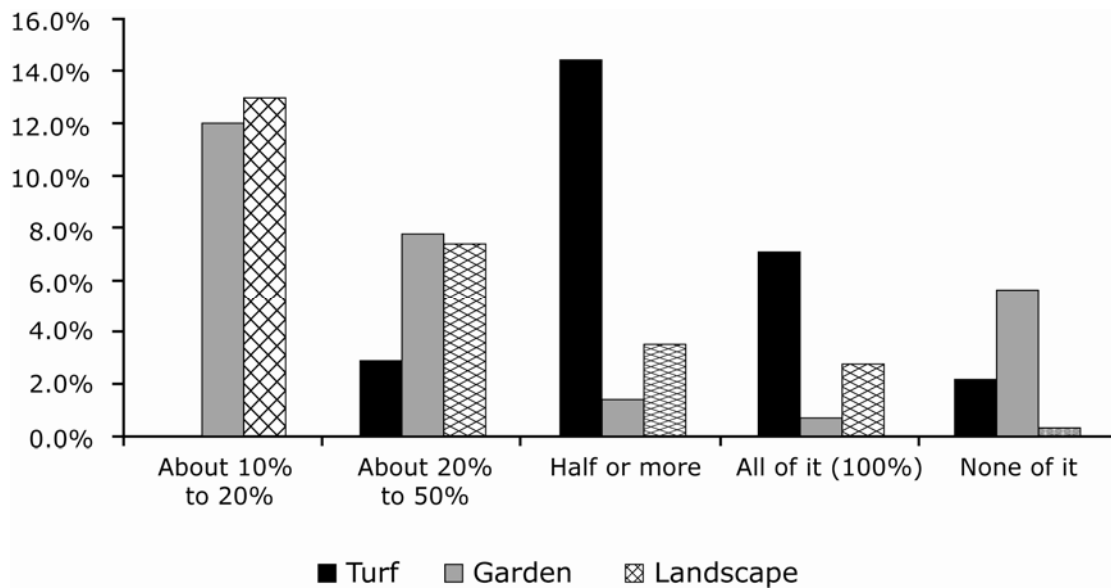


Figure 4.5. Percentage, by type, of outdoor landscape

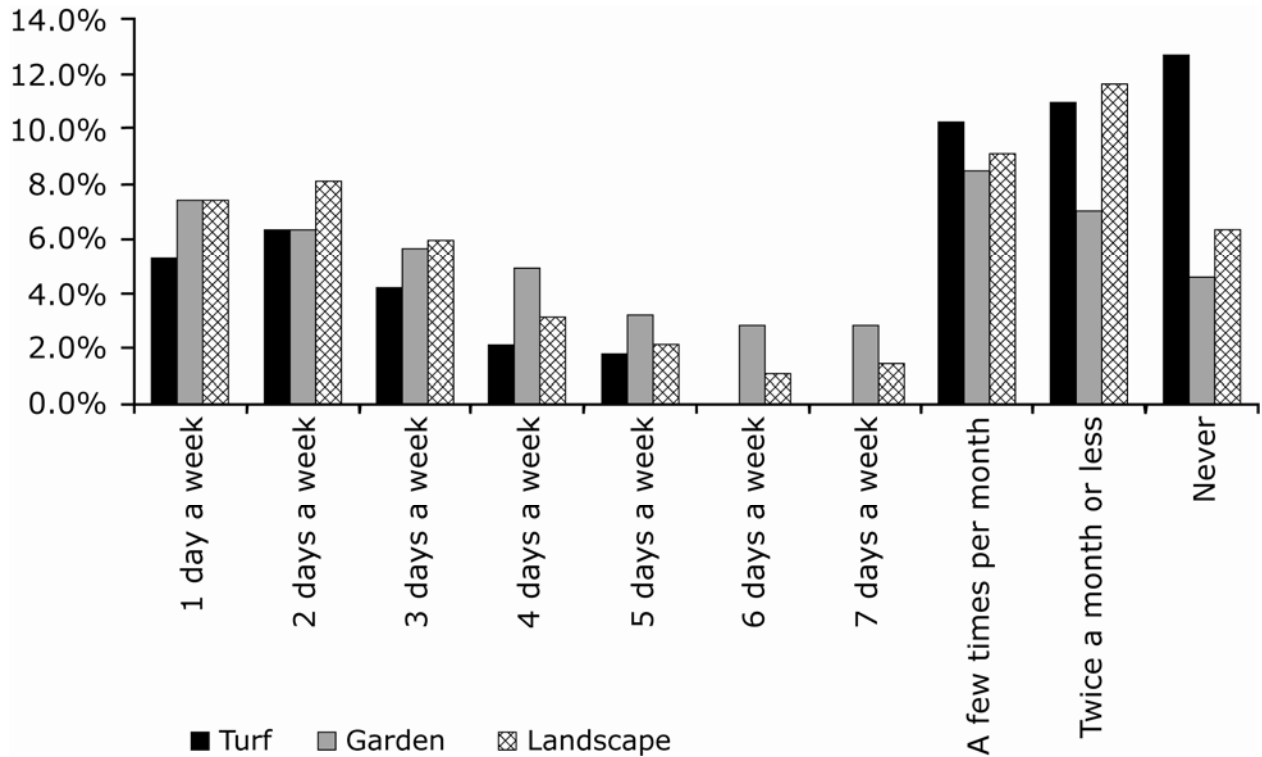


Figure 4.6. Frequency of watering of outdoor features during the summer months

Outdoor Water Fixtures

The presence of outdoor water fixtures such as spas, pools, or ponds found on the property also may significantly alter water usage. Of the respondents, 4.9 percent (N=14) indicated the presence of a spa or hot tub on the property. Of those, 57 percent (N=8) indicated the spa or hot tub was filled year-round. Overall, 8 percent of the respondents indicated the presence of an outdoor pool on the property. Typically, respondents with pools indicated the outdoor pools are closed annually September through May.

Household Demographics

The survey asked respondents to report the number of adults living at the address who were employed full-time outside of the home and the number of people living at the address, by five predetermined age categories. The average number of residents was 2.24 per household. Of special interest, the average number of adults per household for survey respondents was 1.89, but the average number of adults working full-time outside of the home was 1.02. The summarized responses to these questions are presented in [Tables 4.5](#) and [4.6](#).

Another issue explored concerned the highest level of education achieved by the primary wage-earner. The highest frequency occurred in the “some college or associate’s degree” category, accounting for 30 percent of the respondents. Of the survey respondents, 36 percent had achieved a bachelor’s degree or higher (masters or doctorate). The educational achievement levels of the survey respondents are shown in [Table 4.7](#).

Table 4.5
Frequency distribution and mean number of residents

	Adults (>18)	Teenagers (age 13-17)	Older Children (6-12)	Younger Children (age3-5)	Infants (<age 3)	Average Number of People = 2.24
1	83	23	22	11	9	
2	158	8	5	1	2	
3	27		2		1	
4	11					
5	1					
Mean	1.89	1.05	1.09	0.72	0.89	

Table 4.6
Breakdown of number of adults working outside of the home

	Percentage
0	32.4
1	37.2
2	26.0
3	2.4
4	0.7
5	0.3
NA	1.0
Mean	1.02
Median	1.00
Std.	0.90

Table 4.7
Level of education of respondents

	Frequency	Percent
Less than High School	18	6.4%
High School degree	70	25.0%
Some College or Associate's degree	85	30.4%
Bachelor's Degree	55	19.6%
Master's degree	37	13.2%
Doctoral Degree	10	3.6%
NA	5	1.8%

LOCAL USAGE DATA DESIGN AND SAMPLING

After the mail survey, the researchers conducted the data-logging phase of the local study. Brainard 100EL data loggers were installed on 65 household meters for two weeks during November and December 2007. The flow recorders captured water-usage data at 10-second intervals, or 120,000 observations over 14 days. Of the 65 attempts, six failed due to meter pit flooding and other problems related to installing the loggers. The 59 successful data loggers were returned to Aquacraft in Boulder for analysis. Aquacraft used its proprietary TraceWizard flow signature software to determine the nature and timing of all indoor water usages. They used virtually the same process as work performed for the Foundation-sponsored “Residential End Use” study (Mayer et al. 1999).

Trace Wizard

Trace Wizard is a software package developed by Aquacraft specifically for the purpose of analyzing flow-trace data. Trace Wizard provides the analyst with powerful signal-processing tools and a library of flow-trace patterns for recognizing a variety of residential fixtures. Any consistent flow pattern can be isolated, quantified, and categorized using Trace Wizard, including leaks, irrigation, and swimming pools. The Trace Wizard software is capable of recognizing simultaneous events that occasionally occur in residential households. For example, if someone is taking a shower after starting a load of laundry in the clothes washer, Trace Wizard is able to separate these distinct events through a set of user-defined parameters.

Figure 4.7 shows a one-hour portion of a typical flow trace in Trace Wizard. The four light blue spikes are clothes washer cycles. The first is the wash cycle, the second is a rinse cycle, and the final two are rinsing during the spin cycle. The yellow events represent faucet use. Note that the times shown on the graph’s x-axis are the time interval depicted in the graph. The Trace Wizard graph has six time interval settings: 10 minutes, 20 minutes, 1 hour, 2 hours, 4 hours, and 6 hours. The analyst may use any of these “views” during the flow trace analysis process.

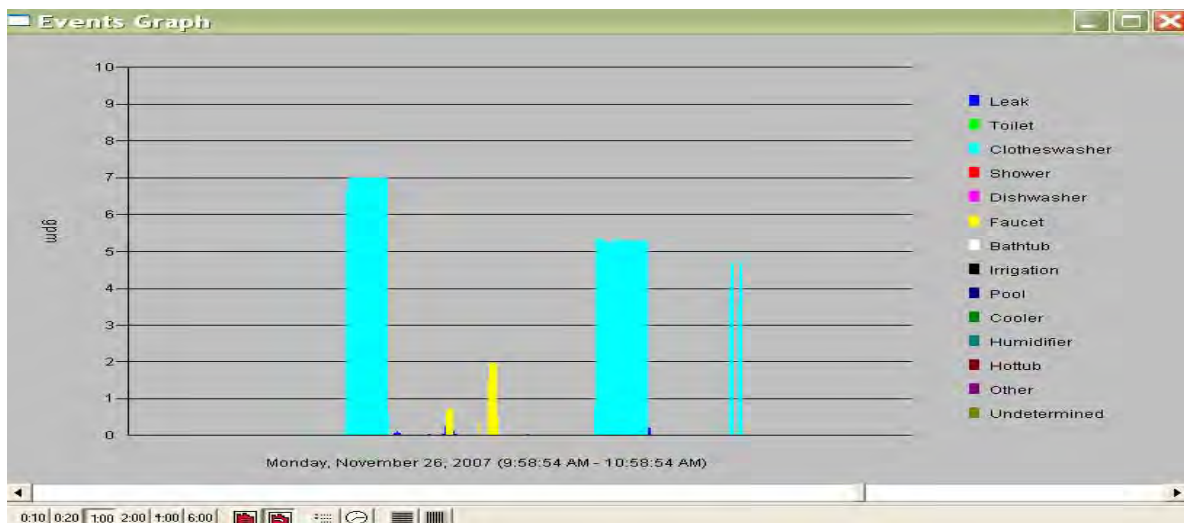


Figure 4.7 — Trace Wizard showing a one-hour view. Water events depicted include a two-cycle clothes washer followed by two rinses and faucet use

Usage Results

The flow trace analysis identified eight typical usage categories: toilet, clothes washer, shower, faucet, leak, bath, dishwasher, and other. This analysis allowed researchers to quantify the components of the daily water usage for a typical Louisville Water Company household. Table 4.8 and Figure 4.8 provides an overview of the descriptive statistics by fixture components for selected households. The data loggers collected information on 59 out of the 65 homes selected for the study. Overall, the study revealed that toilets constituted the majority (28%) of household consumption and clothes washers represented 22% of household consumption during the study period. This is typical of results found in other end use studies (Mayer et al 1999).

Table 4.8
Descriptive usage statistic for Louisville household by water fixtures*

	Toilet	Clothes Washer	Shower	Faucet	Leak	Other	Bath	Dish Washer	Total Indoor
Mean	37.5	32.4	18.4	20.5	17.5	4.0	3.1	1.9	151.6
StDev	20.1	25.6	19.7	12.9	34.3	8.5	7.5	2.2	160.2
N	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0
95% CI	5.12	6.54	5.04	3.30	8.76	2.17	1.92	0.56	40.88
Median	34.0	25.8	12.7	18.1	4.2	1.0	0.0	1.4	135.8

* All measurements in gallons per day.

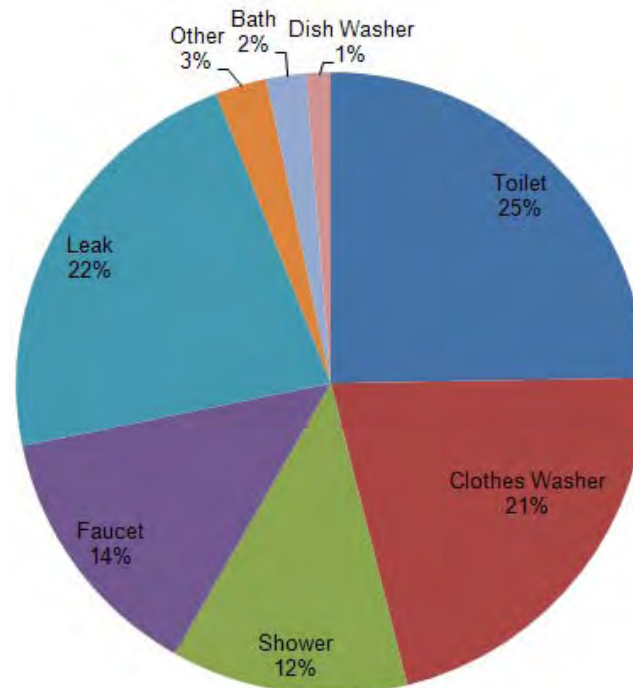


Figure 4.8. Pie chart comparing breakdown of daily usage by components

LOCAL USAGE MODEL DEVELOPMENT

The data obtained from the household survey were combined with water usage and property tax records to develop statistical models to explain the underlying causes of differential water usage by customer. The purpose of the statistical models was to determine the magnitude of the coefficients that relate measures of water demand factors (weather, demographic characteristics, housing type, and water-using appliances) to differences in daily household water usage. By estimating and interpreting these coefficients, it is possible to assess the importance and ranking of these variables as they relate to water-usage trends.

Water Price

A recent study by Olmstead et al. (2007) investigates the sensitivity of residential water demand to water price, finding that a 10 percent increase in price leads to a 3.3 percent decline in water demand. That study focused on estimating demand-price elasticity under various block rate structures among 16 water utilities. In the LWC case, there is very little variation in the price per gallon for residential customers and hence price elasticity (and endogenous price determination) is not of much interest. LWC has seven rate blocks, with the price per thousand gallons first rising with usage, then declining for very large water users (commercial and industrial). However, all residential customers fall into one of the first three blocks, with a very modest increase in price as usage rises (Table 4.9 and Figure 4.9). Using the block rate structure, the average monthly price could be computed for customers using between 0 and 30,000 gallons per month, the largest water user in the sample. The average price was between \$2.03 and \$2.43 per thousand gallons for all the customers, a growth of only one-fifth in price for a tenfold increase in quantity. Clearly, the supply curve is very elastic with respect to price. Moreover, nearly all households use between 1,000 and 10,000 gallons per month, meaning their average price varies only between \$2.03 and \$2.28 per thousand gallons.

Figure 4.8 plots the average price per thousand gallons against the quantity of water used, based on the company's rate schedule. Since this summarizes the amount of water the company is willing to supply at the prices shown, the relationship is considered the supply curve for residential water in Louisville. The curve has a slightly cubic shape and is fitted almost perfectly by the following equation:

$$P^S = 1.9413 + .04364 w - .00131 w^2 + .000013 w^3$$

Water (w) is measured in thousands of gallons. The price schedule is predetermined, but the average price depends upon the quantity chosen by customers.

Table 4.9
Louisville Water Company rate structure as of Jan. 1, 2007

Blocks	Thousand Gallons Per Month	Cost per Thousand Gallons
First	<3	\$2.03
Next	3	\$2.22
Next	194	\$2.50
Next	1,300	\$2.36
Next	3,500	\$2.16
Next	5,000	\$1.58
All Over	>10,000	\$1.44

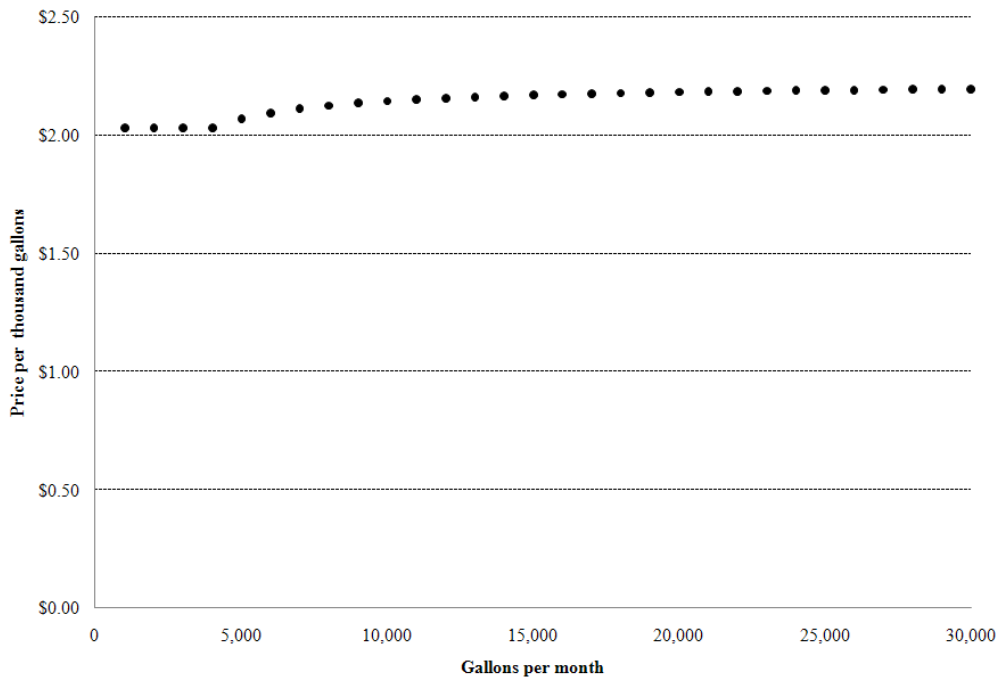


Figure 4.9. LWC average price per thousand gallons

While in a technical sense the LWC employs increasing block prices, from a practical point of view prices are uniform. Households are unlikely to know or care that the 5,599th gallon in a month costs \$0.00222 while the 6,001th gallon costs \$0.00250. Water prices are low compared to other household necessities, and the price penalty for using more water is very small. Moreover, nearly all residential water meters in the LWC system are calibrated to round down to the nearest whole thousand gallons. Hence, it is not feasible for a household to monitor usage to avoid tipping over into the higher rate bracket. A further complication is that the LWC only bills on a bimonthly basis (approximately) and so neither the LWC nor the customer knows how many gallons the customer uses in a calendar month. In practice, the LWC applies the rate schedule that is stated on a monthly basis to roughly two months of consumption. LWC adjusts for the longer timeframe by doubling the break points on the rate schedule, implicitly assuming that billing periods are exactly two months and that consumption is uniform between the two months.

Households could take action to conserve water, through capital investments or changes in behavior, if they felt sufficient shock from higher monthly bills. But with households

typically spending over \$100 per month on telecommunications (cell phone, cable TV, Internet service) the prospect of saving a few cents on a \$10 monthly water bill would not induce many people to install low-flow toilets, take fewer showers, or stop watering their landscaping. Hence, for the following model development, it is assumed that in practice households recognize the average residential water price (\$2.10 per thousand gallons) as the uniform price of water.

Water Demand Factors

Given a constant water price, water demand can then be specified using Equation 4.1.

$$w = Z \gamma + D \alpha + H \beta + A \delta + \mu + \varepsilon \quad (4.1)$$

where w = daily household water usage

Z = weather variable

D = household demographics and economic characteristics

H = physical characteristics of housing unit

A = types of water using appliance inside and outside the housing unit

μ = differences in household water preferences not captured by the other variables

ε = represents the usual random error term due to measurement problems.

The specification assumes that μ and ε are independent and normally distributed with zero mean and variances σ^2_{μ} and σ^2_{ε} . Water demand is modeled as a function of the variables in Z , D , and H , with the estimate coefficients providing the independent contribution of each factor to water usage in the household.

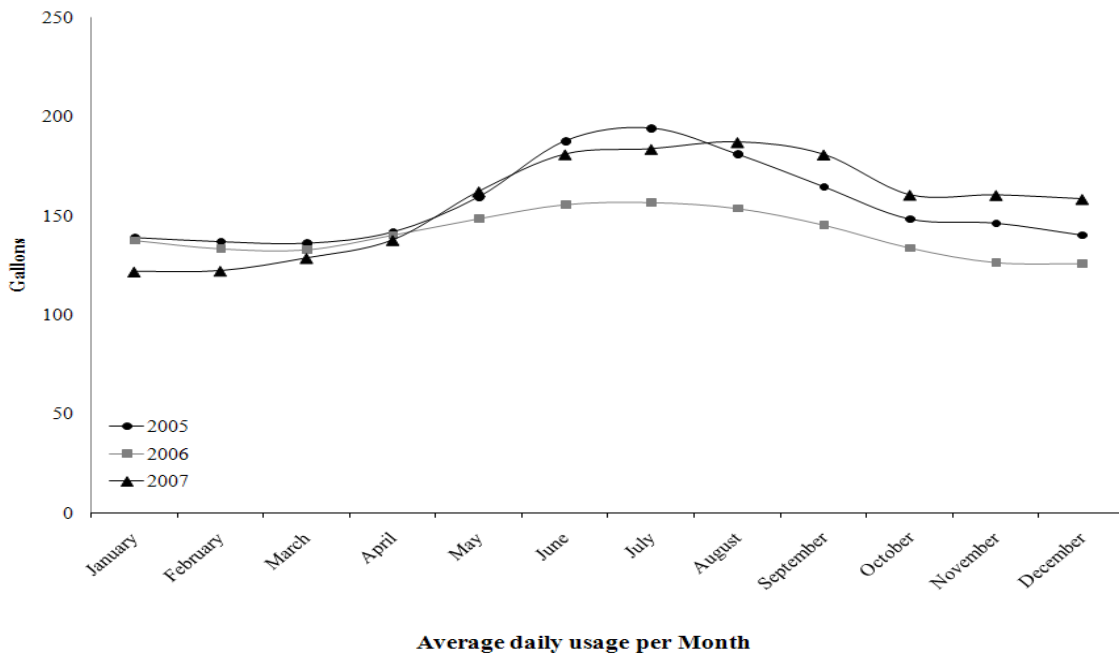


Figure 4.10. Average daily usage per month for surveyed residents

Weather Influence

Household water usage is known to vary seasonally, with potentially large variations due to abnormal weather events. [Figure 4.10](#) shows average monthly water usage for the households over the last three years of billing cycles. Note the flatness in usage during the period December through March and the strong increases into the summer months, followed by a decline in the fall. Outdoor water usage, especially for lawns and landscapes, is particularly high during the summer growing season. In fact, the consistent water usage per residential customer in the winter months has led many analysts to take that as a convenient measure of indoor water use year round, with higher usage in the other months attributable to the addition of outdoor uses. Year-to-year fluctuations in outdoor water usage are then attributed to variations in weather.

The fluctuations in water usage due to weather and seasonal demand were accounted for in the statistical models by a number of methods. First, the monthly data on Louisville temperature and precipitation was obtained from the National Oceanic and Atmospheric Administration. Second, the monthly Palmer drought indexes for the Louisville area were obtained. Finally, monthly “dummy” variables were included in the model to pick up any regular month-to-month variation in water usage that is perhaps independent of weather. These dummy variables would capture changing household behavior due to school schedules, vacations, and holidays.

[Table 4.10](#) provides three years of monthly observations on local weather variables. The historical “normal” monthly precipitation and average temperature were subtracted from the actual observations to create “deviation from normal” measures. While these measures did not add much quantitative value to the statistical work, they did provide insights into the recent weather history. In the 2005-2007 weather data for Louisville, the most important weather event was the drought during the summer of 2007. Note that during this time precipitation was well below normal while temperatures were above normal. The Palmer Modified Drought Index (PMDI) and the Palmer Drought Severity Index (PDSI) measure the cumulative effects of decreased precipitation and elevated temperatures through soil moisture. These indexes generally range from -6 to +6, with negative values denoting dry spells and positive values indicating wet spells. The PMDI and PDSI will have the same value during an established (long-term) drought or wet spell, but they will have different values during transition periods. As shown in [Table 4.9](#), the PMDI indicated a drought during the summer of 2007 but wet conditions during the summer of 2006.

Table 4.10
Monthly weather measures, Louisville Airport

		Precipitation (inches)		Temperature (F)		Palmer Drought Indexes	
		Total	Deviation from normal	Average daily	Deviation from normal	Modified (PMDI)	Severity (PDSI)
2005	January	5.07	1.57	38.40	4.70	3.60	3.49
	February	2.35	-0.95	41.60	4.30	2.39	-0.28
	March	3.85	-0.67	43.50	-2.60	1.78	-0.45
	April	3.56	-0.47	58.80	1.80	1.13	-0.13
	May	4.67	0.02	64.50	-1.50	1.14	-0.40
	June	2.46	-1.22	77.00	2.70	0.03	-0.91
	July	3.02	-1.04	79.60	1.30	-0.88	-1.02
	August	7.17	3.86	80.80	3.80	1.18	1.33
	September	1.32	-1.83	74.20	4.20	-0.44	-0.77
	October	0.82	-2.04	60.50	2.10	-1.48	-1.44
	November	3.53	-0.11	49.40	2.50	-1.67	-1.69
	December	2.04	-1.63	34.00	-3.40	-2.23	-2.03
2006	January	4.53	1.03	44.20	10.50	-2.07	-1.44
	February	1.82	-1.48	37.90	0.60	-2.32	-1.68
	March	5.21	0.69	47.00	0.90	-1.60	-1.95
	April	5.92	1.89	61.50	4.50	-0.39	-1.83
	May	3.44	-1.21	65.00	-1.00	-0.81	0.28
	June	6.11	2.43	73.70	-0.60	1.05	0.36
	July	4.53	0.47	79.30	1.00	1.19	0.35
	August	5.14	1.83	79.30	2.30	1.90	0.96
	September	9.79	6.64	66.60	-3.40	4.23	2.66
	October	4.31	1.45	55.70	-2.70	4.83	3.64
	November	2.91	-0.73	49.10	2.20	4.62	3.37
	December	3.14	-0.53	43.10	5.70	4.27	-0.21
2007	January	3.63	0.13	38.90	5.20	4.00	-0.18
	February	2.90	-0.40	30.00	-7.30	3.40	-0.49
	March	2.99	-1.53	55.30	9.20	1.44	-1.32
	April	4.55	0.52	55.60	-1.40	1.67	-1.21
	May	2.37	-2.28	70.50	4.50	-0.29	-1.73
	June	1.58	-2.10	77.30	3.00	-1.96	-1.83
	July	4.13	0.07	77.60	-0.70	-1.94	-1.59
	August	1.61	-1.70	85.10	8.10	-2.93	-2.30
	September	1.95	-1.20	76.40	6.40	-3.43	-2.66
	October	8.86	6.00	65.90	7.50	0.60	1.23
	November	2.44	-1.20	48.90	2.00	0.38	1.07
	December	7.52	3.85	42.00	4.60	2.60	2.05

Source: National Climatic Data Center, for weather reporting station 93821. PDSI for Kentucky Central region.

Demographic, Economic, and Housing Unit Influences

The influence of demographic, economic, and housing unit characteristics on household water usage can be revealed using three years of customer water usage records, the detailed household information from the mail survey (Spring 2007), and other housing characteristics available from the local property valuation database (December 2005). The demographic information of interest includes the number of persons in the household and their age distribution. Economic variables include measures of the number of residents that worked outside the home, the educational attainment of the primary wage-earner, and the assessed value and the square footage of the home (as proxies for income).

The demographic information obtained from the survey in spring 2007 represents a snapshot in time. There are some potential problems with mixing snapshot observations from survey data with water-usage and weather data over the three-year, local-use study. Household characteristics may have been different in 2005 than in 2007, and certainly any children in the household would be three years older and possibly fall into a different age class in the model. The household may have added a water-using appliance, such as a hot tub, at the end of the period that was not in service to explain water usage at the beginning of the period. However, by expanding the timeframe, information is available on month-to-month changes in household water usage, obtaining statistical degrees of freedom to more tightly estimate the coefficients in the model.

Water-Using Appliances

Many utilities have actively promoted the use of water-conserving fixtures as a method to reduce household water use. While these fixtures are believed to reduce water usage, there has been limited work to validate the claims or to investigate whether customers are compensating for the lack of flow through other means, such as longer showers. Alternatively, swimming pools and spas are believed to increase household water use, and they also are on the rise. The influence of household water-using appliances was incorporated into the statistical model by determining the penetration of these units into the housing stock. The mail survey posed specific questions regarding water-using appliances, including the number and type of tubs and showers, the type of outdoor watering used if any, and whether the customer had a swimming pool or an outdoor hot tub or spa.

Local-Level Regression Model

Once the variables believed to influence household water usage were identified and measured, an Ordinary Least Squares (OLS) statistical model was developed to assess the influence of each on consumption. The model was estimated in stages, progressively adding groups of variables, to reveal any sensitivity to coefficient estimates as the model broadened. In this fashion, as more variable groups were added, the model became more complex. Ultimately, the model included weather, demographics, economics, indoor appliances, and outdoor water features variables.

Table 4.11
Model variable descriptive statistics

	Minimum	Maximum	Mean	Standard Deviation
Average daily water usage	0.00	1101.69	144.89	99.95
Average monthly precipitation	30.00	85.10	59.12	15.80
Average monthly temperature	0.82	9.79	3.92	2.05
Average Palmer Modified Drought Index	-3.43	4.83	0.64	2.33
Total number of residents	1.00	7.00	2.26	1.16
Adults	1.00	5.00	1.88	0.75
Teens	0.00	2.00	0.13	0.41
Grade-schoolers	0.00	3.00	0.15	0.47
Pre-schoolers	0.00	2.00	0.04	0.22
Babies and toddlers	0.00	3.00	0.06	0.31
Education level of primary wage earner (index)	0.00	6.00	3.17	1.30
Workers	0.00	5.00	0.99	0.88
Year home built	1900	2005	1962	21.38
Home built after 1991 (1,0)	0.00	1.00	0.10	
Assessed value of home, 2005 (\$000)	\$28.80	\$628.52	\$131.73	\$64.86
Square footage of home (000)	0.49	5.69	1.52	0.64
Bathtubs with showers (count)	0.00	5.00	1.22	0.61
Bathtubs only, no showers (count)	0.00	5.00	0.16	0.45
Showers only, no bathtub (count)	0.00	2.00	0.34	0.50
Top-loading washing machine (1,0)	0.00	1.00	0.92	
Front loading washing machine (1,0)	0.00	1.00	0.07	
Water outdoor landscaping (1,0)	0.00	1.00	0.57	
Swimming pool (1,0)	0.00	1.00	0.08	
Outdoor spa (1,0)	0.00	1.00	0.05	

Panel on 293 customer, monthly water usage data for 2005 through 2007, with total of 10,586 observations

During the model development, twenty-six variables were grouped into six “bins” and were assessed over seven models. Table 4.11 provides descriptive statistics on all variables used. Although many of the variables and bins created are self-evident, a discussion of the more complex variables is presented in this section.

A dummy variable was created to indicate whether the home was built after 1994 and therefore likely to have water-conserving appliances. Houses built in 1994 and after are assumed to have the more modern appliances, reflecting federal requirements for manufacturers imposed in 1993. It is possible, however, that houses built before 1994 may have been remodeled and thus would follow trends associated with newer construction. Several analyses were conducted to assess the influence of remodeling with respect to water usage, but the results were not definitive due to household demographics and other factors changing during the post-1994 period. For example, a home built in 1950 might have been remodeled (and expanded) in 1995 when a subsequent owner’s children started attending school. Water-conserving appliances would have been installed, but water usage could have risen because there were more water-users (and possibly more bathrooms and other appliances) in the home. Hence, for this model, only a simple measure of house vintage was included.

House vintage also can be an indicator for other non-observable variables. Neighborhoods tend to attract residents with particular tastes in common. For example, new

subdivisions tend to attract families with school-age children, and neighborhoods full of very old homes tend to attract artists, students, and handymen, who are often unmarried. Neighborhoods full of homes built in the 1930s to 1950s tend to be populated by a mixture of retirees and young couples looking for starter homes. In other words, location may matter in ways that are not directly measured by the survey results. Because neighborhoods tend to be defined by homes built during a particular era, a proxy measure of neighborhood is the age of the home. The statistical model thus includes the year in which the home was constructed as another explanatory variable.

The square footage of the house and its assessed value were initially included in the model variables. Both are presumed to be highly related to household income, since housing is a normal good and people on average will consume greater housing as their income rises. Housing quality can be inferred by calculating value per square foot. This could more precisely measure the quality of construction, taking into better account that lower-income family units may live in large, poorly-constructed homes and higher-income family units might live in smaller but very well-constructed homes. However, the value-per-square-foot measure was not statistically significant in any model estimated, whereas the square footage and assessed value measures were consistently significant.

Because water-using appliances are believed to have a great influence on household water consumption, it was important that the survey adequately capture the range and variety of fixtures within the community. While the survey produced a rich database on all the water-using appliances in each home, it was exceedingly cumbersome to include all permutations and combinations in a causal model of daily household water usage. The number and types of appliances in a home are highly correlated with each other and primarily a function of household income and demographics. For example, a large family with a high income will likely buy a large house with many bathrooms and very modern kitchen and laundry appliances. However, there are variations in bathing and clothes-washing preferences among households that are independent of income. Some people prefer baths to showers or front-loading to top-loading clothes washers. Since water usage varies substantially among these choices, only the more common household appliances were included in the regression models.

The outdoor water usage group contains three variables, including: whether the residents water landscaping, whether they have a swimming pool, and whether they have an outdoor spa or hot tub. The survey asked the methods by which the households watered their landscapes. However, the more detailed the question, the fewer the number of responses available to estimate the effects on total household water usage. For example, only eight persons in the sample reported an automatic timer on their in-ground irrigation system. Eight responses are not enough to reliably use in a statistical model. Hence, only the questions for which information was generally complete throughout the full data set were included.

In experimenting with a household fixed effects model, it was observed that the coefficient estimate on the number of teens in the household changed from a positive to a negative number. This trend suggested that there was something unobservable that was contributing to water usage but was inversely related to having teenagers in the home. Since many families move, often to a new home, when children enter middle or high school, it is important to account for the interaction effect of variables surrounding teenagers. To test for a possible teenage interaction effect, interactions term between the number of teens and the age, square footage, and value of the home was included in a separate model.

LOCAL USAGE RESULTS

As discussed, a progression of seven models was used to assess the influence of each factor on household water usage. The seven models were sequentially created and can be found in [Table 4.12](#), left to right, model numbers (1) through (7). By adding another bin of variables to each progressive model, the stability of each variable between models could be assessed. Model (7) provided estimates on all variables, including the interaction terms for teenagers and housing characteristics.

As expected, weather was an important determinant of water usage, and the magnitude of the effects was very stable across models. Monthly precipitation, however, was not independently important, with presumably the importance of moisture picked up by the drought index. A one-unit increase in the PMDI, indicating wetter soil conditions, led to 2.6 gallons less water used per customer per day. A one-degree increase in temperature led to about 0.7 gallons more in average daily water usage. Note that there is a 51-degree swing between the minimum and maximum average daily temperature in the data set, and hence the model predicts a swing of approximately 35 gallons per day in water usage over the seasons.

The demographic variables shed new light on household water usage in Louisville. Model (2) is the simplest specification, controlling only for the total number of residents, not their ages. Thus, the average water usage per person, ignoring the age profile, is about 36 gallons per day. In the remaining models (3) through (7), more detailed age variables are included, and the number of adults, teens, and grade-schoolers in a home has clear independent effects on water usage. In model (6) each adult contributes about 36 gallons and a grade-schooler about 18 gallons of water demand. Based on the model (6), each preschooler adds about 10 gallons per day to household water demand, though the coefficient estimate is of marginal statistical significance. Contrary to Lyman's (1992) work, the model estimates that the number of babies and toddlers in the home has no independent effect on water usage.

In model (7), the interaction terms between teenagers and housing characteristics were particularly interesting. The coefficients obtained in model 7 measure the strength of interaction between variables only and thus should not be considered as a measure of usage. All housing parameters were statistically significant, indicating that teenage water usage varies with the age, size, and value of the home. This is consistent with the casual observation that many families choose to move to a larger and more modern home when children enter the middle school and high school years. Thus, from the coefficient estimates it is evident that teenagers in newer homes use less water than teenagers in older homes, but those in larger homes use more water than in smaller homes. As an example, a teenager in a 2,500-square-foot home built in 2005, valued at \$250,000, would use about 20 gallons less water per day than a teenager living in the average home. This difference is presumably due to the improved efficiency of water appliances in newer homes. However, only a few of the households in the sample reported teenage residents, and thus these results must be considered exploratory and tentative, inviting future research with a larger sample of households.

The number and characteristics of full-time workers in the home contributed to overall customer water usage. In model (6) each full-time worker in the home is estimated to increase, water usage by approximately 6.5 gallons. However, this variable is not as important as the number of residents in the household. The education level of the primary wage-earner is positively related to water usage and is highly significant statistically. Both of these variables, as

well as the value of the home, are proxies for household income. As incomes rise, households consume more water.

Results from model (6) suggest that newer, larger, and more expensive homes use more water on average than older, smaller, and less expensive homes. This is likely reflecting the higher incomes of those water customers, with more appliances and outdoor watering masking the fact that the newer homes have more efficient indoor appliances. A dummy variable was included for homes built after 1994 to determine if there is an independent downward shift in usage after the federal conservation laws went into effect. After controlling for size and value, homes built after 1994 use about 10 gallons per day less than those built before 1994.

Homes in the sample varied in value from \$28,800 to \$628,520, so the estimated coefficient implies that the most expensive home consumed 100 gallons per day more than the least expensive home. Homes in the sample varied between 494 and 5,687 square feet, and thus the model (6) estimated coefficient implies that the largest home used 86 gallons per day more water than the smallest home, after controlling for value.

An important result with respect to indoor water-using appliances was the effect of using bathtubs that do not have showers. On average, a bathtub-only fixture in the home led to an additional 14 gallons per day of water consumption. Homes that have only showers used nearly 8 gallons less than average. Top-loading clothes-washing machines also increased average daily water usage relative to homes with front-loading or no washing machines.

Finally, in models (6) and (7) it is clear that outdoor watering and the presence of a swimming pool or spa/hot tub have large impacts on household water usage. Landscape watering adds 10 gallons per day, a swimming pool adds 65 gallons per day, and an outdoor spa or hot tub adds 13 gallons per day. To put these estimates in perspective, for the average customer, landscape watering would amount to 3,300 gallons annually, a pool would require 23,700 gallons, and an outdoor spa 5,400 gallons. These numbers represent 6, 45, and 10 percent, respectively, of total average household water usage in a year.

Table 4.12
OLS models of average daily water usage for the Louisville Water Company
 OLS Models of Average Daily Water Usage, 293 Randomly Selected Residential Customers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
BIN 1	Average monthly precipitation (inches)	-0.0380 (0.565)	-0.0740 (0.510)	-0.0729 (0.500)	-0.0882 (0.495)	-0.0718 (0.475)	-0.0962 (0.459)	-0.109 (0.458)
	Average monthly temperature (^o F)	0.767** (0.308)	0.750*** (0.278)	0.745*** (0.273)	0.737*** (0.270)	0.739*** (0.259)	0.728*** (0.251)	0.724*** (0.250)
	Palmer Modified Drought Index (-4 to+4)	-2.554*** (0.496)	-2.589*** (0.448)	-2.613*** (0.439)	-2.612*** (0.435)	-2.594*** (0.417)	-2.599*** (0.403)	-2.599*** (0.402)
BIN 2	Total number of residents	35.55*** (0.742)						
	Adults			45.72*** (1.124)	43.29*** (1.234)	38.09*** (1.207)	36.37*** (1.205)	36.61*** (1.210)
	Teens			48.83*** (2.097)	46.90*** (2.081)	34.48*** (2.062)	32.24*** (2.039)	1230*** (188.1)
	Grade-schoolers			28.60*** (1.827)	24.13*** (1.843)	20.69*** (1.777)	18.69*** (1.737)	17.24*** (1.745)
	Pre-schoolers			5.919 (3.975)	7.629* (3.957)	13.22*** (3.822)	10.62*** (3.727)	6.715* (3.745)
	Babies, toddlers			2.107 (2.774)	-3.168 (2.775)	-4.436* (2.686)	1.113 (2.620)	1.894 (2.614)
	Number of workers				5.404*** (1.093)	6.694*** (1.055)	6.521*** (1.035)	6.508*** (1.034)
BIN 3	Education level (Education indices)			7.883*** (0.666)	3.400*** (0.660)	3.593*** (0.654)	3.655*** (0.653)	
	Year home built (Year)				0.226*** (0.0515)	0.176*** (0.0529)	0.325*** (0.0562)	
	Built after 1994 (no, yes)				-11.66*** (3.492)	-10.42*** (3.503)	-13.19*** (3.548)	
	Assessed value of home (\$)				0.181*** (0.0324)	0.105*** (0.0338)	0.146*** (0.0375)	
	Square footage of home (sq ft)				20.34*** (2.871)	23.96*** (2.822)	17.05*** (3.212)	
	BIN 4	Bathtubs with showers (number)					-2.891 (1.806)	-4.618** (1.833)
Bathtubs only, no shower (number)						11.91*** (2.140)	14.36*** (2.406)	
Showers only, no bathtub (number)						-7.622*** (1.948)	-8.209*** (1.948)	
Top loading washing machine (no, yes)						9.635** (4.126)	9.315** (4.127)	
Front loading washing machine (no, yes)						-0.814 (4.339)	2.203 (4.361)	
Water outdoor landscaping (no, yes)						9.684*** (1.666)	9.090*** (1.675)	
BIN 5	Swimming pool (no, yes)					65.19*** (2.982)	64.80*** (2.974)	
	Outdoor spa (no, yes))					13.62*** (3.828)	14.89*** (3.837)	
BIN 6	Interaction: Teens x Year Home Built						-0.620*** (0.0968)	
	Interaction: Teens x Home Square Footage						22.07*** (5.664)	
	Interaction: Teens x Assessed Value of Home						-0.121* (0.0664)	
	Constant	109.5*** (13.03)	29.22** (11.88)	13.09 (11.71)	-11.35 (11.78)	-484.5*** (100.8)	-394.1*** (103.4)	-679.2*** (109.5)
	Observations	10146	10146	10146	10146	10146	10146	10146
	R-squared	0.036	0.214	0.246	0.260	0.318	0.364	0.368

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

All models include monthly dummy variables, not shown.

Local study comparisons

While there have been several studies that physically measured the type and volume of water usage in individual homes (1984 HUD study, 1999 Water Research Foundation Residential End Use Water Study (REUWS) and a series of AquaCraft conducted end use studies), there has been few end use studies conducted in the water rich regions of the Midwest. The end use study completed for Louisville Water Company customers allowed for comparison of a water rich utility to previously conducted end use studies. Providing practitioners from water rich regions with a baseline for single-family customers' daily usage. Figure 4.11 compares the average daily indoor household usage by components for the REUWS, Denver Water and Louisville Water Company studies.

When comparing the Louisville and Denver households daily indoor water usage to the baselines established with the REUWS households, both communities consistently used less water than in the REUWS Study. This is attributed to two contributing factors: the lower number of people per household in both studies and higher penetration rates of low flush toilets. Table 4.13 compares the number of people per household for the three studies (2.7 for the REUWS compared to 2.5 for Denver Water and 2.24 for Louisville). Figure 4.12 compares the penetration rates of Low Flush Toilets between the three studies. (9 percent for the REUWS, 20% for Denver and 17% for Louisville).

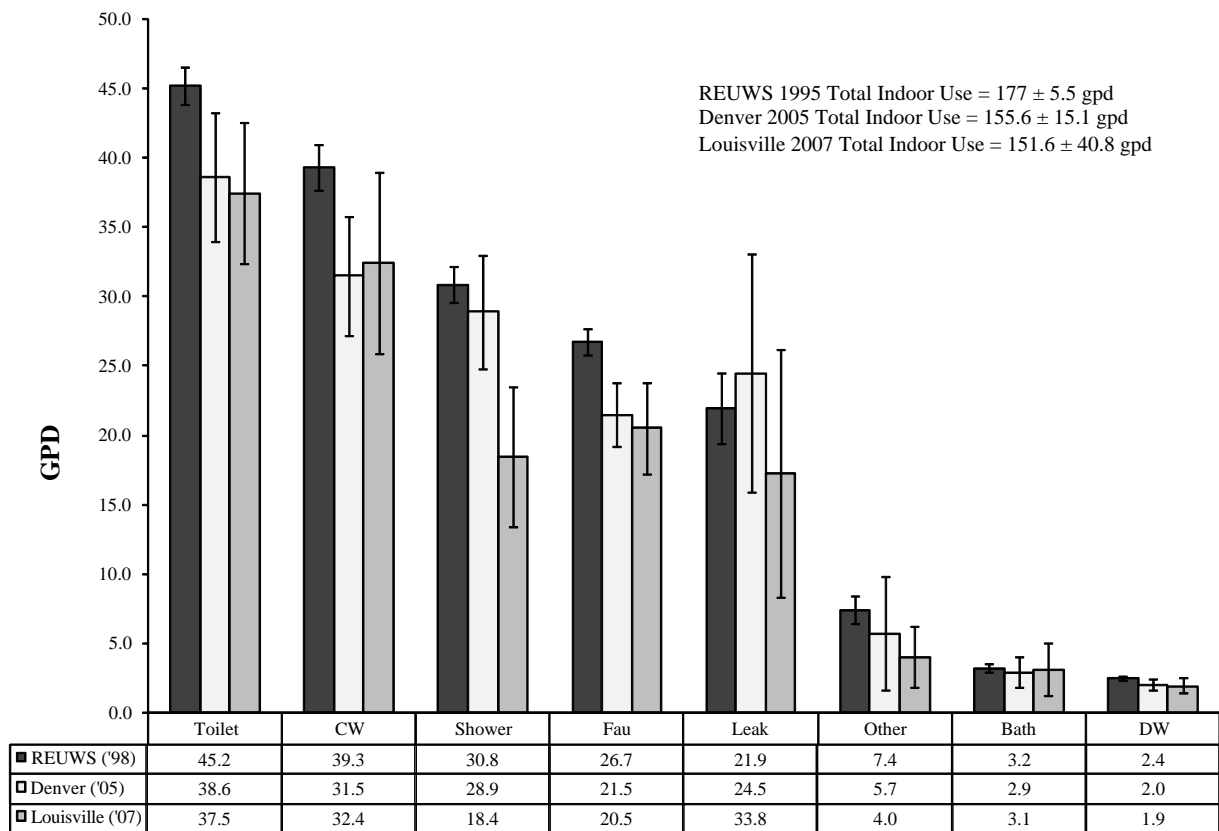


Figure 4.11. Comparing average household indoor use of the REUWS, Denver Water and Louisville Water Company end use studies

Table 4.13
Comparing the number of people households for the REUWS, Denver Water and Louisville Water Company end use studies

	Number of people per household
REUWS('98)	2.7
Denver ('05)	2.5
Louisville ('07)	2.24

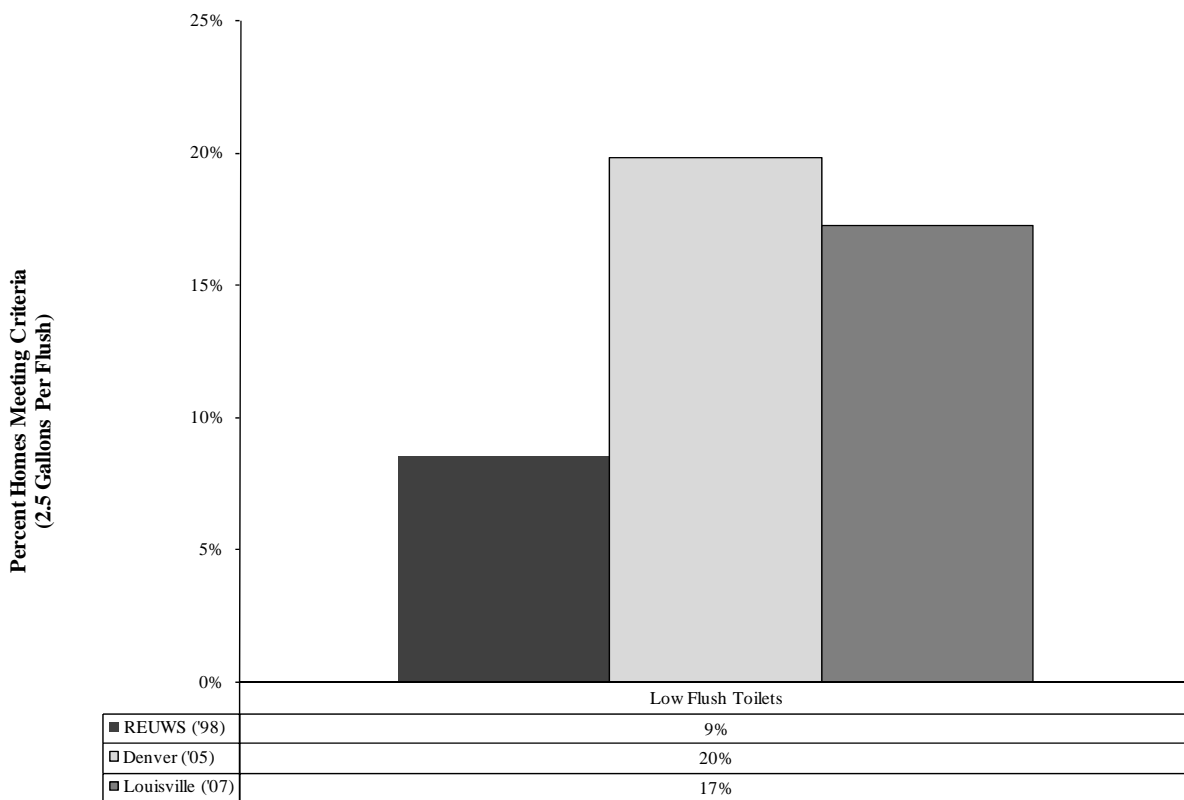


Figure 4.12. Comparing the penetration rates for low flush toilets for the REUWS, Denver Water and Louisville Water Company end use studies

Effect of Low-Flow Appliances on Water Usage Per Customer

A contributing factor to declining household usage is the increasing presence of water efficient fixtures and appliances in homes. In order to estimate what fixtures will be in place in each home in the future, it is necessary to estimate what percentage of each type of fixture/appliance is available on the market in a certain time, and at what rate that new technology is installed in the home, either due to new dwellings being constructed, or renovations. The adoption of new technology in the market is often defined by 'S' curves (Dent 1993).

The “S” curve adoption of new technology describes that after an initial period of innovation, about 10% of the market will use the new technology. This part of the curve is marked “A” in Figure 4.13, followed by a period of large growth in which, fairly quickly, 90% of the market will use the new technology (“B”). The maturity stage is when the residual people adopt the technology (“C”). Dent indicates that much of this 'S' curve is driven by a reduction in cost of the technology due to improved production and economies of scale (Griffin 1998).

For the Louisville end use study the researchers employed Aquacraft and their flow signature software to determine the penetration rates of low-flow appliances, as well as water usage per day, in the random sample of homes studied. The detailed results from the data-logging project shed new light on one of the causes of declining water usage among LWC households.

Based on the usage data collected, toilets, showers, and clothes washers are the largest indoor users of water. The TraceWizard software can distinguish between low-flow water conserving toilets, showerheads, and washing machines and older versions of these appliances. Table 4.14 shows the amount of water used by toilets, showers, and washing machines in those households with and without water conserving versions of those appliances.

On a per capita basis, the difference in water usage between low-flow and older appliances is greatest for toilets, with households using low-flow toilets consuming 11.5 gallons per day less per person than households not using low-flow toilets. But since many more households have low-flow showerheads than toilets, low-flow showerheads are currently saving more water per household than toilets. This will change as more low-flow toilets replace older ones, and by 2040 it is expected low-flow toilets to be saving more than twice the amount of water as showerheads compared to 1994 usage.

These penetration rates and water usage rates can be applied to the universe of LWC residential customers in order to make an inference about how much water households would be using if there were no low-flow appliances. LWC had 245,729 residential customers in 2007, with average daily usage of 194.9 gallons. Applying the results from the table would raise average daily water usage to 210.8 gallons, an increase of 8.2 percent. Interpreted alternatively, over a period of approximately 14 years low-flow appliances had accounted for a 7.6 percent reduction in household water use by 2008. This translates into an annual average “conservation” effect of 0.56% per household per year, compounded. This phenomenon helps explain how average household usage has fallen over the period even as higher incomes led to larger homes and more outdoor water usage.

Figure 4.14 compares the penetration rates for high-efficiency fixtures from the REUWS, the Denver Water and LWC study. Within the Louisville sample of households, the penetration rates measured for ultra low flow toilets (≤ 2.0 gpf), low flow shower heads (2.5 gpm) and water efficient clothes washers (30 gpl) were measured at 17 percent, 79 percent and 12 percent respectively. These penetration rate for the ULF toilets and water efficient cloth washers are similar to the penetration rate observed in the 2005 Denver Water study, 19.8 percent and 19 percent respectively. The penetration rates for low flow showerheads were not included in the Denver Water study, although the typical flow rate for showers was 2.21 gpm. Based upon Dent’s penetration rate curve, Louisville is still in between the innovation and maturity period for the ULF toilets and efficient cloth washers.

With the penetration rates measured in the 1999 REUWS study serving as a benchmark, it is interesting to examine the penetration rates measured in studies that are more recent. Comparing these rates serves as a qualitative measurement for the rate of penetration for high-efficiency fixtures in the Denver and Louisville households over the past decade. The penetration of high efficiency toilets, the largest component of indoor water usage, was nearly double in the Denver and Louisville sample households when compared to established REUWS benchmarks.

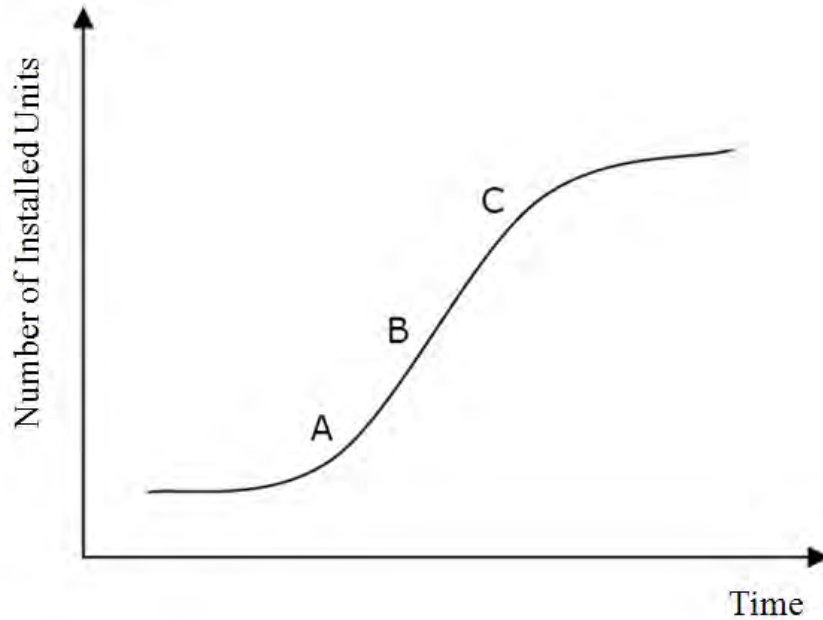


Figure 4.13. The natural adoption curve for a typical technology

Table 4.14
Data logging results for Louisville Water Company Customers

	Percent of Households using Low-flow Appliances	Persons per Household (-)		Appliance Usage Events per Day (-)		Water Usage per Household per Day (gallons)	
		Low-flow	Other	Low-flow	Other	Low-flow	Other
Toilets	17%	2.3	2.2	10.4	11.7	18.5	43.6
Showers	79%	2.4	2.0	1.5	1.5	21.8	26.6
Clothes washers	12%	2.1	2.3	1.2	0.8	26.7	33.9

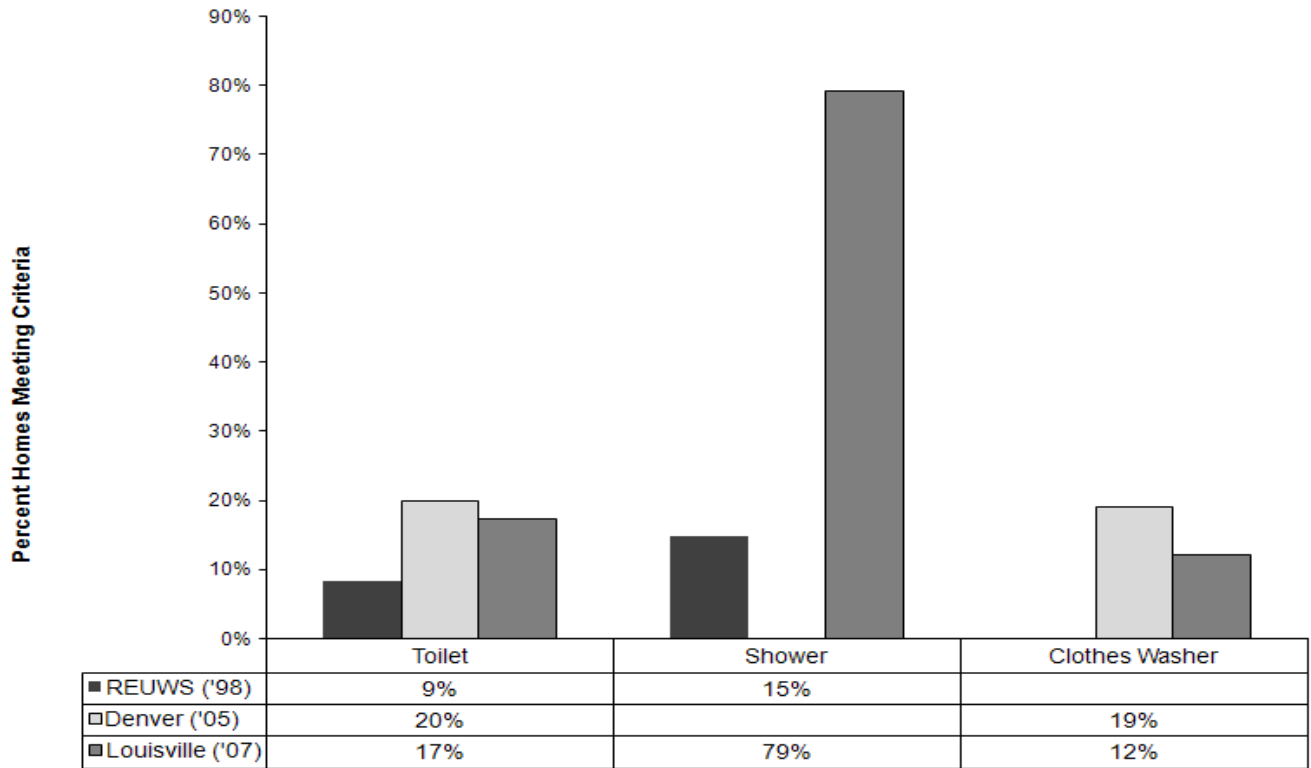


Figure 4.14. Comparing penetration rates for high-efficiency fixtures between studies

IMPLICATIONS FOR THE LOUISVILLE WATER COMPANY

With the development of the usage model specific to the Louisville Water Company, it is possible to assess and interpret the influence of the variables with respect to local conditions. Historically, water usage per customer in the Louisville area peaked in the late 1980s, with a subsequent negative trend (exclusive of extreme weather events, such as the droughts of 1999 and 2007 and the wet periods of 1992 and 2006). A linear trend through the data since 1990 indicates that average daily usage has been declining by 1.25 gallons per day per household. This amounts to a 21-gallon-per-day reduction in usage per customer over the 17 years shown, a decline of 10 percent. [Table 4.15](#) provides a breakdown of the key factors and their estimated influence on Louisville Water Company households.

During this same period, the average number of people per household in Jefferson County fell from 2.52 to 2.38. From the water usage model the average person used about 36 gallons per day. This reduction in household size would lead to a decline in average household water usage of five gallons [(2.52 – 2.38) * 36] per day over the period. Demographic changes thus explain approximately one-fourth of the total 21-gallon decline in usage per household.

While changing demographics can account for a portion of the declining water usage, a variety of other variables contributes to rising water usage. Within the Louisville area, there has been a slow but steady increase in educational attainment since 1990, raising the value of the education index from 2.45 to 2.81. Multiplied by the coefficient in Model (6), this implies a rise in daily water usage of 1.3 gallons.

Similarly, home values in Jefferson County have risen from \$120,100 to \$144,600 (in constant 2007 dollars) over the period, implying an increase in water usage of 3.5 gallons per day. There is no direct local measure of home square footage over time; however, the Census

Bureau provides a national measure. It shows average square footage rose from 2,155 to 2,581 between 1990 and 2007. Applying the regression coefficient from Model (6) yields a growth in average daily water usage of 0.6 gallons due to larger home size. Thus, income-related measures suggest that the average household has increased water usage by 5.4 gallons per day.

The decline in number of residents per household is clearly an important factor in falling water consumption per residential customer. However, the negative consequences of smaller households appears to be more than offset by the positive consequences of higher household incomes. Higher incomes have led to larger homes, with more water-using appliances, and more landscape irrigation. Thus, the net decline in water usage per household appears to be primarily due to the steady penetration of low-flow appliances over the past two decades.

Table 4.15
Breakdown of key factors on Louisville Water Company household usage

	1990	2007	Change
Louisville (gallons per day)	208	187	-21 gallons
Palmer Modified Drought Index	0.29	0.75	-2.6 gallons
People Per Household (Census)	2.52	2.38	-5.0 gallons
Educational index (Census)	2.45	2.81	+1.3 gallons
Average home value (Census)	\$120,100	\$144,600	+3.5 gallons
Home size (sq ft)	2,155	2,581	+0.6 gallons
Conservation Fixtures (implied)			-18.8 gallons

CHAPTER 5 CONCLUSIONS

OVERVIEW

This research investigated trends in household water usage in North America. Many water utilities have noted that residential water usage has fallen as the number of residents and households continues to grow and as household incomes continue to rise. A variety of theories have been posited to explain the declining usage, including wet weather; household size and type; water-conserving fixtures and appliances; changing demographics; customer classification anomalies; and price increases. However, to date, no definitive statement could be made as to the validity of these theories or the amount each contributes to residential water-usage decline. This study analyzed these components and their contribution to national, regional, and local water-usage trends.

The study began with collecting residential water-usage data from randomly selected utilities across North America. When controlling for weather and other variables, the evident decline in residential usage was pervasive. National and regional components of the study found that residential usage per customer has decreased more than 380 gallons annually in the last three decades. When compounding this estimated decline over the past 30 years, the total decline is approximately 11,400 gallons per customer. Within the regional component of the study, case studies were compiled to examine the underlying factors affecting partner household water usage. Household water usage trends varied widely among the partner utilities. This can be contributed to a series of underlying site-specific factors; housing stock age, local demographics and stressed water supplies. These factors hindered the study's efforts to group utilities based upon similar usage trends.

To investigate the causes of this decline, a local study of statistically representative households was conducted. Statistical modeling and data logging exercises examined the relationships among socioeconomic factors, demographic factors, water-using appliances, behavior patterns, significant water features and types of irrigation, and residential water consumption. Adjusting for weather, water usage per LWC customer fell from 208 to 187 gallons per day between 1990 and 2007, a decline of 21 gallons. Demographic factors can account for a decline of five gallons, while income-related factors suggest an increase of about seven gallons. Low-flow appliances are believed to account for the rest of the decline.

The 2006 Denver Water "Post Post Drought Changes in Residential Water Use" study produced similar results. The study assessed how single-family water demands have changed in their community between the mid-1990s and 2005. Denver participated in the 1999 REUWS and subsequently went through a drought and extensive conservation efforts. Analysis of indoor use showed a reduction of approximately 7,000 gallons per year, which represents an 11% reduction in indoor use, from 173 gpd to 156 gpd. The study estimates that one third of the 11% decrease was due to changes in demographics and 7% was due to efficient fixtures and appliances (Denver 2006).

WATER-USAGE TRENDS

To appropriately identify the source of declining water sales, it was necessary to assess overall water-usage trends at the national, regional and local levels. By separating the problem into three distinct data sets, it was possible to isolate specific variables and assess their contributions to declining usage.

National Trends

The changing national trends were quantified by surveying and reviewing publicly available information from 602 utilities. This information helped to define general trends within the industry and served as a means to segregate water-use patterns into discrete regions on a basis other than geographical characteristics. National water-usage trends are shown in [Figure 5.1](#), and a pervasive decline in water usage per residential customer across the United States and Canada is evident. Statistical analyses were conducted on the data sample ([Table 5.1](#)) and concluded that on average, after correcting for localized drought severity, there has been a 0.44 percent decrease of water usage per household per year since 1975. While the estimated annual decline in water usage, using the coefficient on Time from the last column, amounted to only 0.44 percent of average annual usage, the long-term consequences of the reduced water usage are important. Compounded over 30 years, the decline amounts to 13.2 percent and implies that a customer would use 11,673 gallons less water in the 2008 billing year than an identical customer did in 1978.

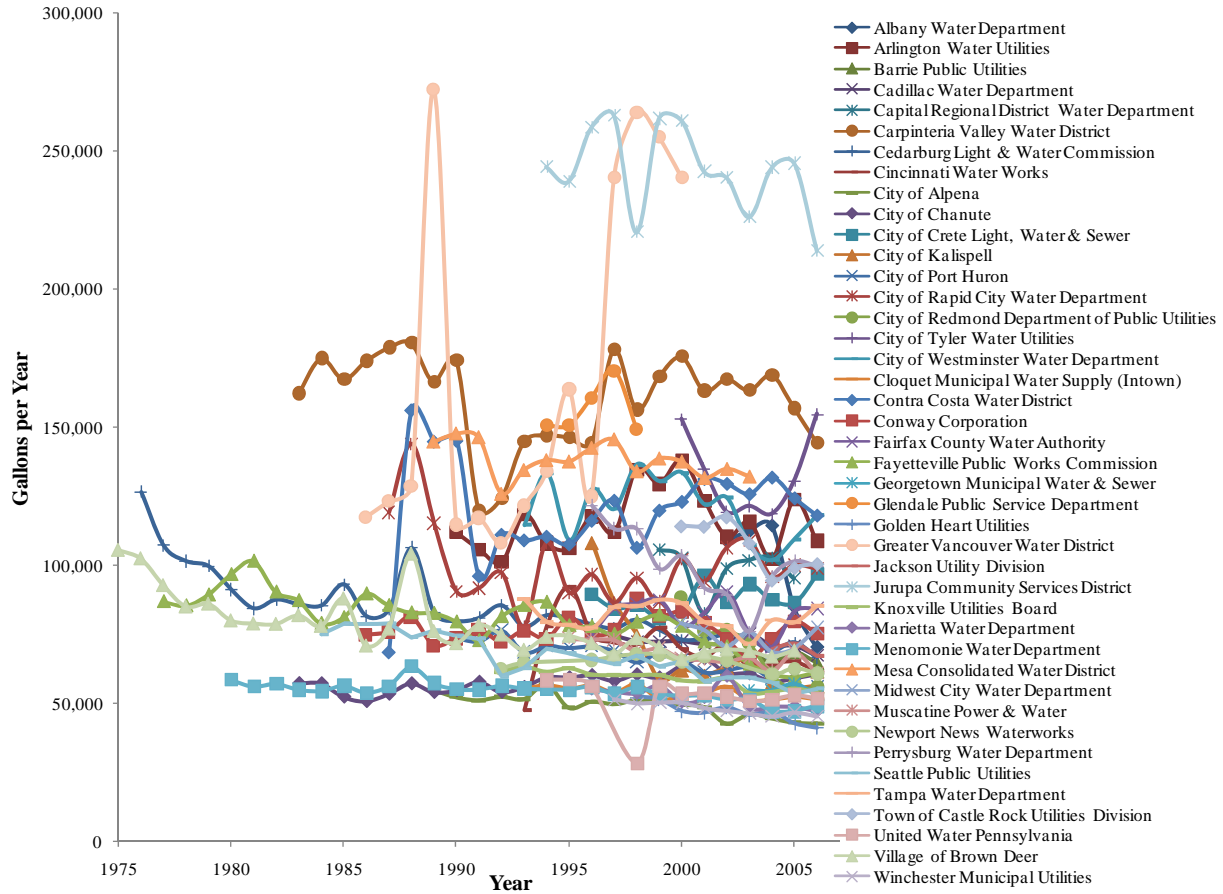


Figure 5.1. National historic residential usage trend

Table 5.1
Annual water usage per single-family residential customer
 43 Water Utilities, Mixed Time Periods, 1975 to 2006

Variable	(1) OLS	(2) Panel, with Fixed Effects	
Precipitation zone	-15,233*** (1,003)		
Temperature zone	14,514*** (1,516)		
Ownership type	3,821 (6,869)		
Water source	7,923*** (3,018)		
Number of customers	-0.0887*** (0.0296)	-0.0155 (0.122)	
Percent industrial	-4,908*** (1,121)		
Drought index	-2,256*** (695.8)	-738.8** (333.5)	-741.3** (332.6)
Drought index squared	536.7** (237.3)	123.0 (113.4)	122.7 (113.3)
Time	-200.5 (176.4)	-380.8*** (111.0)	-388.5*** (93.15)
Constant	138,650*** (9,068)	96,758*** (3,547)	96,411*** (2,269)
Observations	605	605	605
R-squared	0.484	0.038	0.038

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Regional Trends

While characterization of national water usage can provide a broad overview of general water-usage trends, water usage also is significantly affected by regional characteristics. Although regional characteristics commonly refer to geographic or climatic boundaries, it also was possible to designate regions based on community characteristics, including: size, city age, growth patterns, conservation awareness, rate structure, and water supply. The national level data were used to assess the importance of each factor, and it was determined that critical regional variables to consider include: precipitation zone, temperature zone, water source, number of customers, percent industrial, and drought index.

Eleven utilities were selected to represent the wide variety of regional characteristics. As shown in [Figure 5.2](#), the water-usage trends of the 11 utilities followed the general decline quantified in the national-level analysis. The variability within each utility system, however, is attributable to specific regional characteristics that affect residential consumption. To assess the influence of precipitation zone, temperature zone, water source, number of customers, percent industrial, and drought index on regional water-usage patterns, the 11 utilities provided detailed information with respect to billing records, financial practices, and operating procedures. As with the national panel, both ordinary least squares and the fixed effects regression models were estimated. Coefficient estimates for the included variables are shown in [Table 5.2](#).

The results for the panel of regional partners are similar to that for the national panel. Note that the estimated coefficient on the Time variable (-381.0) in the fixed effects model is almost identical to that in the national model (-388.5), providing some confidence that the annual trend in water usage is indeed pervasive and of similar magnitude around the United States and Canada.

Other more qualitative components of the regional case studies provide insight into various issues and questions, including the effects of changing residential water consumption on a utility's system designs, revenue, conservation practices, and water quality. The case studies considered geography, population, age of the city, and how the utilities handled a multitude of issues and competing factors. The case study reports, found in the appendix, allow utilities to access information from utilities facing experiences similar to their own. Utility managers may extrapolate from the data the most salient points to assist them with making more informed planning decisions.

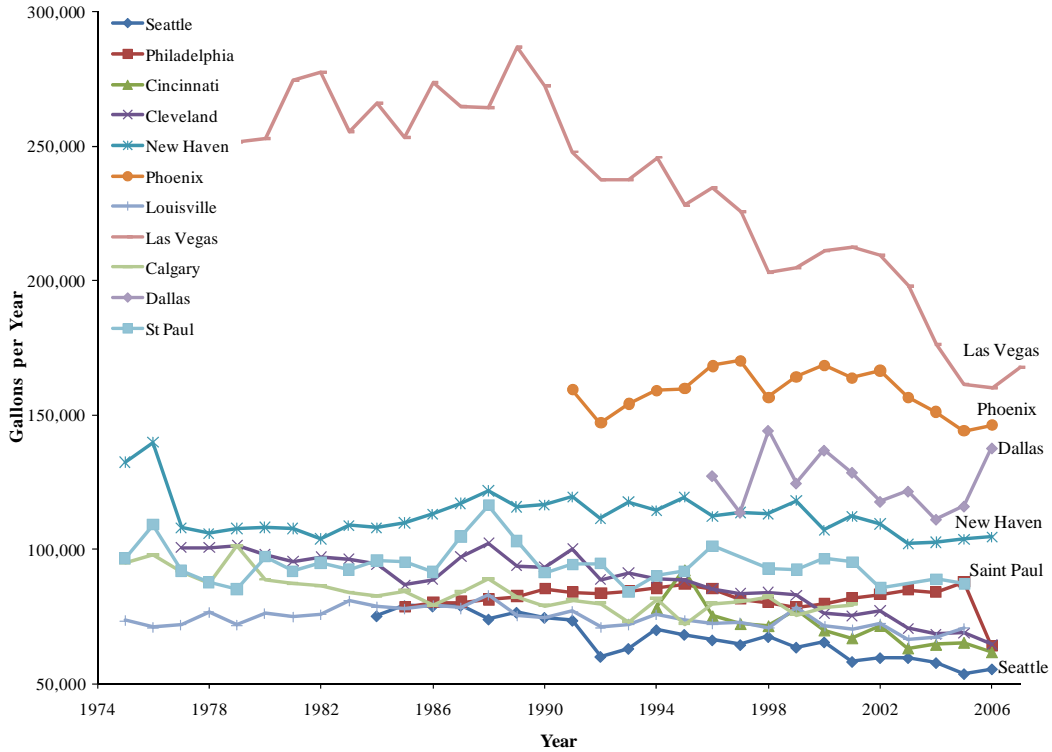


Figure 5.2. Regional historic residential usage trend

Table 5.2
Average water usage per single-family residential customer
 11 large urban water utilities, mixed time ranges from 1975 to 2007

Variable	(1) OLS	(2) Panel Model with Fixed Effects
Precipitation zone	-7,195*** (844.3)	
Temperature zone	16,682*** (1,818)	
Water source	-54,852*** (2,956)	
Number of customers	-0.0401*** (0.0110)	-0.0463** (0.0182)
Drought index	-2,375*** (698.7)	-1,562*** (245.9)
Drought index squared	291.3 (230.2)	101.7 (78.51)
Time	-427.9*** (151.2)	-381.9*** (61.70)
Constant	154,502*** (7,973)	103,830*** (3,371)
Observations	264	237
R-squared	0.614	0.370

Standard errors in parentheses
 *** p<0.01, ** p<0.05, * p<0.1

Local Trends

The national and regional studies confirm and quantify the long-term trend toward less water usage per residential customer but do not include sufficient detailed local data to assess the causes of the decline. An end-use study of the Louisville Water Company customers was performed to assess the influence of specific socioeconomic and demographic characteristics on water usage. To assess water usage of individual households, data loggers were attached to 60 residences to passively record water-using activities. This information was paired with household survey data, water billing records, and real estate assessment information to form a rich data set for assessing the influence of demographic factors, house vintage, home value, water-using appliances, behavioral patterns, lot size, significant water features, and types of irrigation. OLS regression models were estimated to quantify the influence of each variable and the results are presented in [Table 5.3](#).

Based on the statistical analysis, the influence of each variable on water usage can be determined. For example, as shown in specification (6), homes built after 1994 use on average 10.4 fewer gallons of water per day than houses constructed prior to that date. Similarly, homes with swimming pools use 65.2 gallons per day more water.

Two important determinants of water usage are the number of residents in the household and the water fixtures and appliances in the home. The steady decline in household size in the Louisville Water Company service area appears to account for at least one-fourth of the decline in average water usage over the past two decades. However, other variables in the model suggest increasing water usage over time. Higher incomes have led to larger and more expensive homes, with more landscape irrigation, and these forces appear to more than offset the negative effects of fewer people per household.

The penetration of water efficient fixtures and appliances into the market is the other major determinant in household water usage. Within the Louisville household sample 17 percent of the homes contained ULF toilets while 12 percent contain efficient clothes washers. These two components constitute over 50 percent of daily household water consumption. The introduction of low-flow toilets, showers, and clothes washers have had a significant impact on residential water usage, accounting for a decline of about 16 percent in average daily usage over approximately the last 20 years.

Table 5.3
OLS variable model for local level study

OLS Models of Average Daily Water Usage, 293 Randomly Selected Residential Customers

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	
BIN 1	Average monthly precipitation (inches)	-0.0380 (0.565)	-0.0740 (0.510)	-0.0729 (0.500)	-0.0882 (0.495)	-0.0718 (0.475)	-0.0962 (0.459)	-0.109 (0.458)
	Average monthly temperature (°F)	0.767** (0.308)	0.750*** (0.278)	0.745*** (0.273)	0.737*** (0.270)	0.739*** (0.259)	0.728*** (0.251)	0.724*** (0.250)
	Palmer Modified Drought Index (-4 to+4)	-2.554*** (0.496)	-2.589*** (0.448)	-2.613*** (0.439)	-2.612*** (0.435)	-2.594*** (0.417)	-2.599*** (0.403)	-2.599*** (0.402)
BIN 2	Total number of residents	35.55*** (0.742)						
	Adults			45.72*** (1.124)	43.29*** (1.234)	38.09*** (1.207)	36.37*** (1.205)	36.61*** (1.210)
	Teens			48.83*** (2.097)	46.90*** (2.081)	34.48*** (2.062)	32.24*** (2.039)	1230*** (188.1)
	Grade-schoolers			28.60*** (1.827)	24.13*** (1.843)	20.69*** (1.777)	18.69*** (1.737)	17.24*** (1.745)
	Pre-schoolers			5.919 (3.975)	7.629* (3.957)	13.22*** (3.822)	10.62*** (3.727)	6.715* (3.745)
	Babies, toddlers			2.107 (2.774)	-3.168 (2.775)	-4.436* (2.686)	1.113 (2.620)	1.894 (2.614)
	Number of workers				5.404*** (1.093)	6.694*** (1.055)	6.521*** (1.035)	6.508*** (1.034)
BIN 3	Education level (Education indices)			7.883*** (0.666)	3.400*** (0.660)	3.593*** (0.654)	3.655*** (0.653)	
	Year home built (Year)				0.226*** (0.0515)	0.176*** (0.0529)	0.325*** (0.0562)	
	Built after 1994 (no, yes)				-11.66*** (3.492)	-10.42*** (3.503)	-13.19*** (3.548)	
	Assessed value of home (\$)				0.181*** (0.0324)	0.105*** (0.0338)	0.146*** (0.0375)	
	Square footage of home (sq ft)				20.34*** (2.871)	23.96*** (2.822)	17.05*** (3.212)	
BIN 4	Bathtubs with showers (number)					-2.891 (1.806)	-4.618** (1.833)	
	Bathtubs only, no shower (number)					11.91*** (2.140)	14.36*** (2.406)	
	Showers only, no bathtub (number)					-7.622*** (1.948)	-8.209*** (1.948)	
	Top loading washing machine (no, yes)					9.635** (4.126)	9.315** (4.127)	
	Front loading washing machine (no, yes)					-0.814 (4.339)	2.203 (4.361)	
BIN 5	Water outdoor landscaping (no, yes)					9.684*** (1.666)	9.090*** (1.675)	
	Swimming pool (no, yes)					65.19*** (2.982)	64.80*** (2.974)	
	Outdoor spa (no, yes)					13.62*** (3.828)	14.89*** (3.837)	
BIN 6	Interaction: Teens x Year Home Built						-0.620*** (0.0968)	
	Interaction: Teens x Home Square Footage						22.07*** (5.664)	
	Interaction: Teens x Assessed Value of Home						-0.121* (0.0664)	
	Constant	109.5*** (13.03)	29.22** (11.88)	13.09 (11.71)	-11.35 (11.78)	-484.5*** (100.8)	-394.1*** (103.4)	-679.2*** (109.5)
	Observations	10146	10146	10146	10146	10146	10146	10146
	R-squared	0.036	0.214	0.246	0.260	0.318	0.364	0.368

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

All models include monthly dummy variables, not shown.

SUMMARY OF ANALYSES

To appropriately identify the source of declining water sales, it was necessary to assess overall water usage trends at the national, regional and local levels. By separating the problem into three distinct data sets, it was possible to isolate specific variables and assess their contributions to declining usage. In this fashion, rigorous statistical analysis techniques could be applied to the data and quantifiable influence factors could be determined. Ultimately, these influence factors could be used to project water-usage trends into the future given specific changes in specific variables. Depending on the range and scope of the question, either the national, regional, or local data set is appropriate for the analysis.

The overall goals of the research investigation can be summarized into three categories: 1) understanding residential water-usage behavior patterns and trends; 2) assessing the impact of those patterns on water utility operations; and 3) providing data that can be correlated with future trends for planning purposes. Conclusions related to each overall goal are provided below.

Assessing Water-Usage Patterns

As indicated, many utilities have observed declining residential water usage within their customer base and have advanced several theories to explain the causes. To date, no definitive statement could be made as to the validity of these hypotheses or the amount each component contributed to the observed decline. This research assessed a number of components and their contribution to the decline.

Both the national and regional analyses indicate a pervasive decline in residential usage since 1975; however, usage trends varied widely among the national and regional participants' consumption data. Local or utility specific factors play a critical role in influencing household water usage. As examined with the local level analysis of Louisville Water Company households, the age of housing stock, household demographics and local conservation measures are all factors influencing residential usage. These influencing factors can vary significantly from one utility to another. This trend of declining household water usage could be substantially different for various utilities, thus the impacts of factors on specific utilities will be unique. Because of the impact of local factors, it is important to note that although the national household usage trend is negative, different utilities maybe be experiencing different usage trends. The results gained from this study can serve as a baseline for utility purveyors to estimate the influence of these site-specific factors locally.

Beyond examining usage per household the study explored, quantitatively, the influence of the changing household demand on average and maximum daily water production for the regional participants. Overall, when assessing the raw data for total water usage (including residential, commercial, and industrial); there was no consistent average and maximum daily demand trend. The average and maximum daily demands were highly influenced by local fluctuations in demographics, weather, and drought conditions. For example, the Seattle Public Utility usage data showed that the average and maximum daily demand has steadily declined since the mid-1980s (Figure 5.3). However, the average daily demand for Dallas Water Utilities has been steadily increasing since 1975 (Figure 5.4). The demand for the South Central Connecticut Regional Water Authority has been flat (Figure 5.5).

Statistical analysis tools were utilized to assess the influence of regional and national variables on water usage. By developing the statistical models, the importance of regional-

specific factors could be assessed, including: demographics, drought conditions, changes in utility population, and the strength and magnitude of local conservation policies. The statistical models showed that regional variables play a significant role in water usage. However, when the data are corrected for climate zone, drought index, and other key factors, the models showed that overall residential household use has declined by approximately 380 gallons per year since 1978.

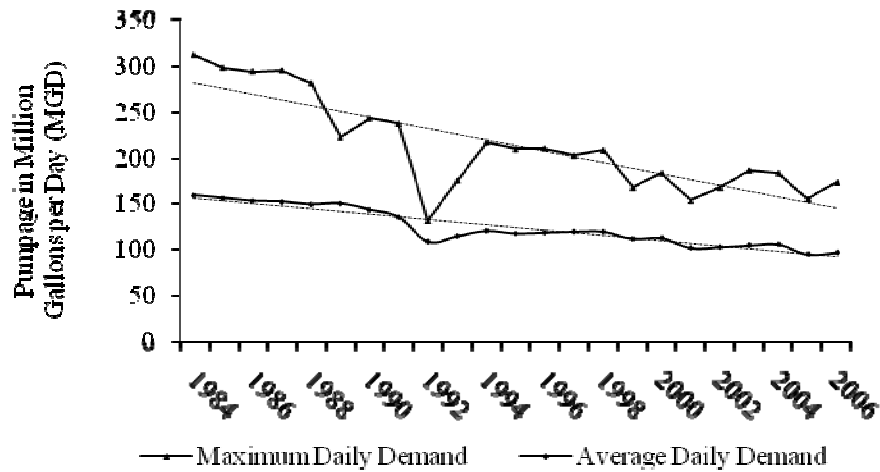


Figure 5.3. Seattle water usage

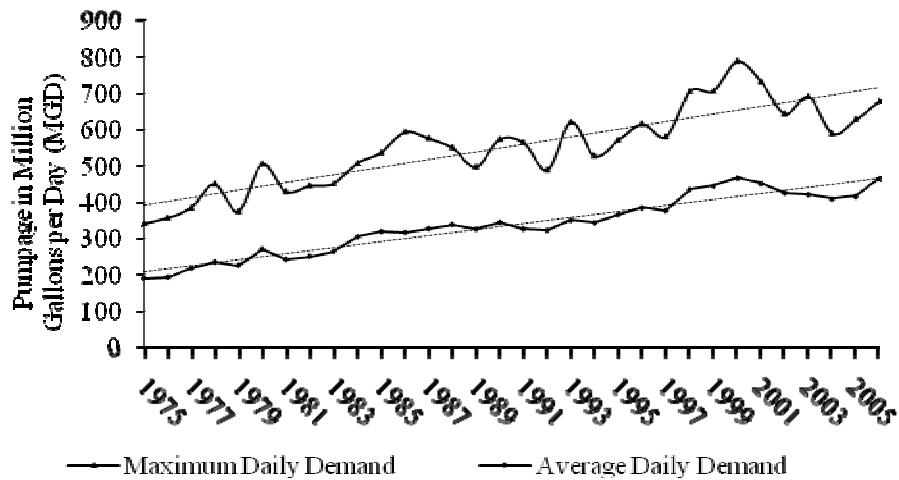


Figure 5.4. Dallas water usage

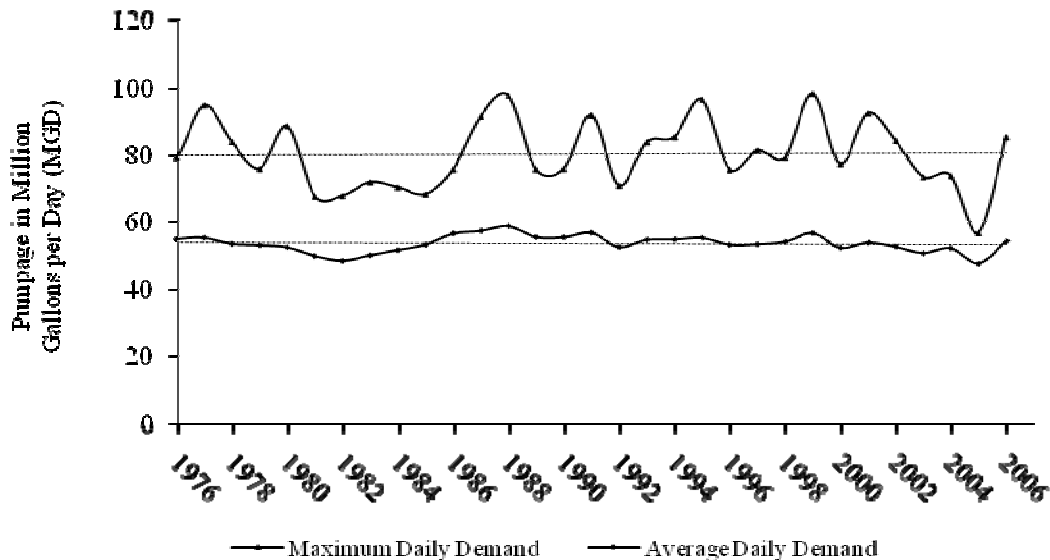


Figure 5.5. South Central Connecticut water usage

Impact of Declining Water Usage on Utility Operations

As identified by many water utilities and documented by this research, households are reducing their water usage. There is general concern that this decline in usage may adversely impact the normal business operations of many water utilities. Although the full impact of declining usage is unknown, the research data can provide a qualitative assessment of a few primary issues.

Water Treatment and Emergency Response

During the research project, the regional survey tools were specifically designed to assess the impact of declining water usage on current operations. During the interview process, utilities were asked to what extent changing water-consumption patterns impacted distribution system operations, long-term infrastructure planning, and water quality. All the utilities that participated in the regional-level interviews indicated that the changing water-consumption patterns had no impact on their abilities to react to emergencies such as drought or fire and that they had no effect on the quality of water provided. No increases in contaminants were observed during distribution testing, and interviews with wastewater personnel did not indicate an increase of contaminants in wastewater flows. While overall water usage had declined per household, there did not appear to be a significant change in total water produced by utilities. Water quality, distribution, and emergency response capabilities of the water utilities have remained relatively unchanged.

Impact on Utility Revenues

As customers continue to purchase less water, many utilities are growing increasingly concerned with the effects on their operating revenues. Most of the funding for water and wastewater comes from the revenues generated by purchased water. Therefore, pricing that

recovers the costs of building, operating, and maintaining the system is absolutely essential to achieving sustainability. Drinking water and wastewater utilities must be able to price water to reflect the full costs of treatment and delivery (USEPA 2006).

Impact of Graywater Systems

Graywater includes the reuse of any water previously used in the home, except water from toilets. Dish, shower, sink, and laundry water comprise 50-80% of residential "waste" water. This "waste" water may be reused for other purposes, especially landscape irrigation. Currently there is no standardized legislation regulating household graywater retrofit systems (Noah 2002).

The impacts of graywater systems on public health and the environment have been extensively examined but research on its impact on household water usage is limited. A 1996 study conducted in Brisbane, Australia estimates that domestic graywater re-used for water landscape irrigation could reduce average household potable water usage by 30 to 50 percent (Jeppesen 1996). Within the United States, a 1990 study retrofitted a single-family residence in Tucson, Arizona with water-conserving fixtures, rainwater harvesting, and a graywater reuse systems to examine their affects on daily household usage. The study found that the graywater system reused an average of 77 gpd or 32 percent of the total household water use (Karpiscak et al 1990).

While the impact of graywater systems on daily household usage has been estimated the total number of residential graywater systems in use in the United State is still unknown. A Graywater Awareness and Usage Study conducted by the Soap and Detergent Association (SDA) estimated that only 7 percent of those US household surveyed are currently reusing graywater (SDA 1999). This number can be deceiving because the portion of households reusing graywater varied among the states due to local climatic variations. The SDA study, found that households in the southwest and western regions of the United States had the highest concentration of households with graywater systems. This included the states of California (13.9 percent), Texas (11 percent) and Arizona (3.6 percent) (SDA 1999).

As graywater reuse becomes more accepted by the general the pubic and local municipalities, utilities could expect further negative impact on household water usage. The impact could be greater in certain regions due to local or regional factors such as weather and stressed water supplies.

Data for Correlation With Future Trends

The data compiled in this research investigation are intended to assist utilities in developing realistic management plans that take into account the primary causes of declining residential water usage. The data provide a tool for projecting residential water usage in light of utility-specific trends. Utilities are encouraged to consider which regional case studies most closely resemble their own situations when forming these plans. While local trends will impact utility-specific plans, this research investigation identified decreasing household size and penetration of water-conserving appliances as the primary causes of declining residential water usage. Although the rate of decline may slow, there is no indication that national household-size trends will reverse. Also, new and existing federal regulations will prompt further penetration of water-conserving appliances. Thus, there is no indication that the decline in water usage will reverse.

Recent studies confirm that the average household size has more than halved since 1790, dropping from 5.8 persons per household to 2.62 in 2000 (U.S. Census Bureau 2005). While the change in household composition has been continuous, it accelerated after 1960. In 1960, 85 percent of households were family households; this figure dropped to 69 percent by 2000. Two-parent family households with children declined from 44 percent to 24 percent of all households between 1960 and 2000. Over the same period, unmarried-couple households increased from less than 1 percent to about 5 percent of total households and became progressively more likely to include children. The number of single-parent (primarily single-mother) households increased from 1.5 million in 1950 to 9.5 million in 2000 (Bianchi and Casper 2000).

The most dramatic of these changes in household formation and dissolution occurred from 1960 to the early 1980s. Trends since the 1980s suggest a slowing or even in some cases a cessation of changes in household living arrangements: very little change in the proportion of two-parent or single-mother households, stabilized living arrangements for young adults and the elderly, a slowing growth in cohabitation, a decline in divorce, and an almost unchanged average household size during the 1990s (Jiang 2007). It is unclear whether this recent stability indicates a new, sustained equilibrium or is just a temporary lull (Bianchi and Casper 2000).

Another factor that will continue to lower residential water usage is the recently approved higher water-efficiency standards for washing machines and dishwashers. Under the new legislation, new home dishwashers manufactured beginning in 2010 will be prohibited from using more than 4.5 or 6.5 gallons of water per cycle, depending on machine size. Beginning in 2011 all new home clothes washers will use at least 9.5 gallons per cycle per cubic foot that the clothes washer uses (AWR 2008).

The water-efficiency provisions included in the bill are expected to continue to improve efficiency of appliances in the coming years and continue to negatively influence household water usage. Through the level of impact will be influenced highly by local penetration rates of these efficient appliances and fixtures, which in turn are influenced by rates of home renovation, new housing construction and local conservation programs.

Though there has been a clear trend of declining residential customer water use over the last twenty-five years, this trend may begin flattening over the next twenty years. There are some indications that the two main factors driving this decline in water usage, declining household size and increased efficiency appliance standards, may not have as strong an impact on water usage in the future as previously. Both of these trends have theoretical limits on how low they can go. Recently the rate of decline in household size have been slowing (Bianchi and Casper 2000). Though third generation water efficient appliances resulting from 2008 federal standard will be more efficient, the change in efficiency is less than achieved with the second efficiency generation appliances resulting from the 1992 federal standards. These combined trends may mean that the rate of decrease in residential water usage may begin to level out over time.

RECOMMENDATIONS

Standardized Classification and Data Management Practices

Researchers faced difficulties in obtaining accurate data for measuring usage and identifying patterns. Water-usage data reflect information captured for billing and metering reasons, not for demographic and economic analysis. It is challenging to assemble consistent household water-usage data over time across utilities because of the lack of universal metering

practices and a standardized method for classifying customers and maintaining databases. Thus, it is recommended that the American Water Works Association (AWWA) along with the Water Research Foundation (Foundation) and the International Water Association (IWA) work on establishing standardized customer classification and maintaining databases practices.

Local Level Studies

Though the water usage model developed for this study provides valuable insight into the detailed structure of residential water usage, these models are still weak in explaining the huge variations in residential water usage among the participating utilities. Other studies have also found only weak relationships between water usage and traditional socio-economic and physical factors (Balling 2008), (Domene and Sauri 2005), (Schleich 2007). Further research is needed on other demographic and housing variables to obtain a more comprehensive understanding of the determinants of residential water usage, especially in areas periodically affected by water stress.

For a utility to adequately understand the local factors influencing residential usage, it needs to conduct an in-depth demographic study of existing customers. Combining this information with daily household usage data gathered via data logging allows utilities to gain valuable insight into the influence of local factors on residential water usage. The model employed in this study provides a methodology for utilities to employ.

APPENDIX A SURVEY INSTRUMENTS

NATIONAL TRENDS SURVEY INSTRUMENTS

March 1, 2007

Dear {Mr.Mrs.Ms _____},

We need your help with a very simple data request We are requesting historical data on aggregate residential water usage at {Water Utility Name}.

We are conducting a study sponsored by the American Water Works Association Research Foundation: "Changes in Water Use Patterns", project #4031. Water Research Foundation members are concerned about the effect of changing water usage patterns on utility finances, rates, capacity, and quality. The organization is commissioning research that can help the industry understand these changes and prepare for the future. Our first task is to document changes in residential water use around the US and Canada. Next we will investigate the underlying causes of these changes. As appreciation for your help we will provide you with the results of our study.

You can see from the attached table the type of data we need from you. We need to know the number of active residential customers and their water usage by year for the last 25-30 years. If you break out single-family from multi-family customers, we would like these separated.

You can simply fill in the cells below and return by mail/fax, or preferably email us a spreadsheet containing the data which you may have on hand in electronic form. If stored together and convenient for you, we would also be interested in comparable data on commercial, industrial, government, wholesale and other customers, though that is not the primary focus of the current study.

Your response will be used to make inferences about national trends, and information about individual utilities will not be published or otherwise shared outside our research team.

By proceeding with the survey you are consenting to your voluntary participation in this study. Thank you for your help with this important research. Feel free to contact any of us with questions.

Please respond by Friday, March 16

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Utility Name: Pure H2O

Location: Maybery

Contact: President of Pure H2O

Year	Single-family		Total Residential	
	Number of active single-family residential customers	Annual Usage (million gallons per year)	Total number of active residential customers	Annual Usage (million gallons per year)
1975				
1976				
1977				
1978				
1979				
1980				
1981				
1982				
1983				
1984				
1985				
1986				
1987				
1988				
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2004				
2005				
2006				

Sample. Your water utility is one of 200 selected for participation in the first phase of our study. We drew a random sample of utilities in such a way that they represent the universe of all water utilities in terms of size, ownership, industrial structure, and moisture conditions. The validity of our inferences depends upon the participation of those selected, and we appreciate your cooperation.

Transmission. You can forward a spreadsheet as an email attachment to any members of the research team listed. A hard copy response can be mailed to the Center for Infrastructure Research at the address above. Please note any special characteristics of the data reported, such as customer

Notes on data:

Local Behavior Survey Instruments

Dear Valuable Louisville Water Company Customer

I am writing to request your help with an important research project we are conducting with the University of Louisville. To better serve you, we need your help to understand how water consumption patterns in the Louisville area have evolved due to changes in technology, demographics, and economic conditions.

You were randomly selected for participation in our survey, sent to only one in 200 customers. Your responses will be used for research purposes only and your personal information will not be shared with any outside groups.

The survey should take only 10 to 15 minutes to complete, as most responses simply require you to check a box. We ask for basic information on your indoor water fixtures and your typical outdoor water usage. We also need to know a few things about your household size. These will be used in our statistical work to draw conclusions about the causes of changing water usage across all our residential customers. Please return the survey in the pre-stamped envelope by September XX, 2007.

Following the survey, select customers will be invited to participate in a water metering study where very precise water meters will be affixed to their household's water supply line. The recorded minute-by-minute water flow data recorded through your meter will be correlated flow signatures of indoor water fixtures and appliances. The recording device would be installed outside the home and no further involvement on your part is required. If you are interested in participating in the two-week water metering phase of the study, please indicate so on question 52 of the enclosed survey.

Thank you in advance for your participation in this important survey. If you have any questions or comments, please contact our customer service department at 502.583-6610.

Sincerely,

Greg C Hertzman
President and CEO
Louisville Water Company

LWC Household Water Use Survey

Indoor Water Fixtures

1. Please indicate how many of each of the following types of water-using appliances or fixtures you have in your home. Please circle the appropriate number for each.

	None	One	Two	Three	Four	Five	Six	Seven or more
Toilets	0	1	2	3	4	5	6	7+
Bathtub with shower	0	1	2	3	4	5	6	7+
Bathtub only	0	1	2	3	4	5	6	7+
Shower only (no bathtub)	0	1	2	3	4	5	6	7+
Indoor utility garage sink	0	1	2	3	4	5	6	7+

2. Please indicate whether you have any of the following in your home. Please check the appropriate box for each.

	Yes	No
Garbage disposal	<input type="radio"/>	<input type="radio"/>
Top-loading clothes washing machine	<input type="radio"/>	<input type="radio"/>
Front-loading clothes washing machine	<input type="radio"/>	<input type="radio"/>
Dishwashing machine	<input type="radio"/>	<input type="radio"/>
Whirlpool bathtub with jets	<input type="radio"/>	<input checked="" type="radio"/>
Indoor spa or hot tub with jets (if hot tub is NOT usually filled with water, indicate "no")	<input type="radio"/>	<input type="radio"/>
Evaporative swamp cooler	<input type="radio"/>	<input type="radio"/>
A built-in indoor water feature (like a water fountain or water pond)	<input type="radio"/>	<input type="radio"/>
A whole house water treatment system (like a water softener or a filter system) which is attached to water system, not just to a faucet	<input type="radio"/>	<input type="radio"/>

- | | None | One | Two | Three | Four or more | Don't Know |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| 3. How many of the toilets in your home are ultra-low-flush toilets (1.6 gallons per flush)?
<i>(If your home was built in 1994 or later, the toilets are probably ultra-low flush)</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 4. How many of the showers in your home have low-flow (water conserving*) showerheads?
<i>*2.5 gallons per minute (gpm) or less, usually stamped on the showerhead</i> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| 5. How many of the showers in your home have a hand-held sprayer? | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

6. Do any of the showers in your home have multiple showerheads?
 Yes No *How many showerheads per shower?*
 2 3 4 or more

7. Please indicate whether you have renovated or replaced any of the following since 1994. Please check the appropriate box for each.

	Yes	No
Plumbing pipes (inside the house)	<input type="radio"/>	<input type="radio"/>
Bathroom fixtures	<input type="radio"/>	<input type="radio"/>
Kitchen fixtures	<input type="radio"/>	<input type="radio"/>

8. Please indicate whether you have any of the following. Please check the appropriate box for each. *If not applicable go to question #9*

	Yes	No
Running toilet (you can hear it running when not in use)	<input type="radio"/>	<input type="radio"/>
Dripping faucet	<input type="radio"/>	<input type="radio"/>
Leaks in your pool system	<input type="radio"/>	<input type="radio"/>
Leaks in your irrigation system	<input type="radio"/>	<input type="radio"/>
Other leaks in the water system	<input type="radio"/>	<input type="radio"/>

Outdoor Landscape

9. Do you water your outside landscape?
(Include everything you apply water to, either by hand, or via an irrigation system or other method.)
 Yes No → go to question #30
10. Do you use a contractor for any part of your outdoor landscape maintenance?
 Yes No → go to question #12
11. Is your contractor responsible for watering (irrigating) your outdoor landscape?
 Yes No
12. About how much of your outdoor landscape is turf (lawn or grass)?
 All of it (100%)
 Half or more
 About 20% to 50%
 About 10% to 20%
 About 5% to 10%
 Less than 5%
 None of it → go to question #15
13. During the winter months of the year (generally December - February), how often do you usually water your turf?
 Never
 Twice a month or less
 A few times per month
 1 day a week
 2 days a week
 3 days a week
 4 days a week
 5 days a week
 6 days a week
 7 days a week
 Not sure
14. During the summer months of the year (generally June - August), how often do you usually water your turf?
 Never
 Twice a month or less
 A few times per month
 1 day a week
 2 days a week
 3 days a week
 4 days a week
 5 days a week
 6 days a week
 7 days a week
 Not sure
15. About how much of your outdoor landscape is garden (flower or vegetables)?
 All of it (100%)
 Half or more
 About 20% to 50%
 About 10% to 20%
 About 5% to 10%
 Less than 5%
 None of it → go to question #18
16. During the winter months of the year (generally December - February), how often do you water your garden(s)?
 Never
 Twice a month or less
 A few times per month
 1 day a week
 2 days a week
 3 days a week
 4 days a week
 5 days a week
 6 days a week
 7 days a week
 Not sure
17. During the summer months of the year (generally June - August), how often do you usually water your garden(s)?
 Never
 Twice a month or less
 A few times per month
 1 day a week
 2 days a week
 3 days a week
 4 days a week
 5 days a week
 6 days a week
 7 days a week
 Not sure
18. About how much of your outdoor landscape is other landscape plants (e.g., trees, shrubs, vines, ground covers, etc.)?
 All of it (100%)
 Half or more
 About 20% to 50%
 About 10% to 20%
 About 5% to 10%
 Less than 5%
 None of it → go to question #22
19. During the winter months of the year (generally December - February), how often do you water your other landscape plants?
 Never
 Twice a month or less
 A few times per month
 1 day a week
 2 days a week
 3 days a week
 4 days a week
 5 days a week
 6 days a week
 7 days a week
 Not sure

Outdoor Landscape Continued...

20. During the summer months of the year (generally June - August), how often do you usually water your other landscape plants?
- Never
 - Twice a month or less
 - A few times per month
 - 1 day a week
 - 2 days a week
 - 3 days a week
 - 4 days a week
 - 5 days a week
 - 6 days a week
 - 7 days a week
 - Not sure
21. In addition to the water purchased from your water utility, do you use any of the following sources of water for your outdoor water needs?
- No additional sources of water used
 - Well water
 - Canal/ditch
 - Stream/river
 - Cistern (rainwater harvesting)
 - Landscaping or device which directs roof water toward plants in the yard
 - Other: _____
22. Is any part of your outdoor landscape watered manually?
- Yes No *go to question #26*
23. In what ways is the outdoor landscape watered manually? (Please check all that apply.)
- Hand-held garden hose (with or without a nozzle)
 - Garden hose with sprinkler attached
 - Soaker hose
 - Drip irrigation or bubbler system
 - In-ground sprinkler system without a timer
24. About how much of your outdoor landscape is watered manually?
- All of it (100%)
 - Half or more
 - About 20% to 50%
 - About 10% to 20%
 - About 5% to 10%
 - Less than 5%

25. Do you have an in-ground watering (irrigation) system?
- Yes No *go to question #30*
26. Does your outdoor water system have any broken sprinkler heads?
- Yes No Don't know
27. Does your in-ground irrigation system have an automatic timer?
- Yes No
28. Does your automatic irrigation system have an override shut-off device such as a soil moisture sensor or rain sensor? (Please check all that apply.)
- No override shut-off device
 - Yes soil moisture sensor installed
 - Yes, rain sensor installed
 - Other _____
 - Don't know
29. Does your automatic irrigation system have a weather-based irrigation controller (WBIC) or "smart" controller?
- Yes No Don't know

Outdoor Water Fixtures

30. Does your home have an outdoor spa or hot tub?
- Yes No *go to question #32*
31. Is the outdoor spa or hot tub usually filled?
- Yes, all year round
 - Yes, in the winter
 - No but it is sometimes filled
 - No it is never filled
32. Do you have an outdoor water feature like a fountain or pond? (Note: do not include bird baths; only features that use a significant amount of water.)
- Yes No

Swimming Pools

33. Does your home have a swimming pool?
- No *go to question #44*
 - Yes, outdoor pool only *go to question #35*
 - Yes, indoor pool only
 - Yes, indoor AND outdoor pool
34. What type of filling system does the indoor swimming pool have? (If your home ONLY has an indoor swimming pool, please check the appropriate box and then go to question #44.)
- Manual Automatic

Swimming Pools Continued

35. What type of filling system does the outdoor swimming pool have?
 Manual Automatic
36. Do you have a swimming pool cover that you use when the outdoor pool is not in use?
 Yes No *go to question #38*
37. What months of the year do you typically use the pool cover? (Please check all that apply.)
- | | |
|--------------------------------|---------------------------------|
| <input type="radio"/> January | <input type="radio"/> July |
| <input type="radio"/> February | <input type="radio"/> August |
| <input type="radio"/> March | <input type="radio"/> September |
| <input type="radio"/> April | <input type="radio"/> October |
| <input type="radio"/> May | <input type="radio"/> November |
| <input type="radio"/> June | <input type="radio"/> December |

Household Demographics

38. Do you rent or own your residence?
 Rent Own
39. Is your house on a septic system?
 Yes No Don't Know
40. Is your household responsible for paying the water bill, or is it paid by a landlord or homeowners' association?
 Household pays
 Landlord or a homeowner's association
 Don't know
41. How many bedrooms does this house have?
 1 2 3 4 5 6 or more
42. In what year did you move to this home?
 _____ year
43. What number of adults living at this address are employed full-time OUTSIDE the home?
 None (0) 1 2 3 4 5 or more
44. How many people, including yourself, live full-time at this address?
- ___ Adults, including yourself (age 18+)
- ___ Teenagers (age 13-17)
- ___ Older Children (age 6-12)
- ___ Younger Children (age 3-5)
- ___ Infants or Toddlers (under age 3)

45. What is the last grade of formal education the primary wage earner has completed?
- Less than High School
 - High School degree
 - Some College or Associate's degree
 - Bachelor's degree
 - Master's degree
 - Doctoral degree

Metering Study Participation

If you choose to participate in the metering phase of the study, an employee from LWC will install a flow metering device in the meter box outside of your home. This device records flow rates, which identify specific flow signatures of indoor water fixtures and appliances. The flow meter will record household water usage over a two-week period. After the two-week period, a Louisville Water Company employee will remove the meters.

The water usage data will be used in conjunction with this survey results to provide the Louisville Water Company with a current picture of residential water demand.

There is no additional cost associated with participating with this phase of the study. And, since the meters are installed outside your home, there is no need for you to be home or assist in any way beyond giving us permission to take the readings.

Be assured if you choose to volunteer for the metering study, all personal and household information will be completely confidential.

46. Are you willing to participate in the follow-up metering phase of this study?

Yes No

STATISTICAL SIGNIFICANCE OF THE SURVEY SAMPLE

To determine if the sample population's water-usage characteristics were representative of the residential account populations, a t-test compared the means for the four categories of the sample population (1002), the survey respondents (302), and data logging households (65). An independent t-test across the four strata was conducted to ensure that the randomly selected

The statistical breakdown for the survey population, survey respondents, and the data-logging sample are detailed in [Table A.1](#). The results for the independent t-test revealed no significant difference between the three populations across the four strata. The results from the independent t-test are detailed in [Table A.2](#) and [A.3](#).

Table A.1
Comparing the descriptive statistics for the sample populations

		Annual Usage (000 gal)	Year Built	Total Sq Footage	Total Value (Land & Improvements)
Sample Population (N=1000)	Mean	53.64	1962	1521.89	\$134,597
	Std. Deviation	30.31	23.16	747.11	\$93,227
Clean Survey	Mean	50.13	1962	1550.72	\$135,589
Respondents (N=302)	Std. Deviation	25.81	21.55	681.21	\$70,837
Data Logging Sample	Mean	47.12	1961	1562.58	\$138,205
Population (N=65)	Std. Deviation	23.93	18.46	593.53	\$53,260

Table A.2
T-Test comparing survey respondents (302) to sample population (1002)

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Annual Usage	Equal variances assumed	12.559	.000	-2.413	1000	.016	-5.024	2.082	-9.109	- .939
	Equal variances not assumed			-2.625	699.266	.009	-5.024	1.914	-8.782	-1.266
Year Built	Equal variances assumed	2.536	.112	.805	1000	.421	1.284	1.595	-1.845	4.413
	Equal variances not assumed			.838	626.820	.403	1.284	1.533	-1.726	4.294
Total Sq Footage	Equal variances assumed	1.963	.162	.802	1000	.423	41.261	51.445	-59.691	142.213
	Equal variances not assumed			.844	643.629	.399	41.261	48.911	-54.783	137.305
Total Value (Land & Improvements)	Equal variances assumed	3.748	.053	.221	1000	.825	1420.657	6421.365	-11180.238	14021.553
	Equal variances not assumed			.254	799.498	.800	1420.657	5595.346	-9562.647	12403.962

Table A.3
Independent T-Test comparing data logging sample (65) to sample population (1002)

	Levene's Test for Equality of Variances		t-test for Equality of Means						
	F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
								Lower	Upper
Annual Usage	6.333	.012	1.793	1000	.073	6.964	3.883	-656	14,585
Year Built	4.002	.046	.035	1000	.972	.104	2.972	-5.728	5,936
Total Sq Footage	2.444	.118	-.454	1000	.650	-43.517	95.865	-231.638	144,603
Total Value (Land & Improvements)	5.902	.015	-.323	1000	.747	-3858.259	11963.036	-27333.793	19617,275
			-.528	95.331	.599	-3858.259	7304.287	-18358.453	10641,935

APPENDIX B REGIONAL PARTNER CASE STUDIES

GREATER CINCINNATI WATER WORKS

Greater Cincinnati Water Works (GCWW) is a municipal water utility owned and operated by the City of Cincinnati. The municipality purchased the utility from a private owner in 1839. The service area of Greater Cincinnati Water Works includes the entire city of Cincinnati, most of Hamilton County, and additional areas in the adjacent counties of Butler, Warren, and Clermont in Ohio. Additionally, service has been expanded to Boone County in Kentucky. The city is responsible for the complete administration, operation, maintenance, and capital planning for the entire service area. GCWW receives no share of any state or local property or income taxes. Annually, GCWW supplies approximately 50 billion gallons of water, via 3,102 miles of water main, to over 240,000 residential and commercial accounts representing more than 1 million customers in the region (GCWW 2007a).

Recent Expansion

Over recent years, GCWW has built out infrastructure to meet growing demand outside of the city center. Specifically, the utility has actively expanded services into the counties to the north, south, and east of Hamilton County (Cincinnati). In March 2003, the GCWW entered into one of the largest interstate drinking water agreements ever made when GCWW began pumping water to Boone County and the city of Florence in Northern Kentucky. Providing water to Northern Kentucky involved not only construction of a new pump station and reservoir on the Kentucky side of the Ohio River but also installation of 3,000 feet of 36-inch steel pipe under the Ohio River. In 2004, GCWW signed a 10-year agreement with the Butler County Department of Environmental Services (BCDES) to provide customer service and utility billing for BCDES's 38,000 customers (GCWW 2007a).

GCWW has numerous standby agreements with surrounding communities, counties and private utilities to provide water during periods of excess demand. GCWW also serves as the primary wholesaler for the area, providing nine water utilities with water. GCWW has a wholesaler agreement with two private providers: the S. W. Ohio Water Company of Butler County and the Western Water Company of Warren County (GCWW 2007a).

Conservation

Water is plentiful in the Cincinnati region, and no local conservation policies are currently in place.

Water Quality

State and federal regulations significantly affect the drinking water industry. GCWW seeks to identify and understand impending issues by participating in national regulatory and technology activities. This approach results in a proactive mode of operation that heightens GCWW's ability to make optimal decisions in providing high-quality, safe drinking water at

reasonable prices. The quality of water distributed by GCWW meets or exceeds all current applicable federal and Ohio standards in all material respects. GCWW has never had a violation of any regulated maximum contaminant level. Between 1995 and 2005, GCWW experienced no monitoring or reporting violations, according to the EPA's Safe Drinking Water Information System (SDWIS) (GCWW 2007a).

GCWW does not have any compliance concerns with the final arsenic rule recently promulgated by the United States Environmental Protection Agency (USEPA). In addition, GCWW does not expect to have any compliance concerns with the new versions of the radon rule, enhanced surface water treatment rule, and groundwater rule that the USEPA is expected to issue (GCWW 2007a).

Customer Classifications

Greater Cincinnati Water Works (GCWW) identifies seven customer classes: Commercial, Free, Industrial, Interdepartmental, Residential, Welfare, and Wholesale. The "Free" customer class is used for municipal purposes, including the Cincinnati Zoo and Botanical Gardens. The interdepartmental customer class is used by city agencies for non-municipal purposes. Welfare accounts, charitable and educational facilities established prior to 1983 have discounted rates for services. The two customer classes included in this analysis are residential and commercial.

GCWW officials are aware of misclassification of residential customers as commercial in the current bill system. Because GCWW does not charge different rates for residential and commercial customers, there has not been a concerted effort to clearly define and categorize customer accounts. For GCWW, residential customers include accounts serving one-, two-, and three-family homes. It also includes some apartment complexes of four units or more, but typically these are captured under the commercial customer class. Customer classifications for new services are determined by the meter size and intended use as submitted on the service application. For example, accounts with 5/8" meters, serving single-family homes, are classified as residential (GCWW 2007a).

Meter Update

Beginning in 2003, GCWW began a four-year project to replace nearly all of the 240,000 residential and small business water meters with Automated Meter Reading (AMR) technology, to install an electronic meter register, and to wire the device to a meter interface unit. Each meter interface unit's circuitry reads the water meter and transmits the radio signal to a data collector (handheld or laptop computer). The technology allows the utility to accurately read meters without entering customers' homes. The AMR has greatly improved meter reading accuracy and efficiency, successfully reading up to 99.5 percent of all installed units without issue (GCWW 2007a).

Rate Structure

Greater Cincinnati Water Works (GCWW) determines usage charges through internally conducted cost-of-service studies. The studies are conducted every five years. All proposed

water rate increases must be approved by city council. The historic and future rate increases for customers within the “Inside Cincinnati” service area are detailed in [Table B.1](#) (GCWW 2007a).

GCWW does not charge a different usage rate among five of the seven customer classes. Accounts with a Welfare rate receive a 20 percent discount. Wholesale rates are negotiated on a case-by-case basis. The usage charge rate is based on four service areas. The usage and service charges for each service area are detailed in [Tables B.2](#) and [B.3](#). The service fee charged by GCWW is based upon meter size and service area. GCWW employs a three-block declining rate structure for all customer classes. GCWW has employed a declining rate structure for 30 plus years (GCWW 2007a).

Revenues from the sale of water are used for the operation, maintenance, and debt service requirements of the utility. On Dec. 21, 2006, city council passed an ordinance approving a 7 percent increase effective Jan. 20, 2007, and a 6 percent increase effective Jan. 1, 2008. This action by city council was its second consecutive approval of rate increases for a multi-year period (GCWW 2007a).

Table B.1
Historic and future rate increases

Inside Cincinnati		
Date	Residential Quarterly Rate*	Revenue Increase
1/1/1990	\$26.19	10%
1/1/1991	\$28.00	7%
1/1/1992	\$29.86	5%
1/15/1993	\$30.74	3%
1/1/1994	\$32.52	4%
1/1/1996	\$36.93	5%
1/1/1998	\$37.46	6%
1/18/2002	\$38.67	3%
1/17/2003	\$39.53	2%
1/16/2004	\$40.70	3%
1/14/2005	\$42.95	5%
1/1/2006	\$46.49	7.50%
1/20/2007	\$50.55**	7.00%
1/1/2008	\$53.83**	6.00%

*Cost is based on usage of 25 ccf per quarter with a 5/8” residential meter

** Rates based on multi-year ordinance passed by City Council on Dec. 21, 2006.

Table B.2
GCWW usage charges (effective 1/20/2007)

Per Month	Per Quarter	Inside Cincinnati	Incorporated Hamilton & Clermont Counties	Unincorporated Hamilton County	Butler and Warren Counties
First 20 Ccf	First 60 Ccf	\$1.67	\$2.10	\$2.22	\$2.42
Next 580 Ccf	Next 1740 Ccf	\$1.33	\$1.68	\$1.77	\$1.93
Over 600 Ccf	Over 1800 Ccf	\$1.19	\$1.50	\$1.58	\$1.73

Table B.3
Service charge rates by service area and meter size (effective 1/20/2007)

Meter Size (Inches)	<i>Incorporated Hamilton</i>		<i>Unincorporated</i>		<i>Butler & Warren</i>			
	<i>Inside Cincinnati</i>	<i>& Clermont Counties</i>	<i>Hamilton County</i>	<i>Hamilton County</i>	<i>Butler & Warren</i>	<i>Counties</i>		
	Monthly	Quarterly	Monthly	Quarterly	Monthly	Quarterly	Monthly	Quarterly
5/8	\$6.63	\$8.80	\$8.35	\$11.09	\$8.82	\$11.70	\$9.61	\$12.75
3/4	8.07	15.70	10.17	19.78	10.73	20.88	11.69	22.75
1	10.30	20.55	12.98	25.89	13.70	27.33	14.92	29.78
1-1/2	13.45	32.00	16.95	40.32	17.89	42.56	19.49	46.37
2	17.17	44.95	21.63	56.64	22.84	59.78	24.88	65.13
3	37.63	103.80	47.41	130.79	50.05	138.05	54.53	150.41
4	72.07	180.89	90.81	227.92	95.85	240.58	104.43	262.11
6	144.47	354.82	182.03	447.07	192.15	471.91	209.34	514.13
8	210.96	528.77	265.81	666.25	280.58	703.26	305.68	766.19
10	295.19	716.59	371.94	902.90	392.60	953.06	427.73	1,038.34
12	352.97	843.21	444.74	1,062.44	469.45	1,121.47	511.45	1,221.81

Residential Consumption

Of special note, in 1993 GCWW converted from its legacy system to the current billing system. GCWW does not charge different rates based upon customer classification. As such, there has not been a concerted effort to clearly define and categorize accounts into residential and commercial groups. For the most part, residential accounts include those accounts serving one-, two- and three-family homes. It also includes some apartment complexes of four units or more, but most of these are captured under the “commercial” designation. It should be noted that a data cleanup effort was completed after the new billing system went into effect. However, the lack of clear distinction between residential and commercial customers skews the annual consumption result in each group, especially prior to 1996.

GCWW percentage of water loss is approximately 16 percent. This percentage includes water used for fire protection, system flushing, system leaks, and unregistered water flow through meters. The utility estimates that true water loss from system leakage is approximately 5 percent (GCWW 2007b).

GWCC has added 52,517 residential customer accounts from 1993 to 2006, an increase of just under 30 percent (Figure B.1). During this same period, total consumption for residential customers has remained relatively flat, with 14.71 billion gallons in 1994 and 14.13 billion gallons in 2006, with peak residential consumption of 18.14 billion gallons occurring in 1995.

This year was a relatively normal year in regard to drought, with a Palmer Severity Drought Index score of -.06. Between 1993 and 2006, annual consumption per residential customer steadily decreased to a low of 61.7 thousand gallons in 2006.

Commercial Consumption

From 1993 to 2006, 7,099 commercial customers were added, an increase of 37 percent. During the period between 1993 and 1996, consumption reports show a dramatic increase. However, much of this is attributed to the internal switch to a new billing system and improvements in data collection and reporting. Between 1996 and 2006, annual commercial consumption fluctuated, but the trend was a general increase in consumption (Figure B.2).

Average and Maximum Daily Demand

Figure B.3 compares the maximum day and average daily demands of GCWW. The maximum day demand fluctuates during the time series provided, with a peak of 234.3 mgd in 1999. This year was a relatively normal year in regard to drought, with a Palmer Severity Drought Index score of -.06. During the period, the average daily demand remained relatively constant with a 6 percent increase over the years.

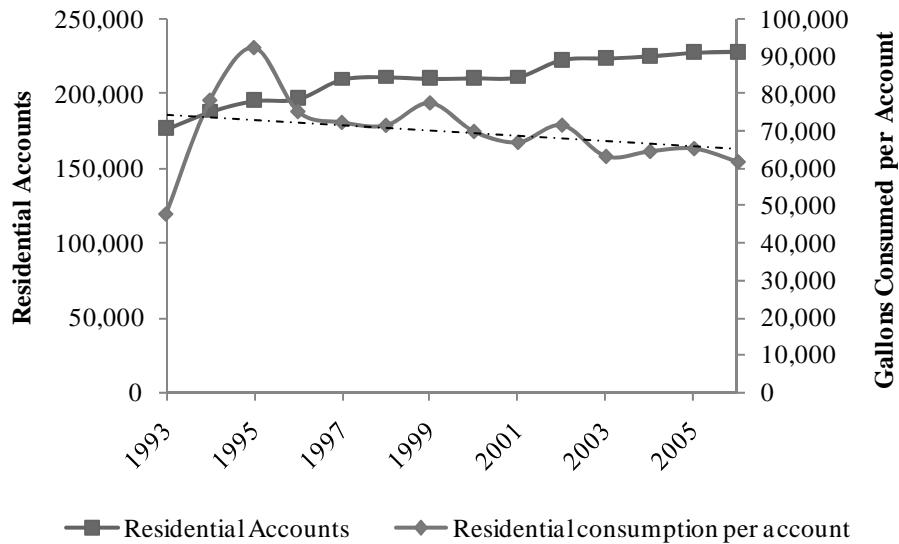


Figure B.1. Cincinnati residential water consumption and account trends

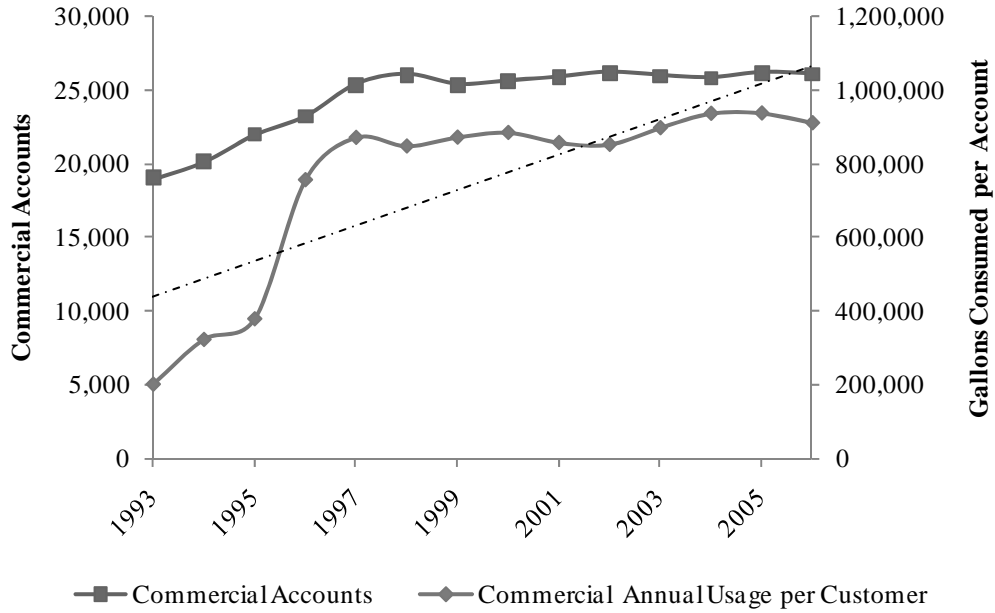


Figure B.2. Cincinnati commercial water consumption and account trends

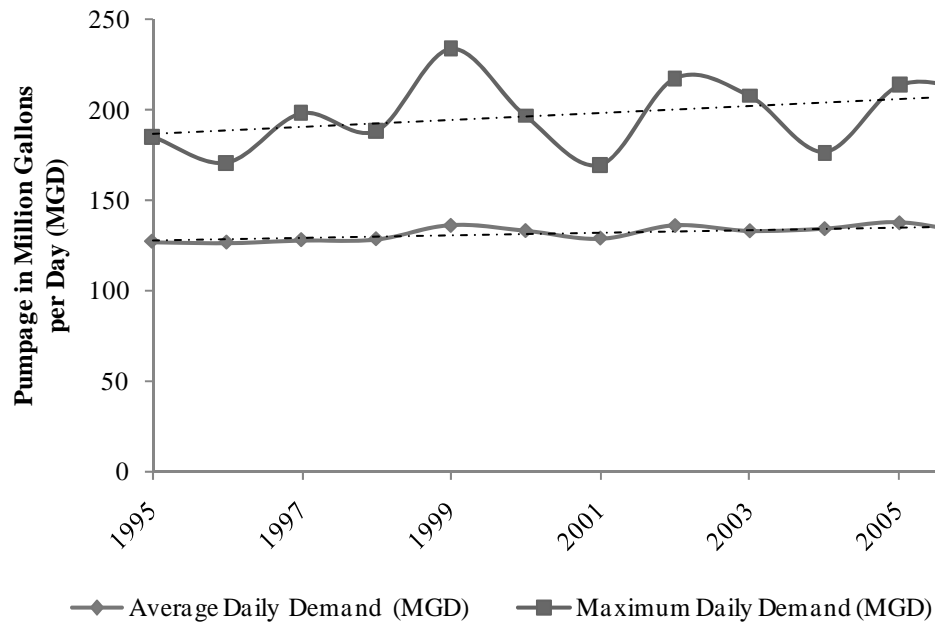


Figure B.3. Comparing the maximum day demand and the average daily demands (pumpage)

CLEVELAND WATER DEPARTMENT

The City of Cleveland Water Department (CWD) has owned and operated the public water supply system since 1856. The CWD draws its water supply from Lake Erie, a virtually unlimited source of high-quality water, through four intakes located 2.5 to 5 miles offshore. The CWD is one of the 10 largest municipal water systems in the United States. The CWD's service area covers roughly 640 square miles and serves approximately 1.5 million people in Cuyahoga, Geauga, Portage, Summit, and Medina counties. In addition to the City of Cleveland, the CWD serves 71 suburban communities, 65 on a retail basis and six on a wholesale basis. In addition, CWD has emergency service connections to areas in Cuyahoga, Lake, Lorain, Summit, Portage, and Medina Counties (CWD 2007a).

Water is sold on a retail basis to approximately 417,400 individually metered customers, comprised of 130,000 customers within the city of Cleveland and 287,400 customers located in 65 suburban communities, (the Direct Service Suburb communities). Customers within the Direct Service Suburb communities receive bills directly from and make payments to the CWD (CWD 2007a).

Rate Structure

The CWD provides water service to approximately 1.5 million persons, representing approximately 99 percent of the total population residing within its approximately 640-square-mile service area, with the remainder of the population being served via private well systems or independent water suppliers. The CWD does not charge different rates among customer classes. Water service within CWD's total service area is divided into four separate but interconnected subsystems, referred to as Service Districts. Service Districts are identified by pressure zones, which reflect distance from and elevation above Lake Erie. The four Service Districts are the Low Service District, the First High Service District, the Second High Service District, and the Third High Service District (CWD 2007b).

The CWD implements an inclining two-block rate structure. This rate structure has been in place for over 30 years. The CWD does offer a "super rate" for high-consuming industrial customers. Currently, only one industrial account occasionally qualifies for this "super rate." [Table B.4](#) displays the current water rate structure for 2007 (CWD 2007b).

CWD does subsidize some residential accounts, offering "homestead" rates to those customers that meet three criteria: owner of home, household income below 27K, and over 65 years of age or permanently and totally disabled. In addition the CWD offers a discount program of 20 percent on the quarterly water bill to those customers that meet the HEAP energy assistance program guidelines (CWD 2007b).

Starting Jan. 1, 2007, the CWD implemented a flat customer-service fee to be charged to all accounts regardless of consumption. The fee is to remain unchanged through 2010, when this multi-year rate increase ends. This recently enacted customer service fee will generate approximately \$12 million in revenue annually (CWD 2007b).

Table B.4
Rate Structure for 2006

CLEVELAND DIRECT SERVICE DISTRICTS RATES					
		<u>Cleveland</u>	<u>Low/1st High</u>	<u>2nd High</u>	<u>3rd High</u>
Regular	<i>1st MCF</i>	\$8.71	\$15.50	\$17.88	\$20.93
	<i>Additional MCFs</i>	\$18.62	\$33.08	\$38.96	\$44.73
Homestead	<i>All MCFs</i>	\$3.87	\$6.77	\$8.76	\$11.09
Quarterly Service Charge		\$7.00	\$7.00	\$7.00	\$7.00

History of Rate Changes

Table B.5 shows the history of the increases to the CWD rate service charges since 1976. The city has enacted timely multi-year water rate increases since 1991. Prior to this, the CWD enacted water rate increases periodically (CWD 2007b).

Table B.5
Historic changes in rates

Date	% of Increase	Rate for 1st MCF
June 29, 1976	43	\$0.89
December 16, 1981	15	\$1.05
October 11, 1982	25	\$1.40
April 17, 1985	28.5	\$1.96
February 11, 1987	37	\$3.11
August 1, 1991	20	\$3.88
January 1, 1993	8.5	\$4.25
January 1, 1994	8.5	\$4.64
January 1, 1995	8.5	\$5.07
May 11, 1996	7	\$5.45
January 1, 1997	7	\$5.86
January 1, 1998	7	\$6.30
January 1, 1999	7	\$6.78
January 1, 2000	7	\$7.29
January 1, 2001	3.5	\$7.55
January 1, 2002	3.5	\$7.83
January 1, 2003	3.5	\$8.11
January 1, 2004	3.5	\$8.41
January 1, 2005	3.5	\$8.71
January 1, 2006	0	\$8.71
January 1, 2007	15.8	\$9.62

Water Quality

CWD complies with all existing USEPA and Ohio EPA regulatory requirements and expects to comply with all pending requirements. All water treatment plants have achieved water quality levels meeting or exceeding those set by the Partnership for Safe Water, which are much more stringent than existing or proposed regulatory levels. Due to continued compliance, Cleveland enjoys “reduced monitoring” status for lead and copper (CWD 2007a).

Cleveland Water was one of the first in the country to establish a voluntary finished water turbidity goal of 0.1 nephelometric turbidity units or less, reflecting a high degree of particulate removal. The CWD expects to meet all requirements of the Long-Term 2 Enhanced Surface Water Treatment Rules and Stage 2 Disinfection By-Products Rule. Cleveland Water regularly participates in research and collaboration projects with the American Water Works Association Research Foundation (CWD 2007a).

The CWD enjoys a virtually unlimited supply of high-quality water from Lake

Erie, the 12th largest lake in the world. CWD maintains water intake structures located far away from shoreline or river outflows, minimizing agricultural and urban runoff and industrial waste in the raw water supply. For over 15 years, the CWD has not posted limitations on customer use.

Customer Classification

CWD does not charge different rates based upon the customer classification. As such, there has not been a concerted effort to clearly define and categorize accounts into residential and commercial groups. Currently, the CWD customer classification system is based upon meter size. The general rule of thumb is that meters less than or equal to 1” are classified as residential. Those accounts with meter sizes greater than 1.5” are classified as commercial (CWD 2007a).

In the near future, the CWD will undertake a meter automation and replacement project. The initial phase of the update will focus on updating meters for industrial and commercial accounts. The second phase will focus on updating meters for residential accounts. During the first phase of this project, commercial and industrial accounts also will be analyzed to determine if the correct meter size is in use and accounts are correctly classified (CWD 2007a).

Of special note, state law enables the CWD to place liens on property owners to ensure payment of water bills; all CWD accounts are thus in the name of the homeowner, not the tenant (CWD 2007a).

Total Residential Consumption

From 1977 to 2006, the number of CWD’s residential customer accounts rose from 350,622 to 402,450, an increase 14.8 percent. Total residential consumption remained constant between 1977 and 1999 before experiencing an average 2.9 percent decrease in total residential consumption between 2000 and 2006 (Figure B.4).

Urban Compared to Suburban Residential Consumption

The CWD distinguishes account rates between those inside the city of Cleveland boundary (Urban) and three direct service districts (Suburban) outside of the boundary. This section examines the changes in consumption rates experienced from 1977 to 2006.

Between 1977 and 2006, urban residential accounts saw a steady decrease in consumption and the number of active accounts. Active accounts decreased 10.2 percent, from 139,152 in 1977 to 124,989 in 2006. Consumption per account decreased 38.8 percent, from 114,376 gallons per account in 1977 to 70,041 gallons in 2006 (Figure B.5).

During this same period, CWD saw a steady incline in suburban residential accounts. Overall, suburban accounts increased 31.2 percent, from 211,470 in 1977 to 277,461 in 2006 (or an average annual increase of 0.96 percent). Despite the increase in suburban accounts, consumption decreased 31.8 percent, from 91,689 gallons in 1977 to 62,461 gallons in 2006, per account (Figure B.6). Figure B.7 compares the consumption per account for the urban and suburban residential accounts during this same time period.

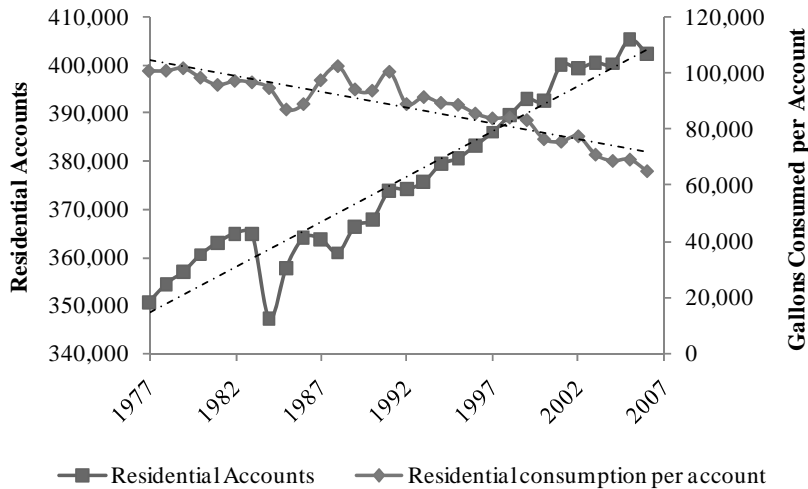


Figure B.4. Cleveland total residential water consumption and account trends

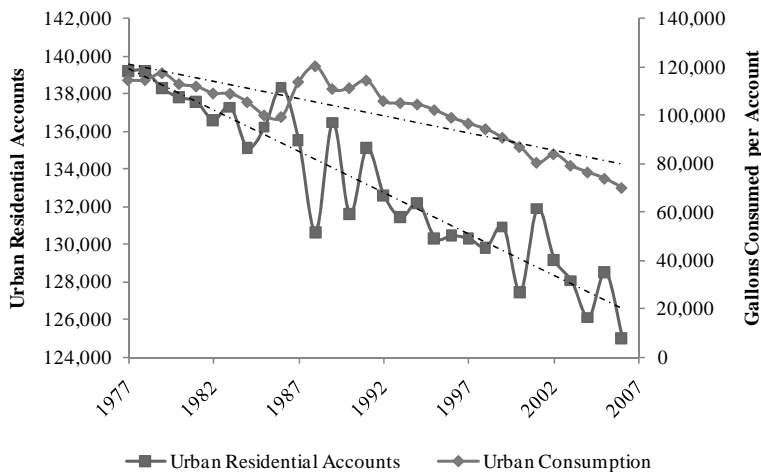


Figure B.5. Cleveland urban residential water consumption and account trends

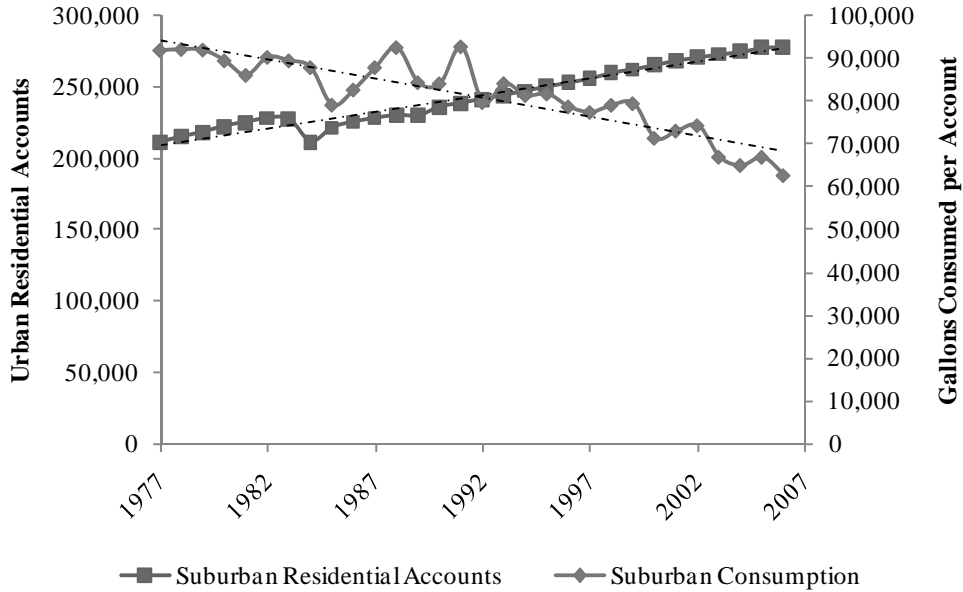


Figure B.6. Cleveland suburban residential water consumption and account trends

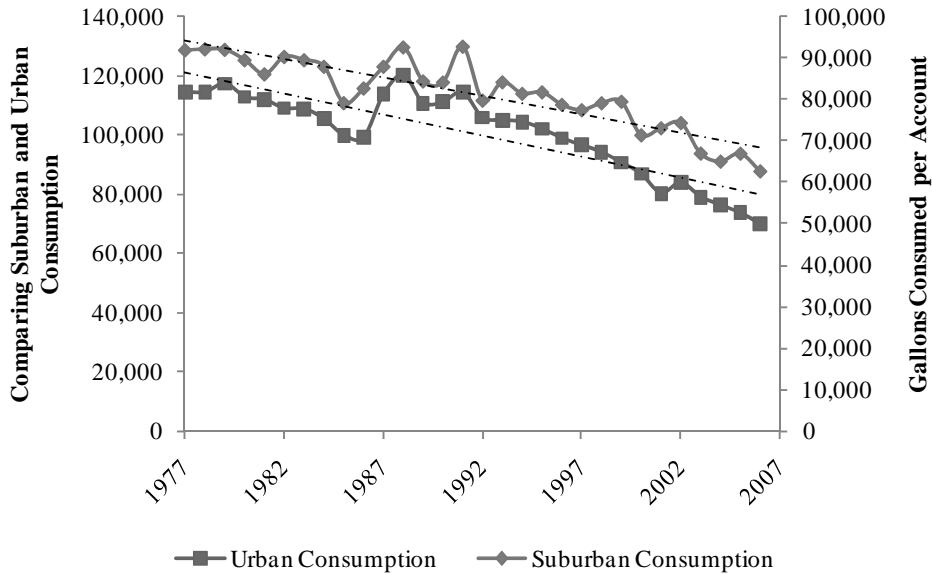


Figure B.7. Comparing suburban and urban residential consumption per account

Commercial Consumption

The number of commercial customers rose from 11,106 customers in 1977, to 14,937 customers in 2006, an increase of 34.5 percent. As shown in [Figure B.8](#), between 1977 and 2006, commercial annual consumption fluctuated but saw a distinctive downward trend. During this period, CWD experienced a 67.4 percent decrease in total commercial consumption per account.

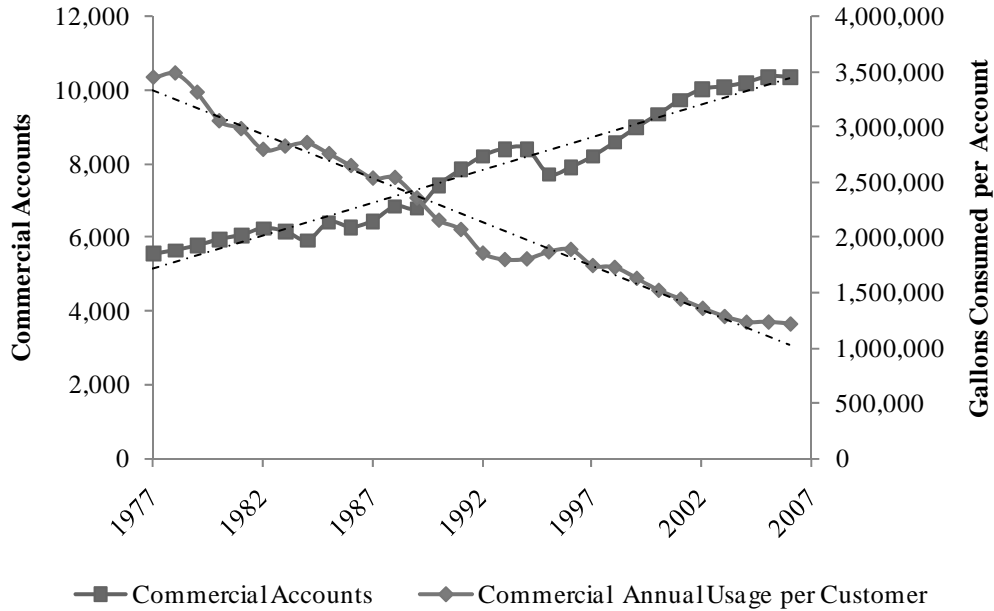


Figure B.8. Cleveland commercial water consumption and account trends

Average and Maximum Daily Demand

Figure B.9 compares the maximum day and average daily demands of total CWD pumpage. The maximum day demand fluctuates during the time period, with a peak of 498 mgd in 1978 and a low of 285.6 mgd in 2004. Overall, during this period the CWD experienced declines in both maximum daily demand and average daily demand.

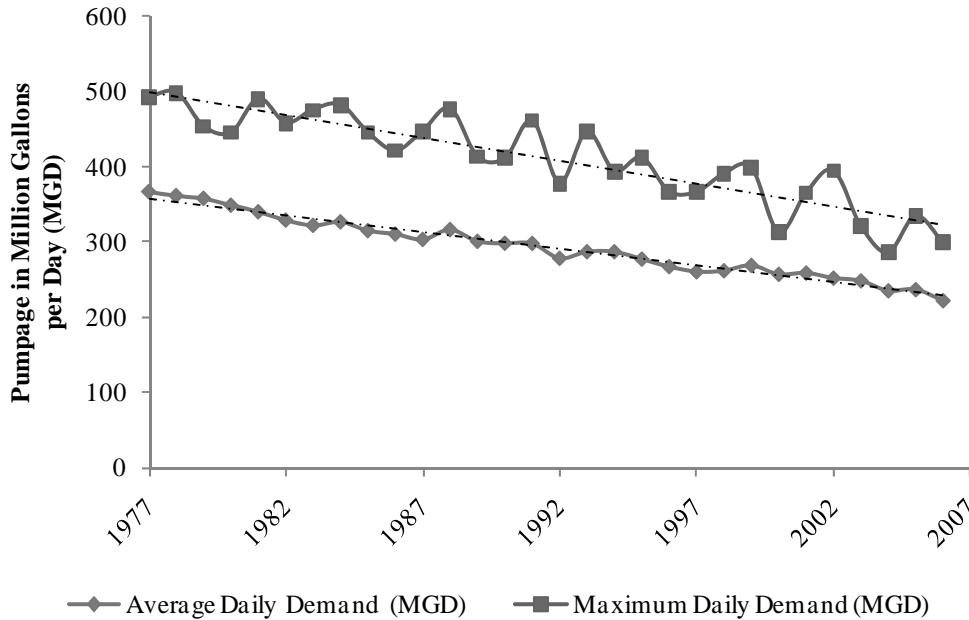


Figure B.9. Comparing the maximum day demand and the average daily demands (pumpage)

DALLAS WATER UTILITIES

The Dallas Water Utilities (DWU), founded in 1881, provides water and wastewater services to about 2.3 million people in Dallas and nearby communities. The city-owned DWU is operated as a self-supporting enterprise. The department receives no tax dollars and obtains its revenues through the sale of water and wastewater services.

The DWU currently obtains all its water supply from local surface water sources: Lake Ray Hubbard, Lake Lewisville, Lake Grapevine, Lake Ray Roberts, and Lake Tawakoni (DWU 2007).

Customer Classification

DWU employs five customer classes: residential, general service, municipal, optional general service, and wholesale. The wholesale customer class is comprised of 22 communities outside the city of Dallas that receive water service and 11 communities that receive wastewater service. DWU also has untreated water customers (DWU 2007).

Rate Structure

The DWU implements specific usage charges for each customer class. Rates for each customer class are determined by a cost-of-service study that assigns costs to each class based on the department’s cost to provide them with these services. For residential accounts, DWU implements a four-block inverted rate structure. The rate structure is detailed in [Table B.6](#). Additionally, customers are assessed a monthly service charge based on meter size. This charge does not include any usage. These rates are detailed in [Table B.7](#) (DWU 2007).

**Table B.6
Residential water rates**

	Rate per 1,000 Gallons
Up to 4,000 gallons	\$1.41
4,001 to 10,000 gallons	\$2.31
10,001 to 15,000 gallons	\$3.20
Above 15,000 gallons	\$4.10

**Table B.7
Customer service charge**

	Rate
5/8 Inch Meter	\$3.61
3/4 Inch Meter	\$4.23
1 Inch Meter	\$6.14
1 1/2 Inch Meter	\$11.56
2 Inch Meter	\$18.07
3 Inch Meter	\$43.37
4 Inch Meter	\$72.28
6 Inch Meter	\$144.55
8 Inch Meter	\$242.13
10 Inch Meter or larger	\$368.61

For the fiscal year 2005-2006, water and wastewater revenues totaled \$433.6M including a 7.3 percent increase in the retail rate. The utility receives other miscellaneous revenue from interest earnings, connection fees, and system improvement contributions. Historically, Dallas has experienced revenue fluctuations related to summer temperatures and rainfall in the region. The majority of the annual revenue is accounted for through sales to residential (35 percent), general service (40 percent), and wholesale customers (16 percent) (DWU 2007).

Annual revenue is used for the daily operating and maintenance costs of providing water and wastewater service to customers and maintaining debt service (principal and interest) on outstanding debt used to design and construct the facilities necessary to provide these services. Additionally, revenues are used for cash funding for capital improvement facilities not funded through the sale of revenue bonds or other debt (DWU 2007).

Residential Consumption

From 1996 to 2006, residential accounts increased an average of 0.53 percent annually. Consumption per account fluctuated between 1996 and 2005, but consumption increased an average of 1,031 gallons annually, [Figure B.10](#). Multi-family accounts increased an average 1.71 percent annually between 1999 and 2006. Consumption for multi-family accounts decreased an average of 5,961 gallons annually during this period, [Figure B.11](#).

Commercial Consumption

The number of commercial accounts increased an average of 1.09 percent annually, from 1996 to 2006. During this period, commercial consumption decreased an average of 3,507 gallons annually. Consumption per commercial account peaked at 714,193 in 2000 ([Figure B.12](#)).

Industrial Consumption

From 1996 to 2006, industrial accounts decreased an average of 5.02 percent annually. In 2002 the Dallas Water Utilities undertook a meter updating and customer reclassification project. This resulted in a 24 percent decrease in accounts between 2002 and 2003. Consumption per account increased an average of 3.1 million gallons annually between 1996 and 2006 ([Figure B.13](#)).

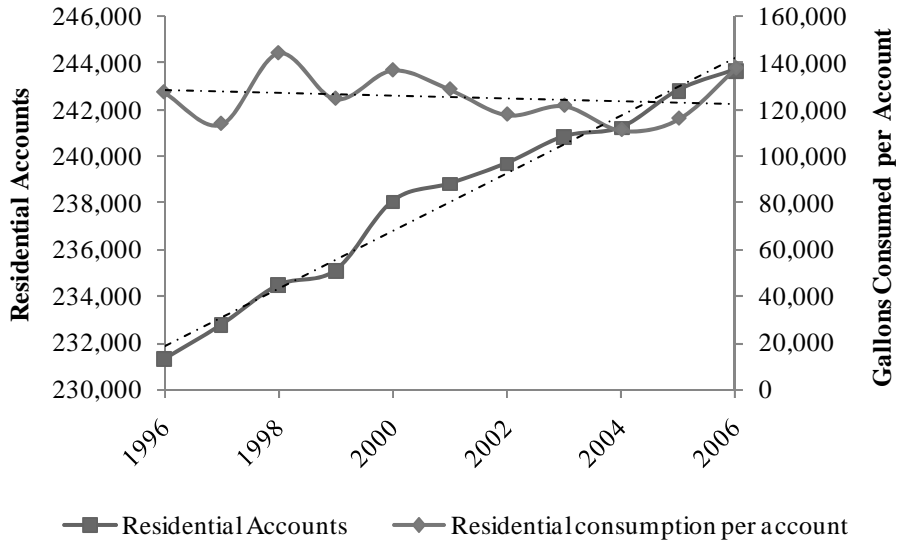


Figure B.10. Dallas residential accounts and consumption trends

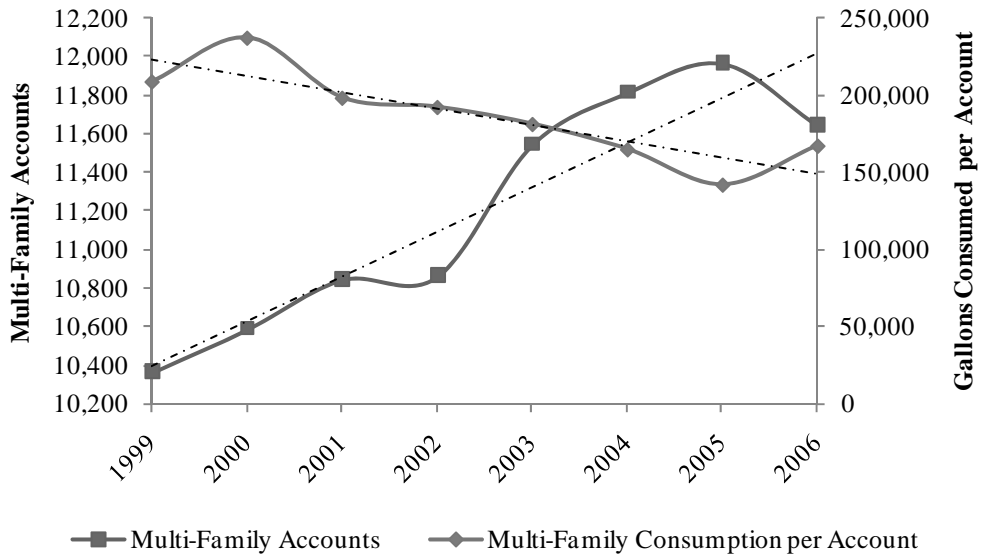


Figure B.11. Dallas multi-family accounts and consumption trends

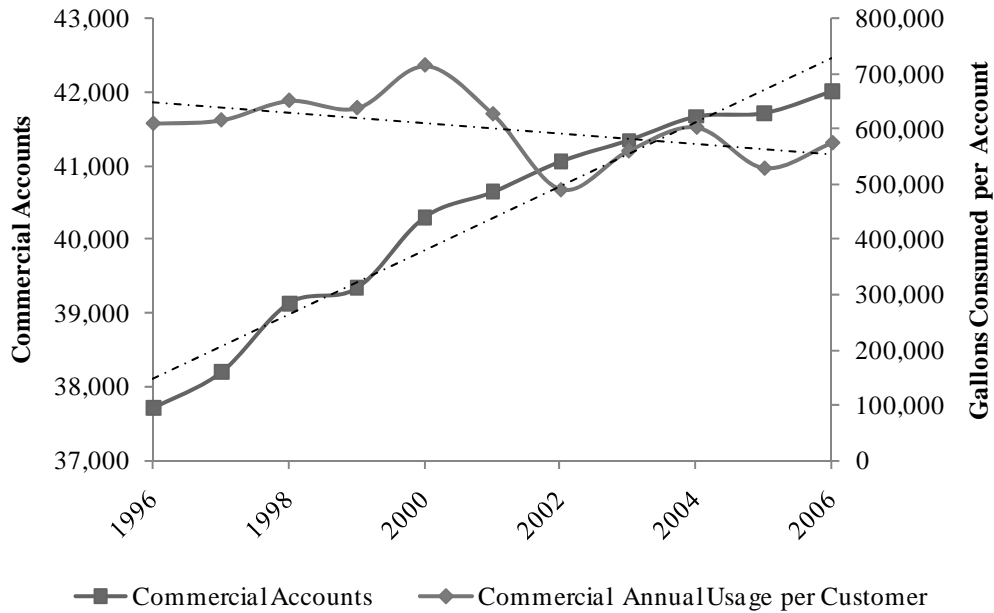


Figure B.12. Dallas commercial accounts and consumption trends

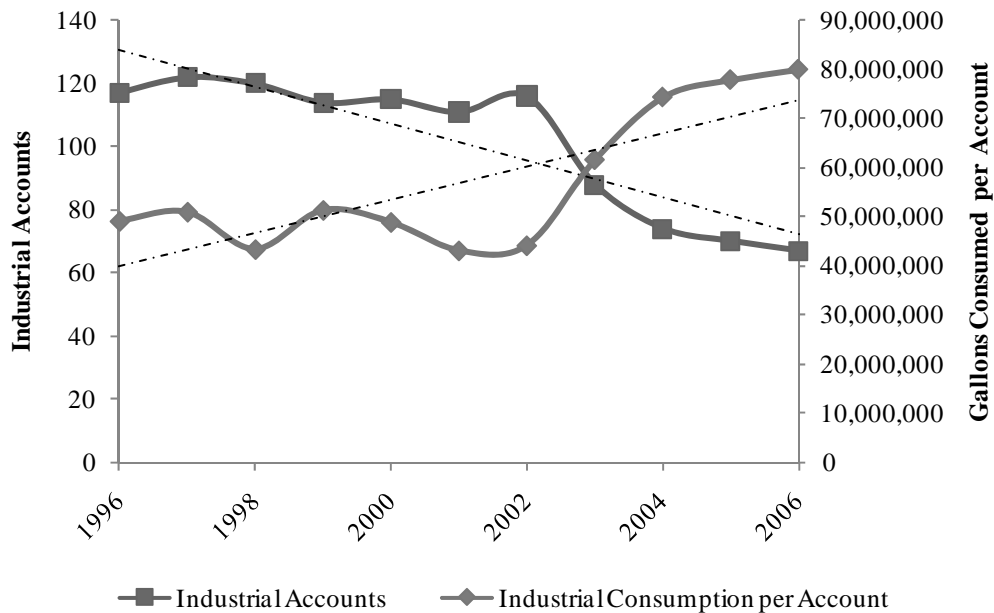


Figure B.13. Dallas industrial accounts and consumption trends

Average and Maximum Daily Demand

From 1975 to 2006, the average daily demand was 337 mgd, while the maximum demand averaged 554 mgd, with a peak demand of 790 mgd in 2000 (Figure B.14). Overall, both maximum and average daily demands showed a positive trend.

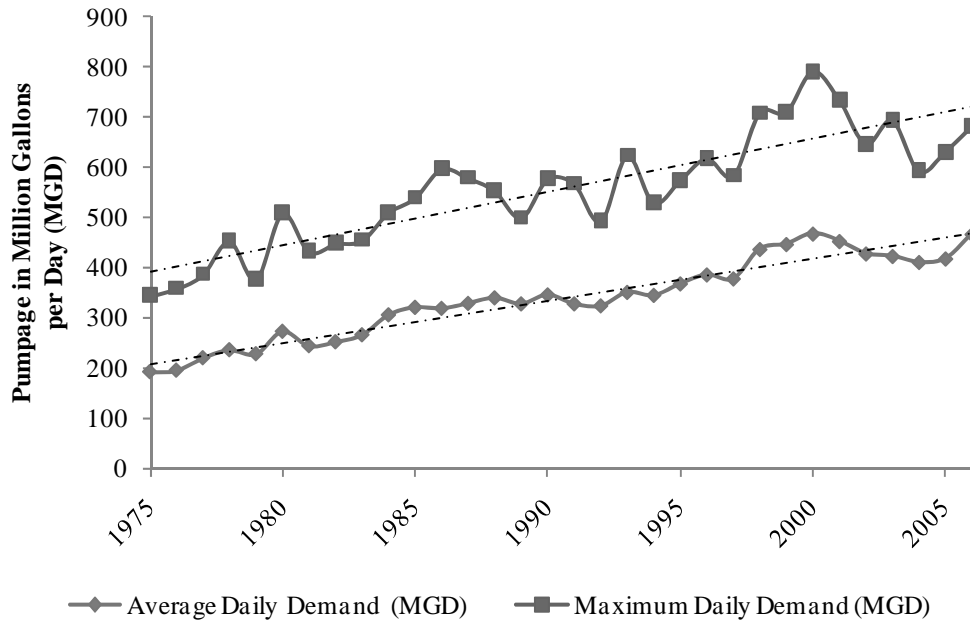


Figure B.14. Comparing the maximum day demand and the average daily demands (pumpage)

LAS VEGAS VALLEY WATER DISTRICT

The Las Vegas Valley Water District (LVVWD) is a quasi-municipal corporation that began providing water to the Las Vegas Valley in 1954. The district now provides water to more than 1 million people in southern Nevada. The Clark County Commissioners serve as the LVVWD Board of Directors. The board appoints the general manager, who carries out day-to-day activities (LVVWD 2007a).

Nearly 90 percent of Las Vegas drinking water comes from the Colorado River via Lake Mead. The remainder comes from a deep groundwater aquifer beneath the Las Vegas Valley, which is used primarily during summer months to meet peak water demand (LVVWD 2007a).

Population Growth

Population growth in the Las Vegas Valley was fairly slow during the first half of the 20th century, but as the gaming and tourism industry blossomed, population growth began to increase rapidly. The population for Clark County was 48,289 in 1950. Las Vegas accounted for 24,624 of the total population. In 1960, Clark County's population was 127,016 and the population of Las Vegas was 64,405 (Acevedo et al. 1997).

In the 1960s and 1970s growth continued. By 1980 Clark County's population was 463,087 and the population of Las Vegas was 164,674. Growth has been even more dramatic in the last several decades. Since 1980, population has more than doubled. Today, the Valley's population tops 2 million, but that does not include the tourist population, which itself is estimated at 39 million annually. It is the fastest-growing metropolitan area in the country. One estimate is that the population will double by 2015 (Acevedo et al. 1997).

The unprecedented growth within the Las Vegas Valley has created an expanding customer base for the LVVWD, with increased demands for service in all parts of the valley.

This growth, combined with the community's response to drought, meaningful reductions in water use, and no increases in water rates before 2006, has led to a less certain revenue environment (Acevedo et al. 1997). Only recently has LVVWD implemented rate increases, one in February of 2007 and the latest in May of 2008.

Water Conservation

Local water providers and wastewater agents in Nevada formed the Southern Nevada Water Authority (SNWA) in 1991 to address the area's unique water needs on a regional basis. The SNWA responsibilities include managing current water resources, ensuring that southern Nevada has enough water for the future, and overseeing a conservation plan. LVVWD customers are eligible for numerous water-saving rebates and services through the SNWA. The SNWA also maintains regional water treatment and delivery systems and monitors regional water quality to ensure that area water meets or exceeds the standards of the Safe Drinking Water Act (SNWA 2007).

Over the past several years, southern Nevada has taken dramatic steps to increase its water conservation in response to the drought. Community-wide drought messaging, irrigation watering restrictions, and higher water rates have resulted in substantial conservation gains, surpassing long-term goals established for the region in the mid 1990s (SNWA 2007).

Eliminating system loss from LVVWD's distribution system is critical to sustaining the conservation achievements of the past two to three years. In 2004 and 2005, the LVVWD invested \$1.6 million to automate leak detection and identification. This project is comprised of 7,857 monitoring units installed throughout the district's service area. The units monitor water distribution pipelines and identify locations where an unobservable underground water leak might exist. In addition to the leak detection program, the LVVWD has been converting conventional meters to the Automated Meter Reading (AMR) System for several years and expects to have the system completely deployed by the end of fiscal year 2006/2007. Newly implemented service rules require developers to pay for the installed cost of the AMR units on all new water service connections (SNWA 2007).

Regional conservation efforts over the last three years have yielded a significant increase in water savings by LVVWD customers. Although conservation achievements had fallen below long-term regional goals from 2000 through 2002, over the last four years, the average monthly water use of a single-service residential customer declined significantly – from approximately 17,900 gallons per month to 13,800 gallons per month, or a 23 percent reduction (SNWA 2007).

Rate Structure

LVVWD's water rates cover only the costs of water delivery and the maintenance and building of facilities. The current four-block inclining rate structure has been in place since 1996. Prior to 1996, the district implemented a three-block inclining system. The rates listed in [Table B.8](#) were effective as of Jan. 1, 2007. Additional monthly charges include a SNWA commodity charge of \$0.10 for every 1,000 gallons used. In addition, there is a SNWA reliability surcharge, which is calculated as a percentage of water usage plus service charges: .25 percent for residential and 2.5 percent for commercial, respectively (LVVWD 2007b).

Table B.8
Common residential meter sizes rate structure

Meter Size (inches)	Daily Service Charge	Tier	Threshold (x 1000 gallons)	Rate (per 1,000 gallons)
5/8"	\$0.1347	1	0 - 5	\$1.10
		2	5.01 - 10	\$1.89
		3	10.01 - 20	\$2.62
		4	20.01 and over	\$3.48
1"	\$0.1551	1	0 - 7.5	\$1.10
		2	7.501 - 15	\$1.89
		3	15.01 - 30	\$2.62
		4	30.01 and over	\$3.48

Customer Classification

The LVVWD bases customer classification on the meter size associated with the account and the function of the property indicated by the customer during activation of services. Historically, the rate thresholds had been set based on meter size equivalency. Currently, LVVWD implements 15 customer classes, but typically uses seven on a regular basis (LVVWD 2007a). LVVWC has begun consolidating the tier thresholds for single-family residential accounts to achieve equity among customers and to target conservation of discretionary water use. Under the current rate structure, residents with a ¾-, 1-, 1½- or 2-inch meter are allowed proportionately greater amounts of water in the lower-priced rate tiers than a 5/8-inch meter (LVVWDc 2007).

Water Quality

Water delivered by the LVVWD meets or surpasses all state and federal drinking water standards. According to the EPA’s Safe Drinking Water Information System (SDWIS), the Las Vegas Valley Water District has no health-based violations (LVVWD 2007a). The LVVWD has experienced nine monitoring and reporting violations over the past 10 years.

Residential Consumption

The LVVWD provided single-family and total residential consumption data from 1978 to 2006. The total residential customer classification includes both single and multi-family customers.

For single-family customers, accounts increased 381 percent between 1978 and 2007. During this period, consumption per account fluctuated annually, with an overall negative trend. Consumption during this period peaked at 286,660 gallons per account in 1989. Since reaching this peak 1989, consumption per account has steadily decreased through 2007. Overall, consumption per account decreased an estimated 3,484 gallons from 1978 to in 2007 (Figure B.15).

For multi-family data, the project used the difference between the single-family and total residential data provided by the LVVWD. The extracted multi-family account and annual usage data serve only as an estimate. The amount of water consumed per meter varies with the number of units being served by the meter. Both multi-family account and usage experienced a positive trend between 1978 through 2007 (Figure B.16). Multi-family accounts increased an estimated 112 per year. Multi-family usage per account increased an estimate 54,029 gallon annually.

Average and Maximum Daily Demands

Figure B.17 compares the annual changes in the maximum and average daily demands for all accounts. Maximum demand has an overall upward trend until 2003, when the SNWA declared a drought warning, which implemented water usage restrictions and water waste fines for violators.

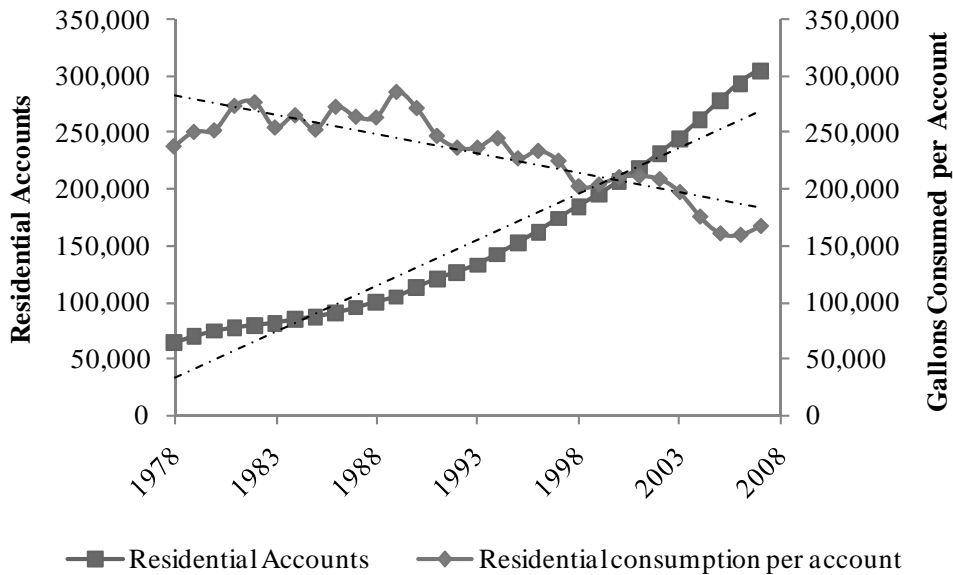


Figure B.15. Las Vegas Valley Water Department single-family consumption and account trends

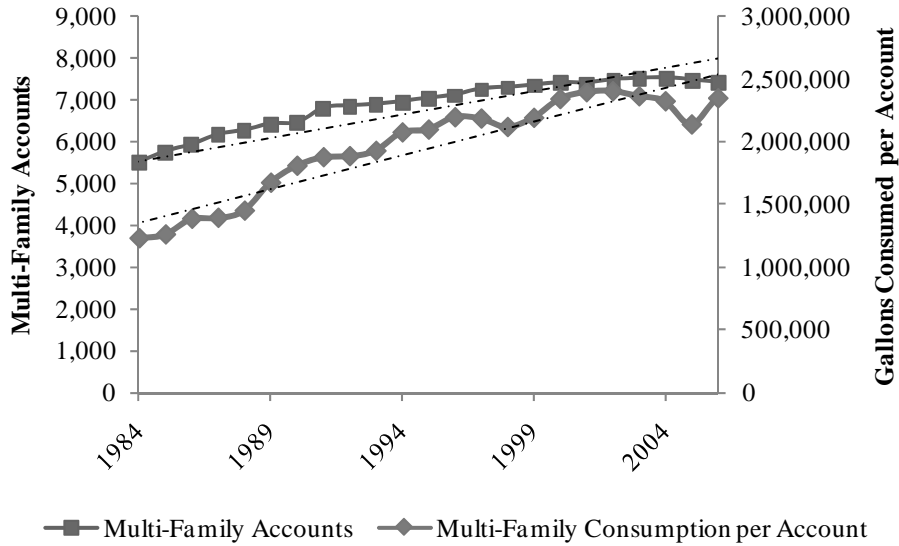


Figure B.16. Las Vegas Valley Water Department multi-family consumption and account trends

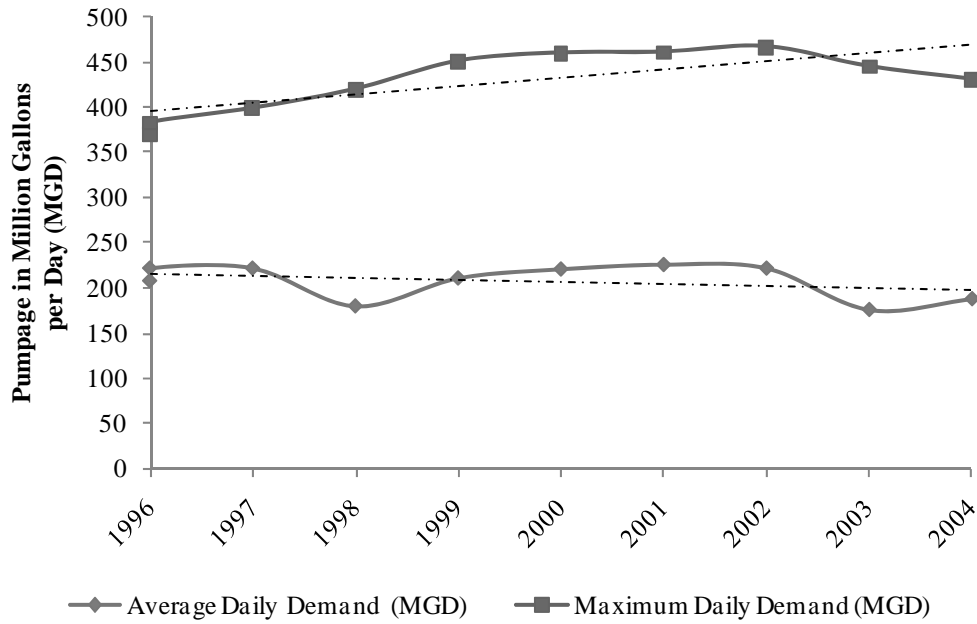


Figure B.17. Comparing the maximum day demand and the average daily demands (pumpage)

Louisville Water Company

The Louisville Water Company (LWC) is a municipal corporation that provides water to the more than 840,000 people in Louisville, Kentucky, through over 3,900 miles of pipeline. The company also supplies water service to parts of Oldham and Bullitt counties in Kentucky. Additionally, the LWC provides wholesale water to surrounding Shelby, Spencer, and Nelson Counties of Kentucky. The LWC has been in operation since 1860 (LWC 2006a).

The Louisville Water Company identifies seven customer-billing classes: residential, commercial, industrial, fire hydrant, fire service, municipal, and wholesale. Types of services offered by the LWC include domestic, fire, irrigation, combined residential domestic/fire, and combined commercial domestic/fire (Coomes et al. 2005). For the purpose of this research, the analysis focuses on the residential, commercial, and industrial customers.

All water supplied by the Louisville Water Company is measured by meters installed and maintained by the LWC. The LWC calculates the amount of water a premise uses over 1- or 2-month billing cycles as indicated by the on-premise meter. A meter can be of varying sizes in diameter, from 5/8" to 12", depending on the volume of water needed by the customer. An industrial manufacturing customer whose production process depends on large volumes of water would typically have a meter or combination of meters of at least 4" in diameter, while a single-family residential customer would normally use 5/8" to 5/8" X 3/4" to 3/4" meters (Coomes et al. 2005).

Customer Classification Issues

Many customers classified as commercial are in fact multi-family housing facilities rather than typical commercial business establishments. This classification issue has implications on studies of water usage patterns due to the blending of accounts used for commercial establishments with accounts used primarily for residential purposes. Until the 2005 study conducted by the University of Louisville, the extent of the classification issue was unknown. The study examined a random sample of 500 commercial customers and found that the sample contained 162 premises with 1,528 house units. The majority of commercial premises identified as residences were multi-family rental or condominium properties. The sample results imply that about 15 percent of all housing units in Jefferson County are counted under the commercial, rather than residential, customer class in the company's database. Interestingly, the average commercially classified housing unit uses more water than the average residentially classified housing unit (Coomes et al. 2005).

There are several reasons why such properties may be classified commercial in the LWC database. According to the 2005 Louisville Water Company Service Rules and Regulations, the distinction between residential and commercial properties is vague in regard to apartment complexes and condominiums. For example, condos are considered residential if they are properties held in common, while condominium units are categorized as commercial if owned by the developer. The reason for the differentiation is two-fold: first, the need for compliance with state tax laws, and second, a result of legacy information-technology applications (Coomes et al. 2005).

In compliance with state tax laws, the Louisville Water Company classifies apartment complexes, some condominium groupings, and other multi-family housing units as commercial if the real estate company or homeowner's association overseeing such properties sets up a single

account for multiple rental or condo units. In such cases, all units are served by one meter and individual water charges are passed on to the occupants as a portion of the monthly rental or maintenance fees. The State of Kentucky requires the LWC to levy a sales tax on water service to these developments (Coomes et al. 2005).

Rate Structure

The LWC utilizes a utility approach to determine cost of service. This approach involves measuring revenue requirements of a utility without allocating those revenue requirements among classes of customers served (AWWA 2000, LWC 2006a). Currently, the LWC utilizes annual budget reports to determine cost of services and an annual rate study in determining rate increases (LWC 2006a).

The LWC does not provide subsidized water programs for low-income customers. The LWC delineates its service district into five service areas. These service areas are differentiated by wholesale customers that were acquired in 2000 and later. Each acquired service area outside of the retail service area pays the same rates as when the LWC acquired them to fund the capital improvements required to bring their service level to LWC’s standards. Also of note, customers located at a higher elevation than the general pressure plan pay a surcharge of \$0.27 per thousand gallons (LWC 2006a).

Annually, a budget report is developed for the LWC. Based upon the results of the budget report, an annual rate study is conducted. Proposed rate changes take effect on Jan. 1 of the following year. In 2007, the average monthly rates increased by 6.5 percent. The percent of rate changes can vary by customer class, depending on the predicted cost of services for a particular block in the rate structure (LWC 2006a).

LWC employs a seven-block rate structure. This block structure is applied to all customer classes. An inclining block rate structure is used for the first 200,000 gallons consumed. The first three blocks service all residential customers. After 200,000 gallons, the rate structure becomes a declining-block rate structure. The block rate structure utilized by the LWC addresses the issue of cost or service inequities and concerns of commercial and industrial customers with relative constant consumption patterns (low peak demands but high total usage). The current rate structure has been in place for over 30 years (LWC 2006a). See [Table B.9](#).

Table B.9
LWC Rate Structure as of Jan. 1, 2007

Categories	Thousand Gallons Per Month	Cost per Thousand Gallons
First	<3	At \$2.03 per Thousand Gallons
Next	3	At \$2.22 per Thousand Gallons
Next	194	At \$2.50 per Thousand Gallons
Next	1,300	At \$2.36 per Thousand Gallons
Next	3,500	At \$2.16 per Thousand Gallons
Next	5,000	At \$1.58 per Thousand Gallons
All Over	>10,000	At \$1.44 per Thousand Gallons

Residential Consumption

The number of residential customers increased 38 percent from 1975 to 2005. This is related to the extension of water mains throughout Jefferson County and the conversion of previous wholesale customer accounts through mergers and acquisitions. During this time, consumption per account showed fluctuation annually but exhibited an overall negative trend (Figure B.18).

Commercial Consumption

The number of commercial customers has increased 52 percent from 1975 to 2005. During that time, consumption per account increased until 2000, at which point it leveled out and began a decline (Figure B.19).

Industrial Consumption

The number of industrial customers has decreased 29 percent from 1975 to 2005. During that time, consumption exhibited a negative trend (Figure B.20).

Average and Maximum Daily Demand

The average daily demand has remained relatively constant between 1975 and 2005. During the same period the maximum day demand fluctuated annually and exhibited an overall increasing trend (Figure B.21).

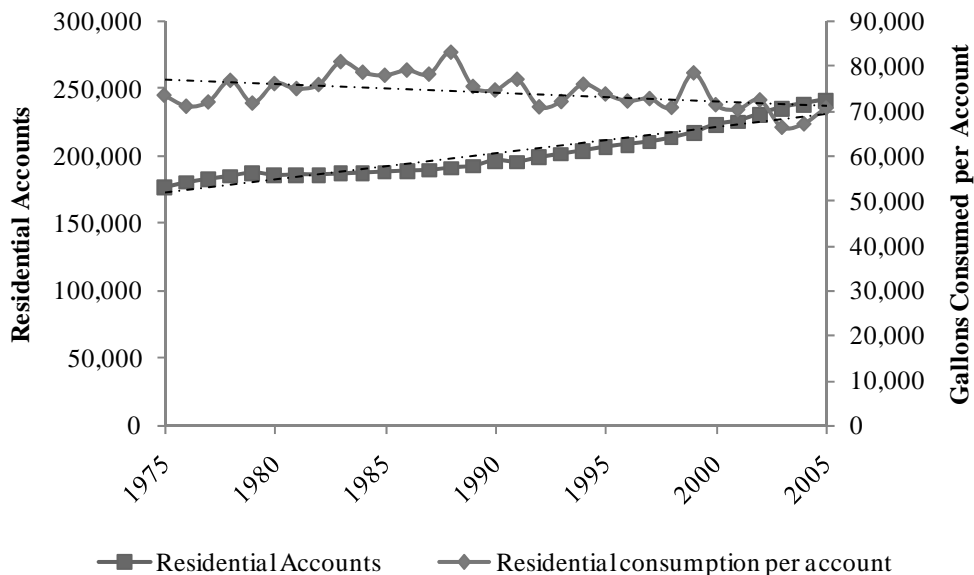


Figure B.18. Louisville residential water consumption and account trends

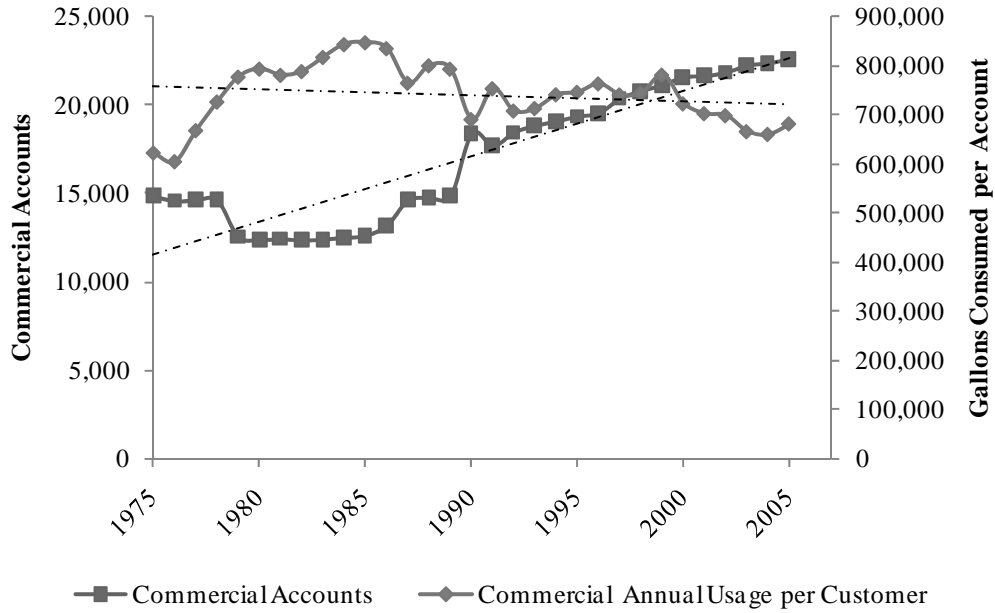


Figure B.19. Louisville commercial water consumption and account trends

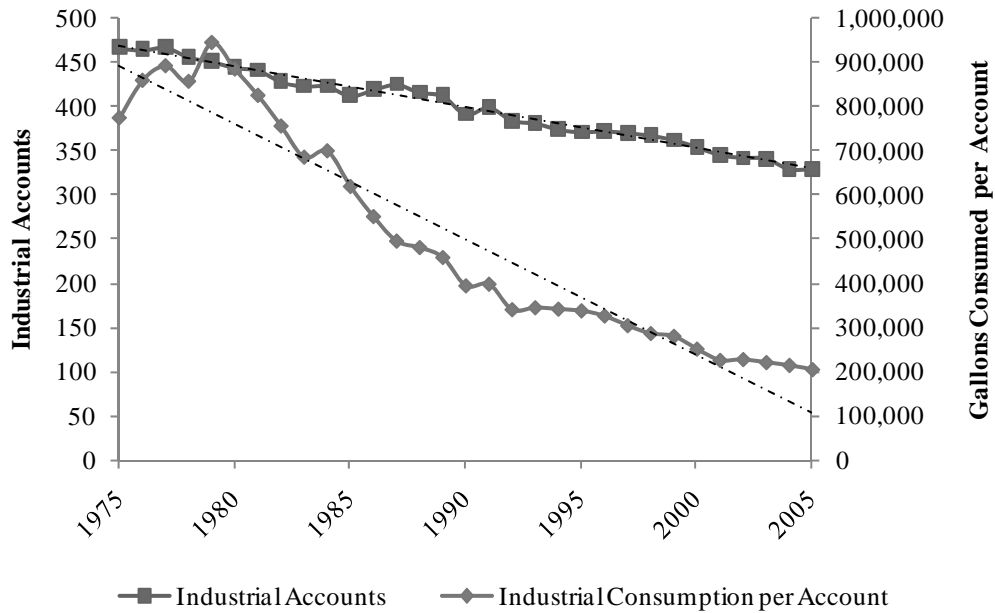


Figure B.20. Louisville industrial water consumption and account trends

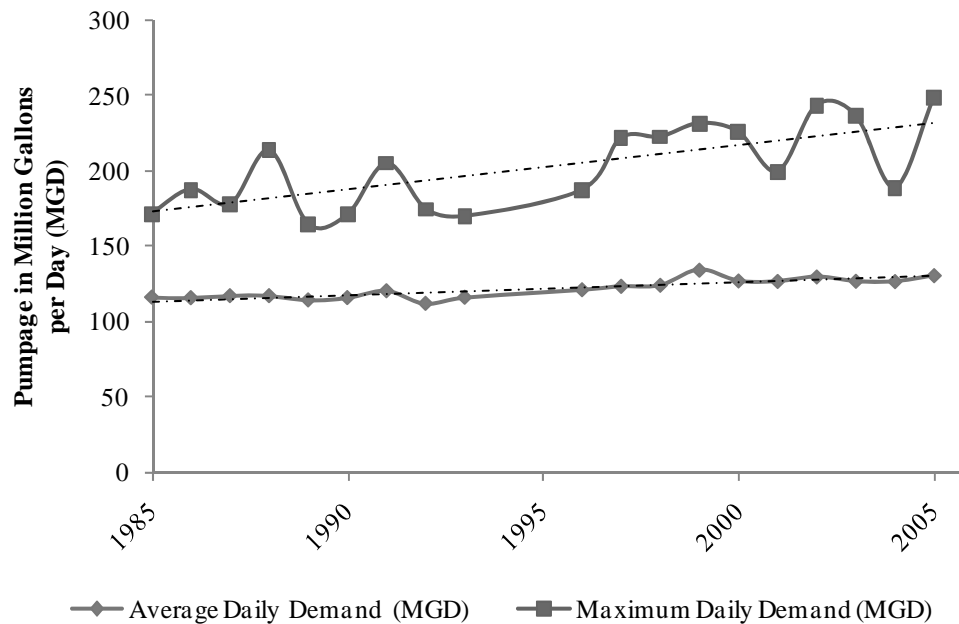


Figure B.21. Comparing the maximum day demand and the average daily demands (pumpage)

SOUTH CENTRAL CONNECTICUT REGIONAL WATER AUTHORITY

The South Central Connecticut Regional Water Authority (SCCRWA) was established in 1977. As of 2006, the SCCRWA had served approximately 108,101 customers. This represents approximately 395,282 individuals in 12 municipalities in the south-central region of Connecticut. The city of New Haven is the most populous municipality in the service area (SCCRWA 2007b).

For its water supply, the SCCRWA currently utilizes the watersheds that lie between the Naugatuck River and the Connecticut River, extending to the Long Island Sound. The water supply is obtained from four surface water supply systems and five well fields. When taking into account safe yield limitations, the active sources supply 73.7 million gallons per day (mgd). This is approximately 25 percent greater than the highest annual average draft of 58.9 mgd which occurred in 1988. Approximately 41 percent of the mains in the system are less than 40 years old, and approximately 67 percent of the mains are less than 60 years old (SCCRWA 2007b).

Unaccounted-for Water

The SCCRWA has responded to increases in unaccounted-for water through increased monitoring and investigative work. An internal water-loss performance benchmark has been established. In 2002, the SCCRWA began tracking gross unaccounted-for water each month. During 2006, the total gross volume of unaccounted-for water, including water losses, amounted to 3 billion gallons, or 15.1 percent of the water produced and admitted into the water system. This represents an increase of approximately 6 percent from the 2.83 billion gallons of gross unaccounted-for water in 2004 (SCCRWA 2007b).

The SCCRWA continues its internal leak detection, meter sizing and replacement, main rehabilitation, and other practices that have been effective in reducing unaccounted-for water. In

addition to internal programs for investigating unaccountable-for water loss, the Authority continues to participate in Water Research Foundation projects concerning international techniques for water loss reduction (SCCRA 2007b).

Rate Structure

Currently the SCCRWA has the power to set just and equitable rates and charges, free from review or approval by the state’s Department of Public Utility Control or any successor board or commission. All rate increases are subjected to approval by the Representative Policy Board (RPB). Rates are increased as needed, historically about every two years. Rates changes are based on cost-of-service studies (SCCRWA 2007b).

The SCCRWA implements a declining-block structure with two blocks: \$2.32 per 100 cubic feet for 1 million cubic feet or less and \$1.76 per 100 cubic feet for anything over 1 million cubic feet. These rates are charged either quarterly or monthly and a service charge is added each billing cycle. The service charge is based on the meter size for that customer. The two-block structure has been in place since 1992 (SCCRWA 2007b).

Customer Classification

Customers of the SCCRWA are classified according to the nature of their use of water. All homes, dormitories, and apartment buildings are classified as residential. Multi-family customers are classified as residential. These classes have been maintained by the SCCRWA for decades. All manufacturing enterprises in which water is used as part of the manufacturing process are classified as industrial. The commercial classification includes all businesses and institutional enterprises not classified under industrial. Water sales to governmental units are classified as sales to public authority (Table B.10). For 2006, residential accounts accounted for 61 percent of overall water consumption and approximately 65 percent of overall water revenue (SCCRWA 2007b). Table B.11 provides an overview of the historic rate changes by years. Between 2001 and 2006, the number of customers served by the SCCRWA increased by approximately 2 percent.

Table B.10
Breakdown of classification of customers

Classification	Number of Customers
Residential	98,123
Commercial	6,469
Industrial	216
Public Authority, Private and Public	3,293
Fire Protection	
Total	108,101

Table B.11
Rate increases

Amount of Increase (%)	Effective Date
14.5	1980
10.8	1981
5.2	1983
5.1	1984
3.1	1986
7.2	1988
9.5	1990
7.4	1991
5.3	1992
4.6	1996
3.7	1999
2.5	2000
4.5	2004
5.1	2005
4.6	2007

Residential Consumption

The SCCRWA experienced an increase of 21.6 percent in residential accounts from 1977 to 2006. The residential account and consumption data for 1975 through 1977 were excluded from the study because during this period commercial accounts were included under the residential classification. During this period consumption fluctuated. Overall, residential consumption per residential account decreased an average of 0.07 percent per year (Figure B.22).

Commercial Consumption

The number of commercial accounts increased by over 30 percent from 1977 to 2006. During this period commercial annual consumption fluctuated but saw an overall decreasing trend in commercial consumption (Figure B.23).

Industrial Consumption

The SCCRWA experienced a 33 percent decrease in industrial accounts, from 323 in 1975 to 216 in 2006. During this period, consumption per industrial account decreased (Figure B.24). Overall, industrial consumption decreased by 49.7 percent between 1975 and 2006.

Maximum and Average Demand

The average and maximum daily demands of the SCCRWA are compared in Figure B.25. The maximum day demand fluctuates during the time series provided, with a peak of 98.4 mgd in 1999. This year was considered a drought year, with an average monthly Palmer Severity Drought Index score of -1.12. During the period, the average daily demand has remained relatively constant.

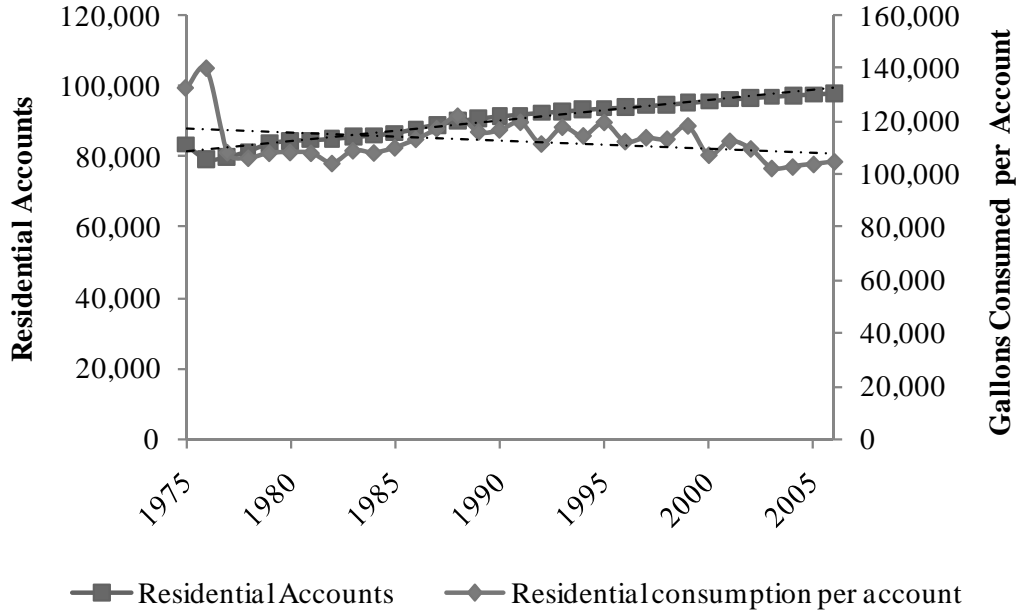


Figure B.22. Regional Water Authority residential water consumption and account trends

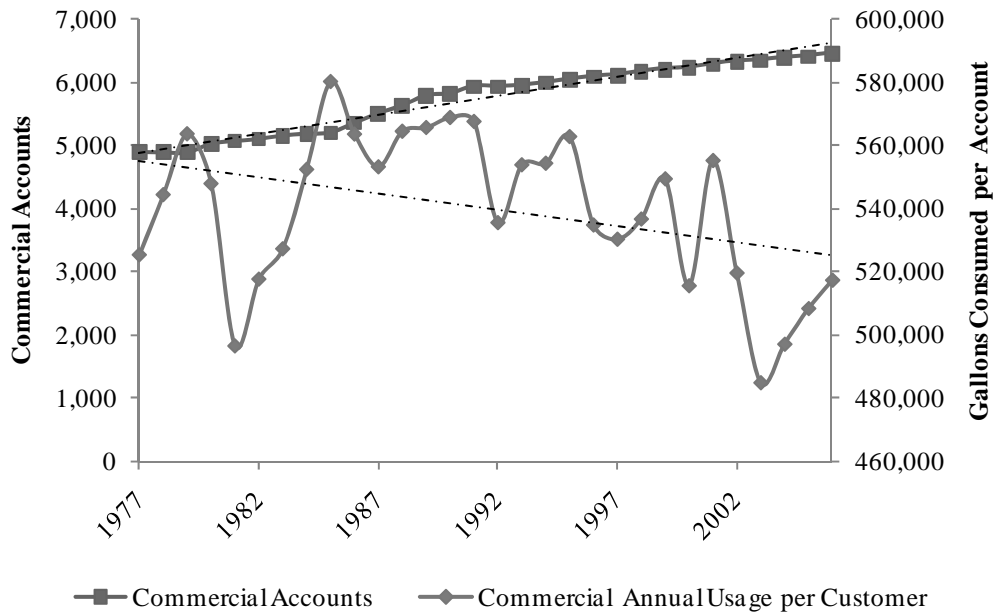


Figure B.23. Regional Water Authority commercial residential water consumption and account trends

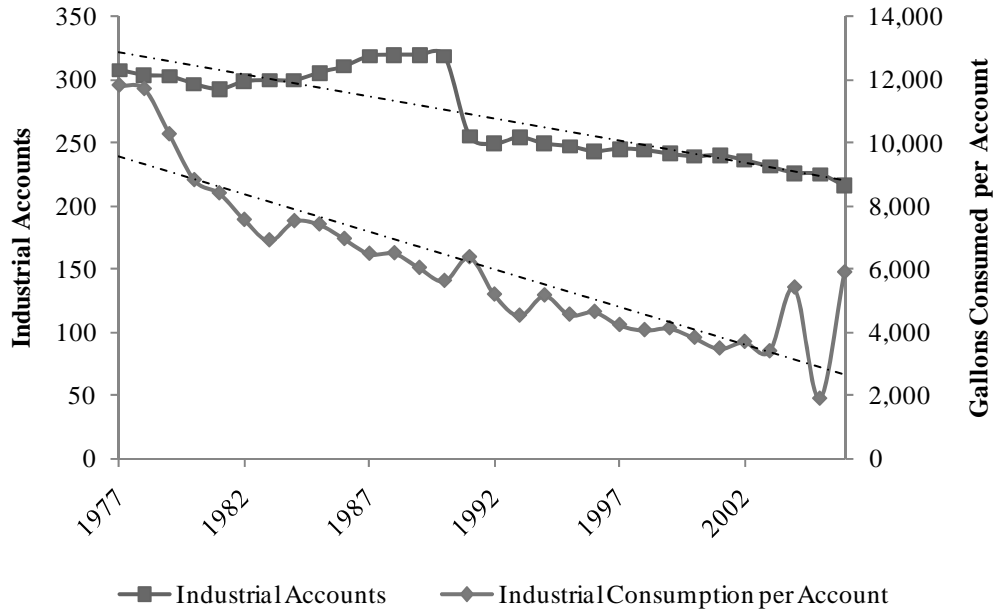


Figure B.24. Regional Water Authority industrial water consumption and account trends

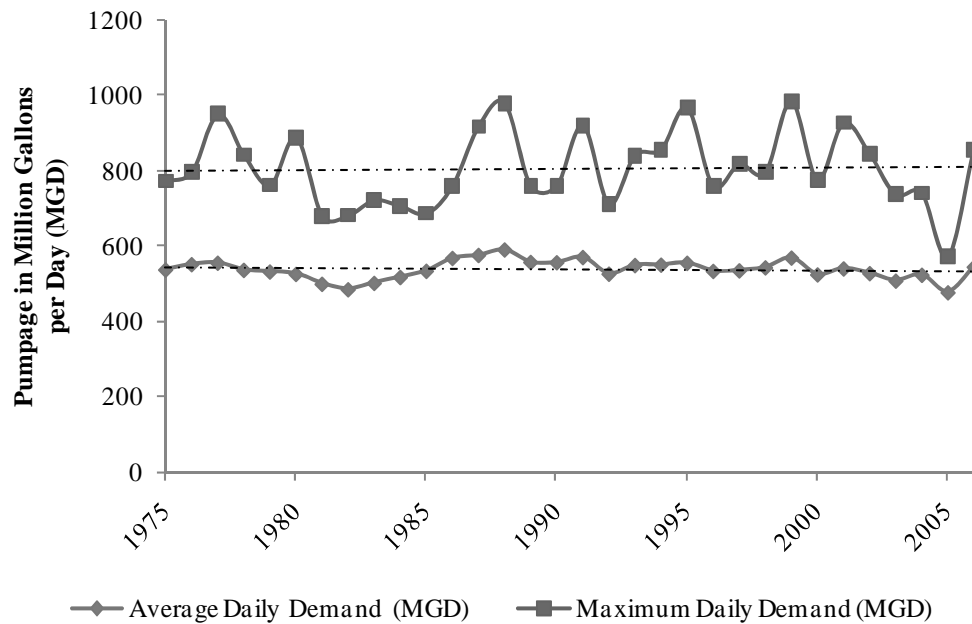


Figure B.25. Comparing the maximum day demand and the average daily demands (pumpage)

PHILADELPHIA WATER DEPARTMENT

The Philadelphia Water Department (PWD) began service in 1801. Currently, PWD supplies water to the city of Philadelphia and portions of Montgomery, Delaware, and Bucks counties of Pennsylvania. The water system served approximately 1,672,000 accounts in 2000, of which 90 percent were located within the Philadelphia city limits. PWD also provides wastewater service to Philadelphia and to 10 municipalities and authorities located in Montgomery, Delaware, and Bucks counties of Pennsylvania. As of June 2006, PWD served approximately 475,300 retail customers through 3,014 miles of mains. In addition, as of June 2006, approximately 16,200 accounts were in non-service status due to service shutoffs for non-payment (PWD 2007b).

Approximately 56 percent of PWD's water supply comes from the Delaware River and the balance from the Schuylkill River. Currently, the city is authorized by applicable regulatory authorities to withdraw up to 390 mgd (million gallons per day) from the Delaware River and up to 258 mgd from the Schuylkill River. The storage capacity for treated and untreated water in the combined plant and distribution system totals 1,065.5 million gallons. In fiscal year 2006, PWD distributed 92,650 million gallons of water at an average rate of 253.8 mgd. The maximum daily water production requirement experienced by PWD in fiscal year 2006 was 300 million gallons and occurred on August 14, 2005 (PWD 2006, PWD 2007b).

The water provided by PWD meets all physical, chemical, radiological, and bacteriological water-quality standards established by the United States Environmental Protection Agency (USEPA) under the Safe Drinking Water Act and by the Pennsylvania Department of Environmental Protection (PaDEP) (PWD 2005).

PWD has been a participant in the development of drought management plans which, during drought periods, allocates Delaware River Basin water resources among jurisdictions dependent on the Delaware River for water. These plans have been used to effectively manage past drought emergencies and are expected to adequately address future drought emergencies. In addition, the city is able to draw water from both the Schuylkill and the Delaware River systems and is not, therefore, dependent on a single source of supply (PWD 2007b).

Non-Revenue Water

The PWD was the first water utility in the United States to adopt the new best management water audit approach published by the International Water Association (IWA) and the American Water Works Association (AWWA) in 2000. This method accounts for all water as either consumption or losses. Apparent losses are the paper losses due to customer meter inaccuracies, billing error, and unauthorized consumption. These losses cause water utilities to lose a portion of the revenue to which they are entitled and the aggregate measure of customer consumption to be understated. Real losses are physical losses, largely leakage, which cause excess production costs for water utilities (PWD 2007b). The water audit methodology distinguishes between the value of treated water supplied and customer-billed authorized consumption. For some utilities, including PWD, these two values can be dramatically different because of the amount of non-revenue water. For its fiscal year 2006 period, PWD supplied water averaging 253.7 million gallons per day (mgd) but billed an average of 177.0 mgd. The difference of 76.7 mgd represents non-revenue water. PWD determined that roughly 61 mgd of this amount occurs as distribution system leakage and approximately 15.7 mgd occurs as apparent losses of billing system data handling errors, unauthorized consumption, and a small portion as customer meter inaccuracy.

Water Rates

PWD is empowered and required to establish rates for water and wastewater service, in accordance with standards ordained by city council. General service customers' water rate consists of a service charge related to the size of the meter, plus a schedule of quantity charges for all water use. The sewer rate is similar in form. On July 21, 2005, the water commissioner directed that there be a 4.2 percent or \$2.14 monthly increase starting July 1, 2007, for typical customers. This rate increase is the third in a series of rate increases in place since 2005. Similar increases were directed for other customers. This followed a 12.8 percent rate increase, effective Feb. 1, 2005 (PWD 2007b).

Customer Classification

Within the billing system for the Philadelphia Water Department, customers are classified into two groups: small meter accounts for customers with meters equal to or smaller than 1", and large meter accounts for customers with meters greater than 1". In general, those accounts classified as small meter serve residential customers. Those under the large meter classification serve commercial and industrial accounts (PWD 2007b).

Between 1997 and 1999, PWD and the city's Water Revenue Bureau completed installation of the country's largest water utility Automatic Meter Reading (AMR) System, installing over 425,000 AMR units on the city's residential accounts. All residential water meters were replaced as part of this project. Since 1999, PWD has gradually implemented AMR on the remaining large meters and is approximately 95 percent complete with these installations (PWD 2007b).

Residential Consumption

For the purpose of this study, those accounts classified as small meter were classified as residential. This broad classification includes single-family and multi-family accounts, but not apartment complexes, which typically utilize meters great than 1". The number of small meter accounts decreased 5 percent between 1985 and 2006. Over this period, consumption per account remained relatively flat. Between 1985 and 2006, the average annual consumption was 77,412 gallons per account (Figure B.26). Consumption per account decreased .3 percent between 1985 and 2006. Upon examining the consumption trends between 2000 and 2006, post AMR conversion, consumption decreased an average 2.7 percent annually.

Commercial and Industrial Consumption

Under the PWD billing system, those accounts greater than 1" are categorized as large meter customers. This classification includes apartment complexes, commercial, and industrial accounts.

The number of large meter accounts decreased an average of 88 accounts per year (Figure B.27). Between 1985 and 2006, consumption decreased an average 1.03 percent annually. Upon examining the consumption trends between 2000 and 2006, post AMR conversion, consumption increased an average 1.85 percent annually.

Average and Maximum Daily Demand

Both the maximum and average daily demands have steadily decreased from 1980 to 2006 (Figure B.28). While the maximum demand fluctuated annually, it experienced an overall negative trend. The average daily demand was relatively constant, with a negative trend. For comparison, the total-billed authorized consumption (mgd) is included in Figure B.28. Note that the billed-authorized consumption is below the average daily demand.

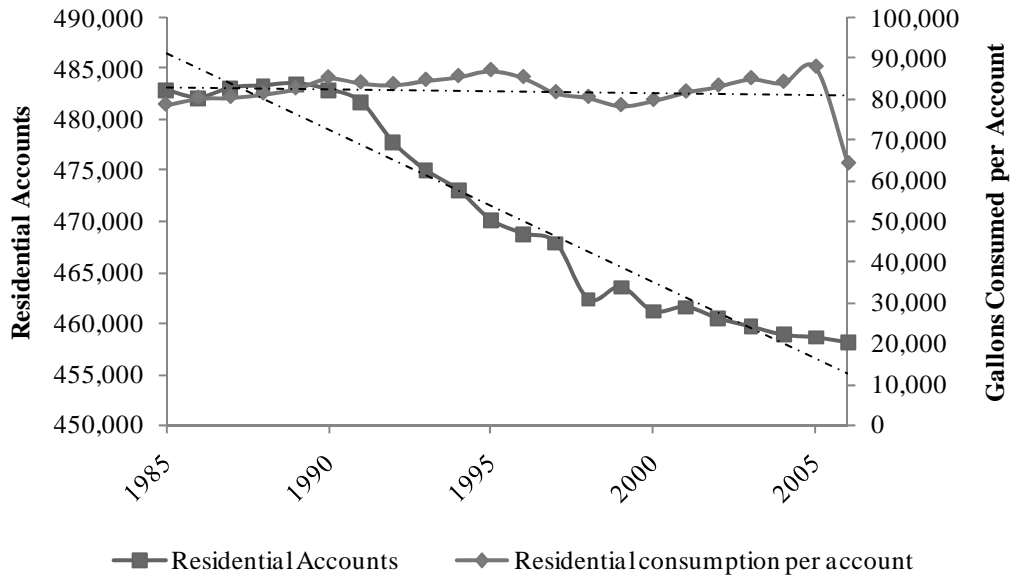


Figure B.26. Philadelphia small meter consumption and account trends

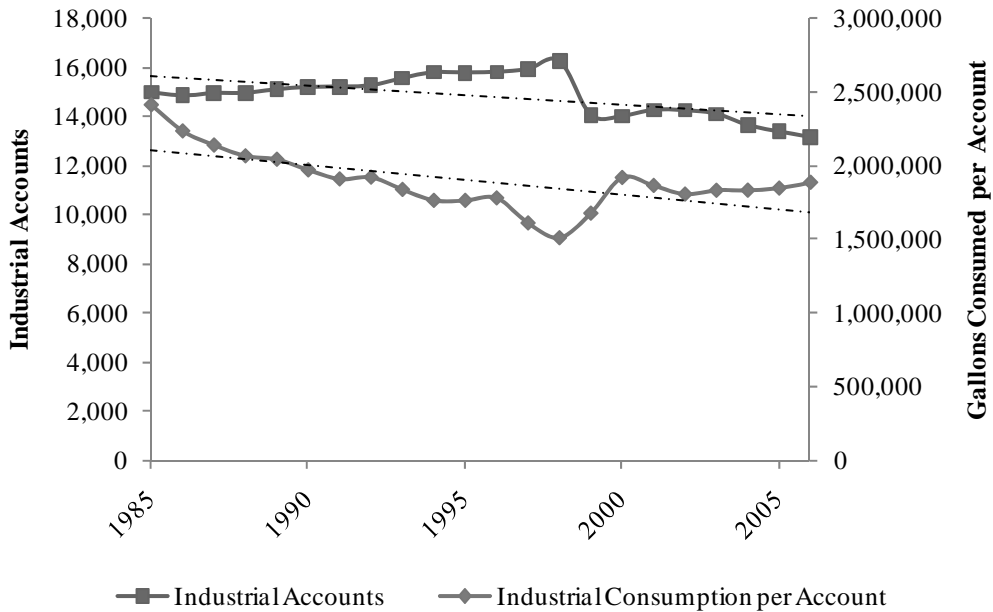


Figure B.27. Philadelphia large meter consumption and account trends

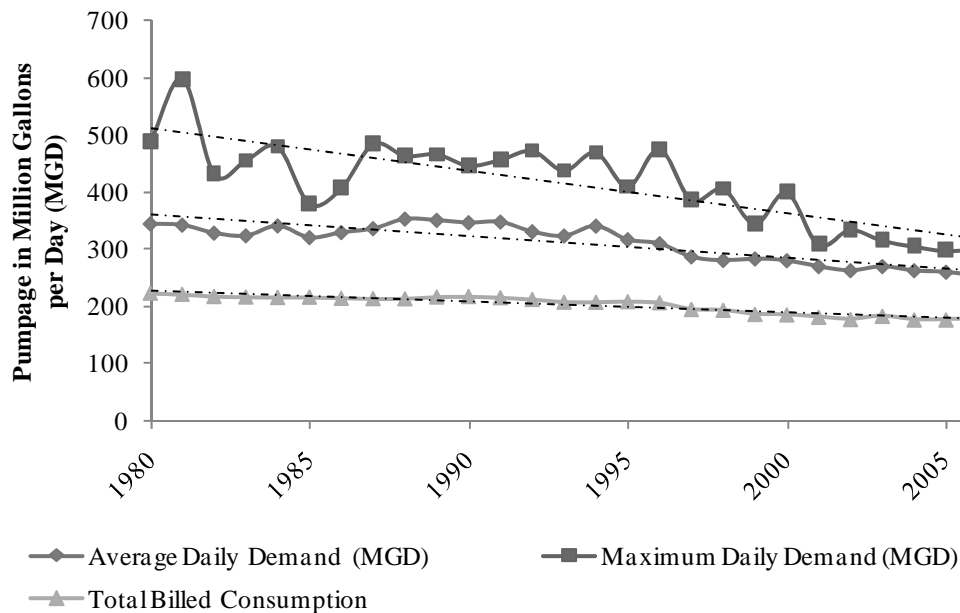


Figure B.28. Comparing the maximum day demand and the average daily demands (pumpage)

PHOENIX WATER SERVICE DEPARTMENT

The Phoenix water system operates as a self-supporting municipal utility service under the city's Water Service Department (PWSD). The system has grown considerably since the initial purchase of several wells from a private utility in 1907. Currently, the system supplies drinking water to a service area of more than 546 square miles with a population of over 1.4 million. The system also supplies highly treated reclaimed water for irrigation of golf courses, parks, school grounds, and other large turf areas north of Phoenix (PWSD 2005a).

The system relies upon four water sources: Salt River and Verde River via the Salt River Project (SRP), Colorado River via the Central Arizona Project (CAP), groundwater wells located within the service area, and reclaimed water. More than 90 percent of demands are met with surface water supplies. Much of the reclaimed water is utilized indirectly via an agreement whereby the city's wastewater treatment plant effluent is exchanged with farmers for surface water supplies. Future supply includes the groundwater rights purchased in 1986 from McMullen Valley in La Paz County, Arizona, additional reclaimed water, and additional CAP supplies (PWSD 2005b).

The service area consists of three general components: on-project lands, off-project lands, and non-member lands. On-project lands include Phoenix's portion of the original 240,000 acres originally pledged as collateral to finance construction of the SRP. These areas have historic rights to SRP supplies. Off-project areas include areas annexed outside the on-project area. Non-member lands are areas located within on-project boundaries where owners declined to participate in initial funding for the SRP dams. Off-project and non-member lands are primarily supplied with CAP supplies (PWSD 2005b).

In addition, the PWSD has Intergovernmental Agreements (IGAs) in place with several cities in the Phoenix metropolitan area to supply water to their service area. These cities are Scottsdale, Tolleson, Glendale, and Mesa. In the Scottsdale IGA, Phoenix serves as an emergency backup system. In the Tolleson agreement, Phoenix serves as a wholesaler. The IGA

with Mesa is a joint venture; the two communities jointly own the Val Vista Waste Treatment Plant (PWSD 2005a).

At the beginning of each year, the PWSD submits an annual budget to the city council for approval. The council is required to hold public hearings on the proposed budget and to set overall policy for the department and establish annual rate structures. Rates are reviewed and revised annually (PWSD 2005a).

Water Resource Plan

In 1980, the state enacted the Arizona Ground Water Management Act (GWMA). The primary objective of this piece of legislation is to control the severe groundwater overdraft occurring in certain parts of the state and to provide means for allocating Arizona's limited groundwater resources to effectively meet the state's water needs. Specifically, the GWMA contains provisions to minimize and replace the use of ground water through conservation and utilization of renewable water supplies for growth (PWSD 2005b).

The GWMA designated the Phoenix area as one of four active management areas. The GWMA, through a series of five management plans, requires agricultural, municipal, and industrial water users to adhere to conservation standards. For the city of Phoenix, the current management plan set a per-capita target of 217 gallons per capita per day (gpcd). The city is in compliance with this standard with an average of 197 gpcd over the past three years. Additionally, the GWMA requires growth to demonstrate availability of at least 100 years of renewable water supply as part of the "assured water supply" requirements. The city is in compliance with this standard as the entire service area, and its growth through 2010, has been designated as having an assured water supply. This designation will be reviewed in the next two years (PWSD 2005b).

Water Conservation and Drought Management Plans

In 1986, the city council approved its first comprehensive Water Conservation Plan (WCP). The WCP identifies conservation programs that are cost-beneficial, publicly supported, and that effectively reduce water consumption. The plan focused conservation activities in five areas: education and public awareness; technical assistance; regulation; planning and research; and interagency and intra-city coordination. The last update to the plan occurred in 1999 (PWSD 2005a).

In 1991, the PWSD adopted a drought management plan. The plan outlined measures taken in the event of water supply shortages during drought conditions. The plan, last updated in 2000, provides four stages of voluntary and involuntary demand reductions (PWSD 2005a).

The drought management plan provides for surcharges on water rates when activated. A stage one alert requires the city to provide information on the drought and request voluntary demand reductions from water users. Stages two through four call for increased public information, mandatory water demand reductions, and an increasing drought surcharge (PWSD 2005a).

Rate Structure

Since 1974, water rates have been reviewed annually in accordance with the city council's adopted policy. The principal consideration in adjusting water rates is to maintain system operations as a completely self-supporting enterprise. In the past 20 years, Phoenix has approved 19 general rate increases (PWSD 2005a).

The current water rate structure, implemented in June 1990, is a seasonal uniform rate structure with a fixed monthly service charge that varies by size of meter (Figure B.29). For the months of October through May, the monthly service charge for all accounts includes the first 4,488 gallons. For the months of June through September, the service charge includes the first 7,480 gallons. For usage above that included in the seasonal monthly service charge, the system implements three seasonal rates. The summer months (June, July, August, and September) have the highest water rates. The lowest water rates occur during winter months (December through March). The spring and fall months of April, May, October, and November have intermediate rates that serve to transition customers between the high and low rate seasons. The rate structure encourages water conservation during peak demand periods. An additional environmental charge, which is assessed to recover the annual cost of complying with new environmental standards, was implemented. Currently, a fee of \$0.25 per unit used (ccf) is indicated on a separate line item on the customer's bill (PWSD 2005a).

Customer Classification

The city of Phoenix does not charge different rates based upon the customer classification. The city utilizes the meter size serving the account in determining the monthly service charge for the account. As the meter size increases, the monthly service charge increases. Within the billing department, accounts are assigned customer classification for all new and historic accounts. Currently, there are over 40 customer classification types utilized by the department, with approximately 87 percent of the total accounts being single family in 2004 (PWSD 2005a).

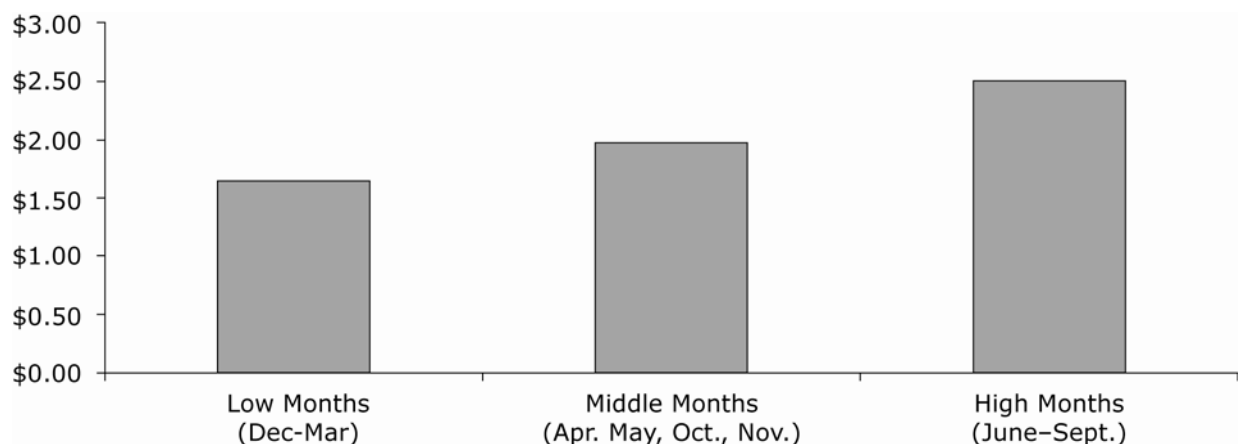


Figure B.29. Seasonal volume charges (every unit (748 gallons) beyond use included in service charge)

Residential Consumption

Between 1991 and 2006, the Phoenix Water Service Department saw a 39 percent increase in residential accounts. During this period, consumption per residential customer fluctuated annually, but since 2002 it has steadily decreased. Since 2002, consumption has decreased 12 percent per residential customer (Figure B.30).

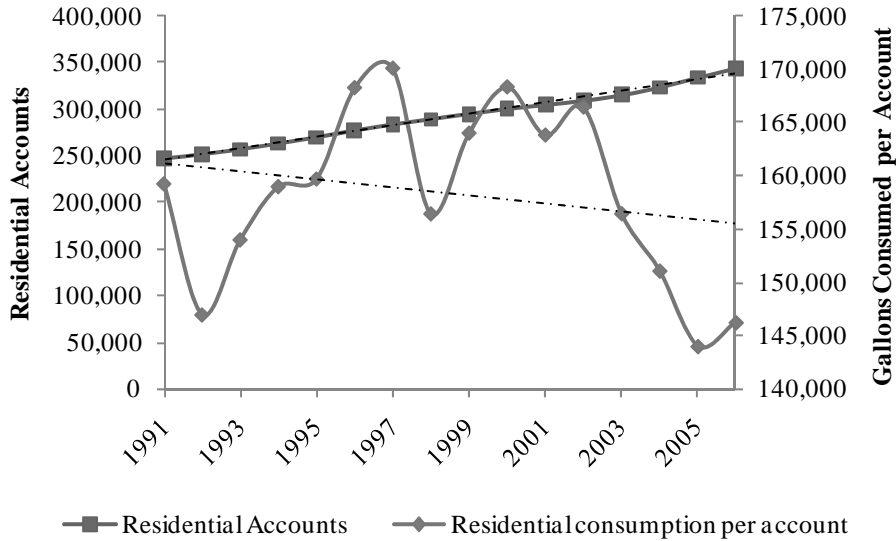


Figure B.30. Phoenix residential water consumption and account trends

Average and Maximum Daily Demand

Between 1999 and 2008, the maximum and average daily demands for residential customers remained constant for the period. Overall, the Phoenix Water Service Department saw a negative trend in both the maximum (-0.8509) and average daily demand (-1.7182) (Figure B.31).

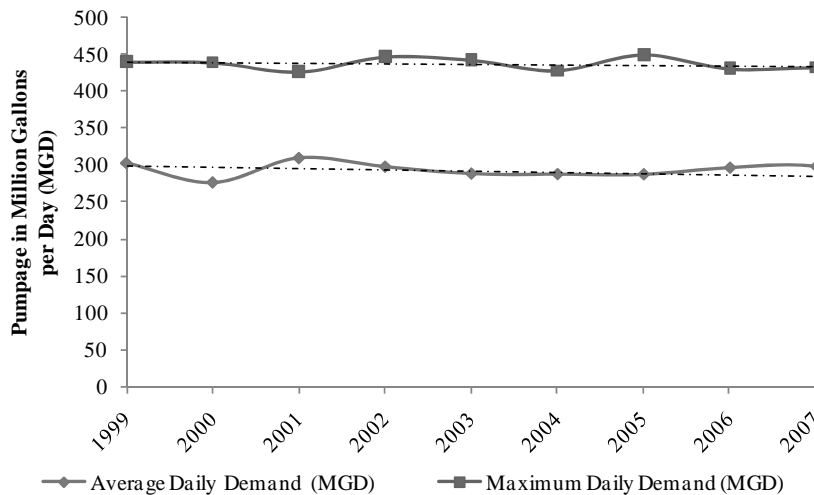


Figure B.31. Comparison of maximum and average daily demands

SEATTLE WATER DEPARTMENT

The Seattle Water Department, now part of Seattle Public Utilities (SPU), was established in 1890 and serves an area that includes the city of Seattle, portions of unincorporated King County (the direct service area) and cities and non-profit water associations (wholesale customers) in King County. SPU serves about 1.3 million people, of which approximately 630,000 are in the direct service area. The utility utilizes two watershed sources of supply east of Seattle and a small aquifer south of Seattle, as well as approximately 156 miles of supply mains and 460 million gallons of storage capacity in transmission and distribution reservoirs (SPU 2006).

At present, SPU has an adequate supply of resources to meet water demands under a wide range of weather conditions. Existing sources of supply owned by the city provide an average annual firm yield of 171 million gallons per day (mgd), an increase from 160 mgd in 2001, due to the completion of a new filtration plant that removes some of the restrictions on reservoir drawdowns. Providing sufficient water during the summer, when demand is 40 percent higher than during the winter, has been the major challenge, because the system depends on seasonal storage to meet that demand. However, this has become less of a concern over time as water demand has declined significantly since 1990 due to various forms of conservation. After peaking at around 170 mgd in 1990, water demand in the service area has dropped to below 130 mgd in recent years (SPU 2004 and SPU 2006).

Current forecasts of demand and supply suggest that a new primary source of supply will not be needed until sometime after 2060. This is due in part to the impact of the conservation savings noted above and in part to the declining-block contract with the Cascade Water Alliance (CWA), which became effective in 2004. SPU considered the potential uncertainties associated with demand forecasts, as well as the potential impacts future climate change may have on its water supplies, in determining that no significant investments in new sources are currently needed (SPU 2004).

Conservation Program

While population has steadily risen in SPU's water service area, water demand has been decreasing, due in part to local conservation measures. Conservation has been encouraged through higher marginal rates in the summer peak season, aggressive water conservation programs, new state plumbing codes specifying efficiency standards for water fixtures, and improved system operations. Between 1999 and 2005, these programs and actions achieved an estimated cumulative average annual savings of 22 mgd (SPU 2006).

Conservation programs currently in place include the One Percent Regional Conservation Program, which was initiated in 1999 with the goal of holding demand constant for at least ten years in the face of population growth. Additionally, in 2001, the city enacted a more aggressive conservation program designed to reduce the aggregate level of demand for water by an additional 3 mgd by 2010. Lastly, the 2007 Water System Plan includes a new conservation goal of 15 mgd of cumulative savings from 2011 through 2030 to provide a baseline level of conservation (SPU 2006).

Wholesale Customers

Wholesale customers use about half the water supplied by SPU and account for approximately 30 percent of water sales revenue. Wholesale customers consist of 20 water districts and municipalities served under individual contracts and the Cascade Water Alliance (CWA). The CWA is a consortium of eight municipalities and water districts that includes five formerly served under individual contracts (SPU 2006).

Since 2001, 12 wholesale customers, representing about 51 percent of total wholesale customer consumption and 26 percent of total system consumption, have signed fixed-block or full and partial requirements contracts with a 60-year term. The full and partial requirements contracts obligate the city to meet the wholesale customers' demand not readily met by their independent sources of supply. The contracts also facilitate the development by wholesale customers of alternative sources of water and the reduction of purchases from the city (SPU 2006).

In 2003, SPU signed a declining block sales contract with CWA. CWA demand represents about 42 percent of the total wholesale customer consumption. The block contract caps CWA demand from the water system at 30.3 mgd through 2024, at which point the block volume begins to decline. CWA expects to develop sources of supply to satisfy the future water demands of CWA members above the cap amount (SPU 2006).

Rate Structure

Water rates are proposed by the mayor, reviewed by the city council and adopted after public hearings. The mayor and the city council have exclusive authority to set rates and charges for water services. The city is not subject to the rate-making jurisdiction of the Washington Utilities and Transportation Commission or any other state or federal agency (SPU 2006).

Seattle's water rates have risen faster than the rate of inflation over the past five years and now are above the average of other cities similar in size (Figure B.12). The city council requested that SPU conduct an analysis of the affordability of the city's water rates. The analysis, completed in 2007, addressed historical factors driving water rate increases in past years, methods of assessing the affordability of Seattle water to residential and commercial customers, and strategies that may be used to assure affordable water in the future (SPU 2007b).

Beginning in 1989, SPU implemented bimonthly billing for residential and small commercial customers and monthly billing cycles for larger accounts. This allowed SPU to implement seasonal rates. Rates adopted in 1989 featured a modest off-peak to peak differential which has expanded substantially with subsequent rate increases. By 1996, the peak commercial rate was almost triple the off-peak rate and the residential peak rate had reached its marginal cost target. Residential rates were still considerably higher than commercial rates, despite the evaporation of the original justification for their separate existence. Over the last 10 years, commercial rates have increased much faster than residential rates and the two types of rates are now much closer. With peak rates having reached (and even surpassed) their marginal cost targets, recent rate increases have more and more been loaded into the meter charges (SPU 2007b).

Table B.13 shows the rates in effect as of June 1, 2006. Both retail and wholesale rates are seasonally differentiated; the summer residential rate has an inclining-block structure. Commercial rates have a flat single-block structure. The structure and basis for rates to wholesale customers served through master meters are governed by wholesale customer contracts (SPU 2006).

Table B.12
Water rate increases since 2000

Year	Percentage
Rate	of Increase
2000	19.1
2001	5.9
2002	5.6
2003	14.5
2004	10.6
2005	0.2

Table B.13
Seattle water system monthly water rates effective 2006

Commodity Charge (\$ per ccf)	Residential	Commercial	Wholesales Customers (1982 Contract/2001 Contract)
Winter (eight months)	\$2.53	\$2.33	\$ 0.96/1.02
Summer (four months)		\$3.35	1.48/1.57
Up to 5 ccf	\$2.88	NA	NA/NA
Next 10 ccf	\$3.35	NA	NA/NA
Over 15 ccf	\$8.55	NA	NA/NA
Growth charge (2)	NA	NA	0.82/0.60
Basic Service Charge (\$ per month)(3)			
3/4"	\$7.45	\$7.45	NA/NA
1"	\$8.30	\$8.30	\$ 54.00/NA
1-1/2"	\$13.50	\$13.50	60.00/NA
2"	\$20.70	\$20.70	66.00/NA
4"	\$73.10	\$73.10	108.00/NA

(1) Retail rates to customers outside the city limits are 14 percent higher.

(2) An individual wholesale customer pays a growth charge on any purchases in excess of purchases in the base period (1979–81).

(3) The base service charge is based on the size of the customer's meter. Rates for larger meters are not shown.

Water Quality

As an operator of a community water system, SPU must comply with treatment and monitoring requirements of the Safe Drinking Water Act of 1974. Water quality is ensured through an integrated effort of source protection, state-of-the-art treatment, and ongoing monitoring of the system for potential microbial and chemical contaminants. SPU owns the Cedar River Watershed and 70 percent of the South Fork Tolt River Watershed above the intake points. (The other 30 percent is U.S. Forest Service land.) Protection of the two watersheds from agricultural, industrial, and recreational activities helps ensure that high-quality water is delivered to 1.3 million people in the Seattle area (SPU 2006). Since 1993, SPU has had one

EPA health-based violation. During this period, SPU has also had over 30 monitoring and reporting violations, according to the EPA’s Safe Drinking Water Information System (SDWIS).

Customer Classification

SPU utilizes two customer classes: residential and commercial. The residential class includes single-family and duplex households. The commercial class serves as a catchall for all other accounts. Included under the commercial class are apartment complexes, businesses, government accounts, and institutions. Beginning in 2001, SPU implemented a new billing system, which specifically codes apartment complexes within the billing system (SPU 2006).

Residential

Between 1984 and 2006, SPU experienced a 7 percent increase in residential accounts. During this period, consumption per account fluctuated annually, with an overall downward trend. Consumption during this period peaked with annual gallons consumed per account of 79,138 in 1987. Since reaching this peak, consumption per account has steadily decreased, for a 25.4 percent decrease over all (Figure B.32). The number of multi-family accounts increased by 74 percent between 1975 and 2006. During this period, consumption per account experienced a decreasing trend (Figure B.33). Figure B.34 compares the trends for all residential accounts and consumption.

Average and Maximum Daily Demand

Figure B.35 compares the annual changes in the maximum and average daily demands for all accounts. Average daily demand has an overall declining trend during this period, with a slight downward trend. Maximum daily demand has an overall downward trend.

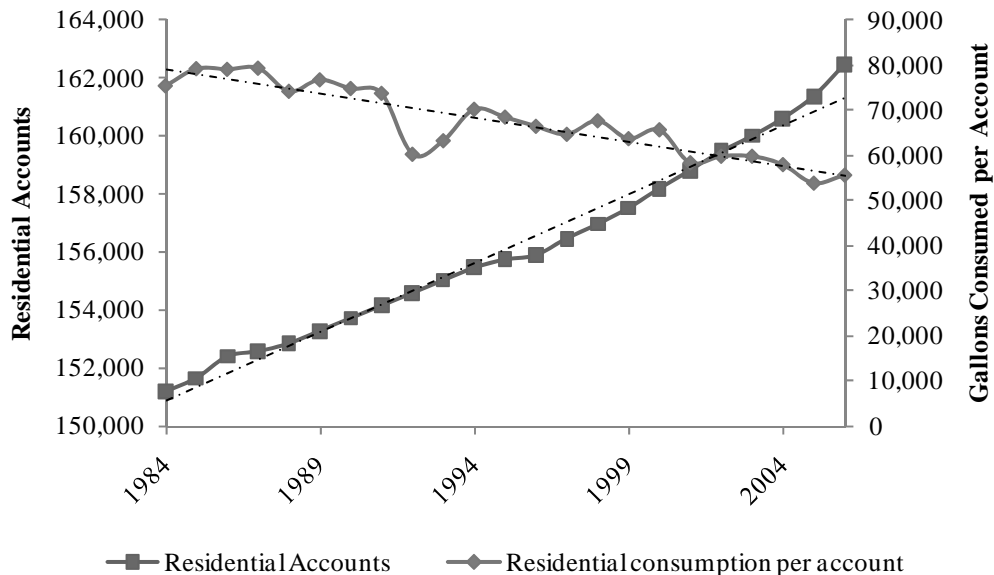


Figure B.32. Seattle residential water consumption and account trends

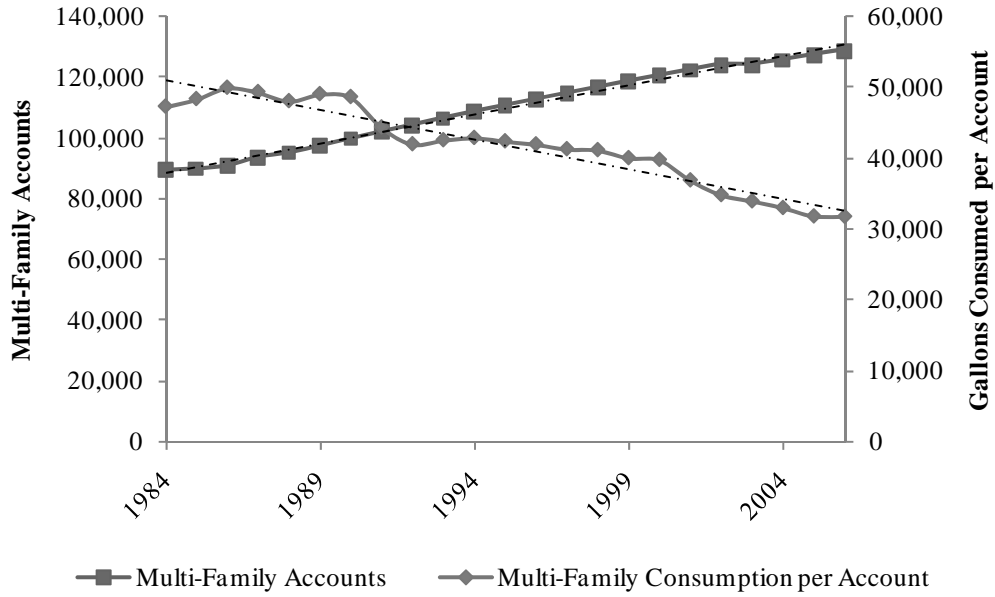


Figure B.33. Seattle multi-family water consumption and account trends



Figure B.34. Seattle total residential water consumption and account trends

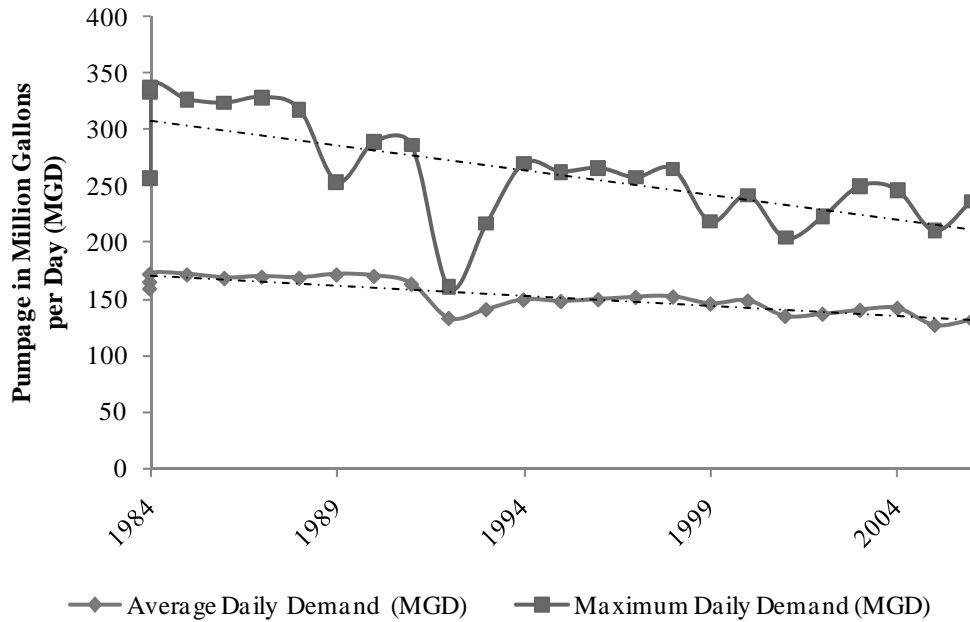


Figure B.35. Comparing the maximum daily demands and the average daily demands (pumpage)

SAINT PAUL REGIONAL WATER SERVICES

Overview

The Board of Water Commissioners of the City of Saint Paul (Board) is a municipal corporation doing business as Saint Paul Regional Water Services (SPRWS). The utility is funded through fees collected from retail and wholesale water service customers. SPRWS supplies water to more than 417,000 residents of Saint Paul and the surrounding areas through more than 1,100 miles of pipe. SPRWS treats water in a conventional lime softening plant with granulated activated carbon filters. Surface water from the Mississippi River is the primary source. SPRWS operates and maintains an alternate water supply source consisting of eight (8) deep wells, ranging from 438 to 465 feet in depth. SPRWS strives to be in full compliance with all state and federal laws governing drinking water.

Customer Classification

Within the SPRWS system, customers are classified as either domestic or commercial. All services one-inch and smaller meters are typically classified as domestic accounts. Those accounts greater than one and a half inches are classified as commercial accounts. Domestic accounts are billed quarterly and commercial accounts are read and billed monthly. On the issue of multi-family accounts, meter size determines whether the dwelling is classified as domestic or commercial. Currently, SPRWS is in the process of converting and implementing an Automatic Read and Billing (ARB) system. By 2014, the meter replacement project is scheduled to be completed (SPRWS 2007).

Water Rates

For 2006, the SPRWS water rates were \$1.61 per unit in the winter (November - May) and \$1.71 per unit in the summer (June - October). A unit is 100 cubic feet, or 748 gallons of water. Rates change periodically to cover cost of providing the services. Changes in water rates are proposed by resolutions from the Board of Water Commissioners and put into effect upon confirmation by the Saint Paul City Council (SPRWS 2007).

Zero flow customers are charged a minimum charge for usage. The minimum rate for consumption is 600 cubic feet per billing period. When water service is turned off, the minimum charges continue while the meter is on the property. If a property is vacant, a meter may be removed at the request of the owner (SPRWS 2007).

Domestic

Between 1975 and 2005, domestic customer accounts experienced an increasing trend,. During this same period, domestic consumption fluctuated annually and exhibited an overall negative trend, see [Figure B.36](#).

Commercial

Commercial accounts increased 30 percent between 1975 and 2005. During this period, consumption per account steadily decreased an average of 29,000 gallons annually between 1975 and 2005, [Figure B.37](#).

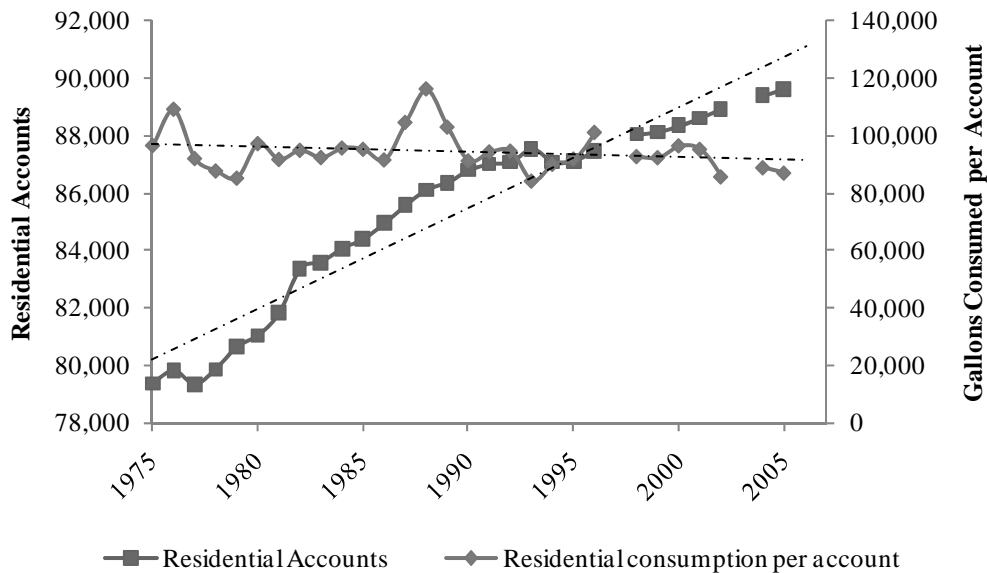


Figure B.36. Saint Paul domestic water consumption and account trends

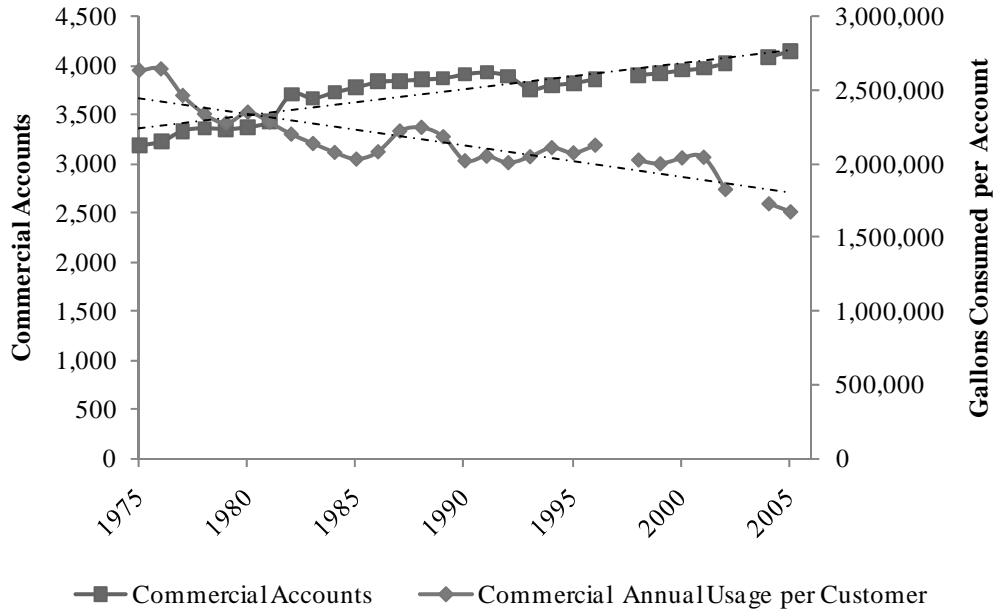


Figure B.37. Saint Paul commercial water consumption and account trends

CALGARY WATER SERVICES

Overview

The city of Calgary Water Services (CWS) provides drinking water to more than 245,000 residential customers and 20,000 industrial, commercial, and institutional customers. The city also supplies water to the surrounding communities of Airdrie and Chestermere. CWS operates and maintains two water-treatment plants, 30 pump station sites to 37 pressure zones, 12 finished water storage reservoir sites with 19 basins, and nearly 2,500 miles of pipes. The city relies upon two water sources, the Elbow and Bow Rivers (CWS 2007).

An issue addressed during the regional level focused upon the meter age. The average age of meters within the city of Calgary is approximately 10 years and has a battery lifespan of 15 to 20 years. The city is considering the option of moving to Automatic Meter Reading (AMR). All meters currently being installed are AMR-capable (CWS 2007).

Customer Classification

CWS classifies customers based on rate codes. The rates include multifamily residence, single-family residence, general service, and irrigation. The single-family classification includes both metered and flat-rate accounts. Historically, the general service rate code included multifamily residences. Recently, CWS began separating multifamily from other customer types. This is due to the different consumption witnessed in multifamily accounts. Through this reclassification process of multi-family accounts, CWS has address misclassification of other customer accounts (CWS 2007).

Conservation

In 2006, Calgary's Council adopted a water-efficiency goal known as 30-in-30. The 30-in-30 water efficiency goal is to use the same amount of water in 2033 as the city does present day. To accomplish the goal, the city plans to reduce water consumption per capita by 30 percent over 30 years. This will allow Calgary to accommodate a projected population growth of 1.5 million without increasing current consumption rates. The city of Calgary has numerous conservation policies currently in place. These programs include Water Efficiency Plan, Toilet Rebate Program, Rain Barrel promotion, Indoor Water Saver Kits, Outdoor Water Saver Kits, School Education Programs, and Water Conservation Report (CWS 2005, CWS 2006a).

Water Quality

Changes in water-use patterns have influenced water quality during challenging treatment conditions, i.e., colored water, runoff events, rapidly changing raw water conditions, etc. Increased demand during these times requires plants to increase production when the utility is struggling. When demand is low, it provides plants adequate time to address quality issues.

When the South Glenmore distribution reservoir was brought online, the city of Calgary experienced an increased concentration of Disinfection By-Products (DBPs). The system is noticeably larger and requires higher chlorine levels to maintain the residual chlorine level and handle colored raw water events. The Water Service Department has not exceeded any maximum allowable concentration (MAC) for Canada (CWS 2006b).

Rate Structure

The current rate structure is based on a declining block structure. However, beginning in 2008 the declining block structure will be phased out and moved toward a middle amount. CWS charges different rate structures based on established rate codes. CWS employs six customer classes: metered single family residential ([Table B.14](#)), flat rate residential ([Table B.15](#)), multi-family residential ([Table B.16](#)), metered general service ([Table B.17](#)), irrigation, and outside city customers. Each customer pays a set monthly service charge, which is based on the size of the meter size, in addition to a rate that varies with the volume of water that is consumed (CWS 2007).

Currently, about 20 percent of the customer accounts pay a flat fee for consumption. The city of Calgary is currently phasing out the flat-rate charge. The city's council approved a plan to have all customers on meters by the year 2011. Currently, just over 80 percent of the city is metered (CWS 2007).

The Calgary Water Services rates are established by the Calgary City Council. Currently, the CWS follows rates established in a three-year budgeting plan. However, the council does have the right to review rates annually to ensure the rates are in accordance with inflationary changes. To maintain adequate rates, the CWS conducts rate studies every 7 to 10 years, with the latest study completed in 2003. Some recommendations from the 2003 rate study are still in the process of being implemented (CWS 2007). Currently, a cost-of-service study is being completed for outside city customers (CWS 2003). Over the last decade or so, water rates have increased at the same rate or just higher than the rate of inflation, while wastewater rates have increased at about half the rate of inflation (CWS 2007), as shown in the tables below.

Table B.14
Service and rate charges for metered residential customers (single or two-family)

	2006	2007	2008
Service charge (\$ per 30 days)	\$10.58	\$10.74	\$10.87
PLUS			
Usage rate (\$ per cubic meter)	\$1.01	\$1.09	\$1.18

Table B.15
Rates for residential flat rate customers

	2006	2007	2008
\$ per thousand square feet of actual lot area	\$3.61	\$3.82	\$4.05
PLUS			
\$ per thousand square feet of gross building area	\$11.26	\$11.93	\$12.65

Table B.16
Multifamily metered usage rate

Multi Family Metered Usage Rate (\$ per cubic meter)	2006	2007	2008
First 100 cubic meters per month	\$1.13	\$1.12	\$1.09
Next 900 cubic meters per month	\$0.80	\$0.94	\$1.09
Over 1000 cubic meters per month	\$0.67	\$0.87	\$1.09

Table B.17
General service accounts usage rates

General Service Metered Usage Rate (\$ per cubic meter)	2006	2007	2008
First 100 cubic meters per month	\$1.13	\$1.12	\$1.09
Next 900 cubic meters per month	\$0.80	\$0.94	\$1.09
Over 1000 cubic meters per month	\$0.67	\$0.87	\$1.09
(starting in 2008) less than or equal to 25 mm	n/a	n/a	\$1.18
40 or 50 mm	n/a	n/a	\$0.89
greater than or equal to 75mm	n/a	n/a	\$0.68

Residential

CWS provided historical consumption data from 1975 to 2001. No consumption data was provided for multifamily customers because until recently multifamily accounts were included in the General Service Metered customer classification. This category also includes industrial and commercial customers. Further, as of March 1, 2006, multifamily residential customers accounted for only 8.2 percent of total water demand in the city. However, it should be noted that multifamily residential customers do account for nearly 25 percent of Calgary's population (CWS 2007). Because of these facts, the single-family residential consumption trend, represented in Figure B.38, serves as an approximate representation of the total residential demand.

Single-family accounts increased over 130 percent during the 27 years of data provided. During this period, consumption per residential account varied annually, but overall the trend was negative, with an average annual decrease of 603 gallons of consumption per account.

General Meter Accounts

General Service Metered accounts include industrial, commercial, and multifamily customers prior to March of 2006. During this period, the number of general meter accounts increased over 90 percent. Over the period, consumption per general service account experienced a general decreasing trend. Annual consumption per account decreased an average of 6,729 gallons per year, Figure B. 39.

Maximum and Average Demand

Figure 40, compares the maximum day and average daily demands for the CWS. The maximum day demand fluctuates during the time series provided, with a peak of 226 MGD in 2002. During the period, the average daily demand has remained relative flat with a 0.20% increase over years.

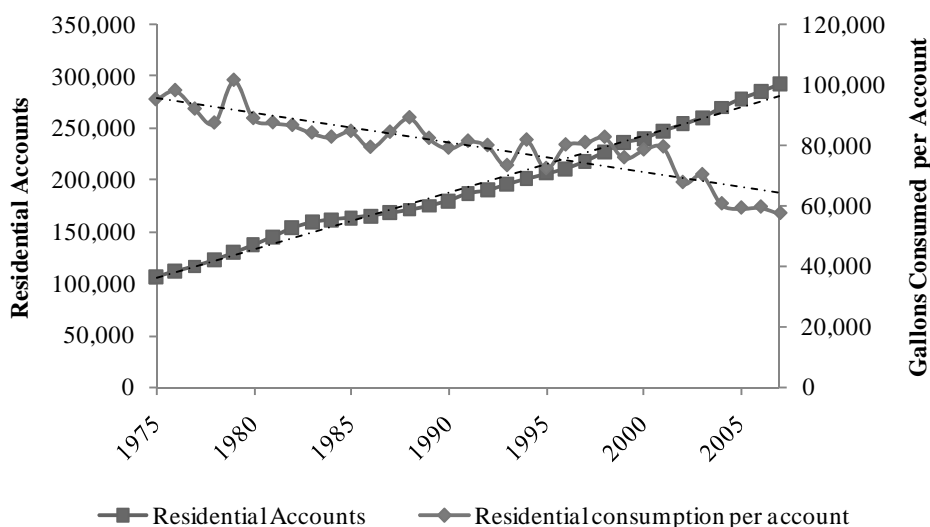


Figure B.38. Calgary residential water consumption and account trends

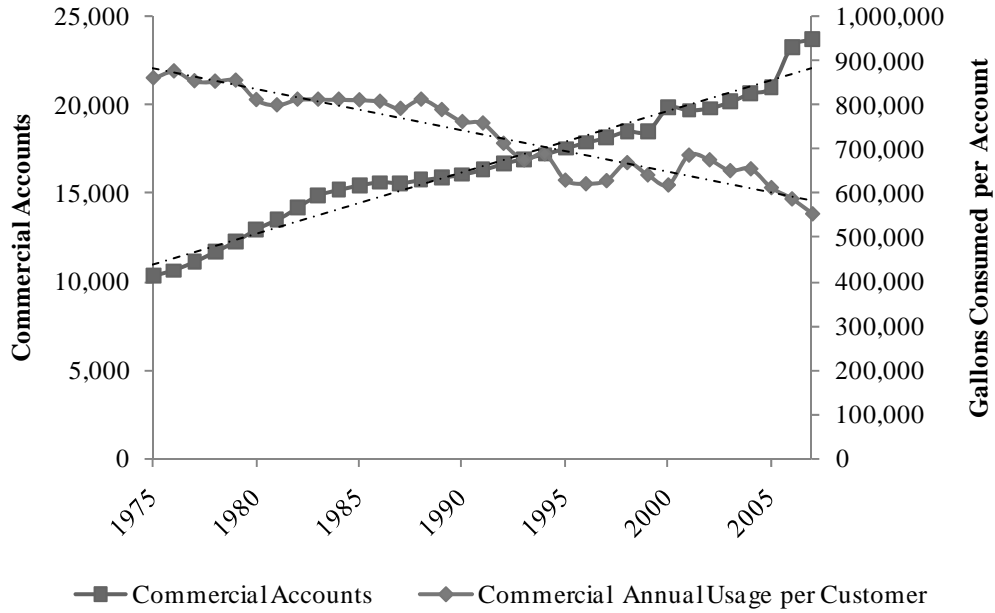


Figure B.39. Calgary general meter water consumption and account trends

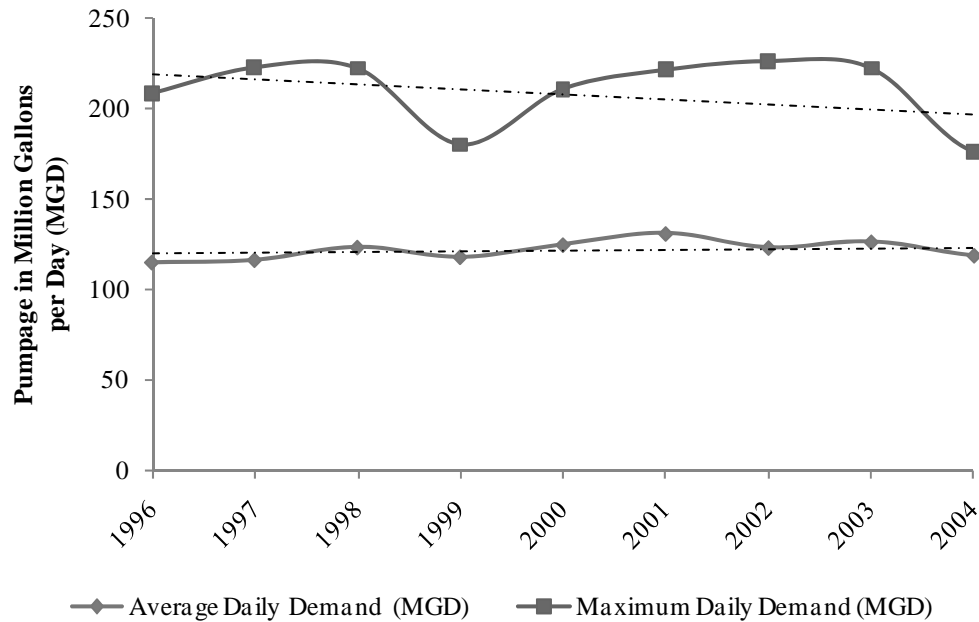


Figure B.40. Comparing the maximum day demand and the average daily demands (pumpage)

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ABBREVIATIONS

AMR	Automated Meter Reading
AWWA	American Water Works Association
BCDES	Butler County Department of Environmental Services
CAP	Central Arizona Project
CWA	Cascade Water Alliance
CWD	Cleveland Water Department
DWU	Dallas Water Utilities
Foundation	Water Research Foundation
GCWW	Greater Cincinnati Water Works
gpcd	gallons per capita per day
gpf	gallons per flush
gpm	gallons per minute
GWMA	Ground Water Management Act
HETs	High Efficiency Toilets
IGAs	Intergovernmental Agreements
IWA	International Water Association
LVVWD	Las Vegas Valley Water District
LWC	Louisville Water Company
mgd	million gallons per day
NARUC	National Association of Regulatory Utility Commissioners
NOAA	National Oceanic and Atmospheric Administration
OLS	ordinary least squares
PDSI	Palmer Drought Severity Index
PMDI	Palmer Modified Drought Index
PSC	Public Service Commission
PWD	Philadelphia Water Department
PWSD	Phoenix Water Service Department
RPB	Representative Policy Board
SCCRWA	South Central Connecticut Regional Water Authority

SDA	Soup and Detergent Association
SDWIS	Safe Drinking Water Information System
SNWA	Southern Nevada Water Authority
SPU	Seattle Public Utilities
SRP	Salt River Project
U.S. EPA	United States Environmental Protection Agency
ULF	Ultra-low-flush
WBIC	weather-based irrigation controller
WCP	Water Conservation Plan
WLCC	Water Loss Control Committee
WSD	Water Service Department



WATER
RESEARCH
FOUNDATION™

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North America Residential Water Usage Trends Since 1992



Staff DR 3.3

Fern Lake Tariff

FERN LAKE COMPANY

FERN LAKE COMPANY

OF

MIDDLESBORO, KENTUCKY

Rates, Rules and Regulations for Furnishing

AT

CITY OF MIDDLESBORO, KENTUCKY PUBLIC SERVICE COMMISSION OF KENTUCKY EFFECTIVE

JAN 01 1987

PURSUANT TO 807 KAR 5:011, SECTION 9 (2)

BY: J. Deofogen

Filed with PUBLIC SERVICE COMMISSION OF KENTUCKY

ISSUED DECEMBER 22, 1986

EFFECTIVE JANUARY 1, 1987

ISSUED BY FERN LAKE COMPANY (Name of Utility) BY Arthur E. Abshire ARTHUR E. ABSHIRE PRESIDENT

FOR Middlesboro, Kentucky

PSC KY NO. _____

_____ SHEET NO. _____

FERN LAKE COMPANY

(NAME OF UTILITY)

CANCELLING PSC KY NO. _____

_____ SHEET NO. _____

CLASSIFICATION OF SERVICE

The sole customer of Fern Lake Company is Water Service Corporation of Kentucky, Inc., a Public Utility, who supplies water to customers at Middlesboro, Kentucky.

(1) Rates: Monthly

First 41,667,000 Gallons (Minimum Bill)		\$10,267.00	(I)
Additional 1,000 Gallons	Rate Per 1,000 Gallons	\$0.26	(I)

DATE OF ISSUE 12-19-13
MONTH / DATE / YEAR

DATE EFFECTIVE 12/12/13
MONTH / DATE / YEAR

ISSUED BY *Doug Asher*
SIGNATURE OF OFFICER

TITLE President

BY AUTHORITY OF ORDER OF THE PUBLIC SERVICE COMMISSION
 IN CASE NO. 2013-00172 DATED 12/12/13

**KENTUCKY
PUBLIC SERVICE COMMISSION**

**JEFF R. DEROUEN
EXECUTIVE DIRECTOR**

TARIFF BRANCH

Brent Kirtley

EFFECTIVE
12/12/2013
PURSUANT TO 807 KAR 5:011 SECTION 9 (1)



COMMONWEALTH OF KENTUCKY
PUBLIC SERVICE COMMISSION
730 SCHENKEL LANE
POST OFFICE BOX 615
FRANKFORT, KY. 40602
(502) 564-3940

June 17, 1992

Mr. Arthur E. Abshire
Fern Lake Company
200 Bolivar Street
P. O. Box 233
Lexington, Kentucky 40501

Dear Mr. Abshire:

On June 2, 1992, the Commission received from Fern Lake Company ("Fern Lake"), a letter concerning the need to file a new tariff. Specifically, Fern Lake raises the question of having to file a tariff listing the utilities procedure for monitoring customer usage as required in the newest regulations sent to each utility. Considering the unique circumstances surrounding Fern Lake's wholesale water supply service, the explanation provided in its letter dated May 29, 1992 is sufficient. The letter will be placed with Fern Lake's tariff on file with the Commission. No additional information is required at this time.

If you have any questions, please contact Phyllis Bruning at (502) 564-3584.

Sincerely,

A handwritten signature in cursive script, appearing to read "Claude G. Rhorer, Jr.".

Claude G. Rhorer, Jr.
Acting Executive Director

fb

cc: George Sallee

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

4. With regard to the Clinton Detention Center, provide the following:

a. State at what rate the office building at the detention center is currently being billed and whether a minimum bill is being issued.

b. Explain why WSKY did not propose to remove from the \$8,809, the amounts that are being billed for the office building.

Response:

a. The detention center is currently being billed at a 3/4" meter size rate, or \$12.47 for a minimum bill. Previously, the detention center was using a 2" meter for service, which was \$125.30 for a minimum bill per the most recent monthly water rate tariff.

b. The Company did not propose to remove the office building portion from the \$8,809 because the meter was replaced on January 28, 2016. The Company was unsure of the usage directly related to the office building and assumed the amount to be immaterial when being compared to the 2" meter usage that was removed from the consumption data.

Witness: Brian Halloran

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

5. Refer to WSKY's responses to Staffs Second Request, Item 9.c.

a. Provide the location and amounts that were paid to temporary employees for vacant positions within Utilities, Inc. and WSKY.

b. For any amounts that were paid for temporary services, but for positions that have been, or will be filled, does WSKY propose to include both the amounts for the temporary services in addition to the annualized salary for those vacant positions?

c. If the response to 5.b. is yes, explain why it is appropriate to include both the temporary employee(s) and the full-time employee(s).

Response:

a. There were no amounts included in the WSKY's claim that were paid to temporary employees for vacant positions within Utilities, Inc. and WSKY.

b. No, there were no amounts paid to temporary employees for vacant positions during the test year and no pro-forma amounts have been included in the Company's claim for temporary employees.

c. N/A

Witness: Brian Halloran

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

6. Refer to the Excel spreadsheet that was provided in WSKY's response to Commission Staffs First Request for Information ("Staffs First Request"), Item 3, labeled Staff_DR_1.3_wpj, and provide the following:

a. For each item included in Current Deferred Assets, provide the invoice that includes the date the work was performed, a description of what work was performed, and the date it was paid. The total for all invoices should equal \$20,106.

b. For each item included in Pro Forma Deferred Assets, provide the invoice that includes the date the work was performed, a description of the work that was performed, and the date it was paid. The total for all invoices should equal \$14,027.

c. Provide a reconciliation of the difference between Deferred Maintenance Expense and Current Deferred Assets.

Response:

a. Please refer to the response to Staff DR 3.02 for support of each item in "Current Deferred Assets" tab. Please note that the total for all invoices will not equal \$20,106, because that amount is the amount of Annual Deferred Maintenance Expense.

b. Please refer to the attached files, labeled "*Staff DR 3.06 – Asset 1009315*", "*Staff DR 3.06 – Asset 1009374*", and "*Staff DR 3.06 – Asset 5000727*" for the Company's response. Asset numbers 1009315, 1009374, and 5000727 are related to the Sealing Driveway at Middlesboro, Tank Cleaning, and Tank Paining Project, respectively. Please note that the total for all the invoices will not equal \$14,027, because that amount is the amount of Annual Deferred Maintenance Expense. The total cost of the Tank Painting

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RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Project is equal to \$122,821, and not \$111,103. The amount of \$111,103 was a forecasted amount since the Tank Painting Project was still on-going at the time of the original filing.

The total cost of \$122,821 can be broken down into the following categories:

Cost Category	Amount
Captive	\$ 19,040
IDC	\$ 72
Contractor/Labor	\$ 103,710
Total Tank Painting Project Cost	\$ 122,821 *

*Rounding

Total Annual Expense for pro forma deferred assets would be \$15,199, once updated to include the actual spending in the pro forma deferred projects.

c. Please refer to the attached file labeled "*Staff DR 3.06c – Deferred Assets*" for the Company's response.

Witness: Brian Halloran

Staff DR 3.06

Asset 1009374

Staff DR 3.06

Asset 1009315

3007629

Federal Id - 61 1168642

Gibbons Construction, Inc.

JOB INVOICE

P.O. BOX 6
CALVIN, KY 40813
PHONE: 606-337-2344 or 337-7450
Cell - 269-0647

RECEIVED
AUG 27 2015

Invoice Number 563
Date of Invoice 8-27-15
RE: Estimate Number _____
 Day Work Contract Extra
Explanation _____
Job Name/Number _____
Job Location Middlesboro Ky
Job Phone _____ Ext. _____
Start Date _____ End Date _____

Middlesboro WATER
Middlesboro Ky

Doc 709759

#	LOCATION	QTY	MATERIAL			SQ. FT.	RATE	TOTAL AMOUNT
			ASPHALT	CONCRETE	OTHER			
1	SEAL COAT						2750	
2	DACKING HOT & Rd ways							
3	WATER PLANT							
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								

Your Order # 194997 Your Order Date 8-27-15
Work Ordered By James Leonard
Terms _____
Bill # 345102

TOTAL MATERIALS	
TOTAL ABOVE	2750
TOTAL DUE	2750

Staff DR 3.06

Asset 5000727

RECEIVED

NOV 24 2015

WET or DRY



Tank
Inspection
Services

Member: NACE, SSPC, ASTM, AWWA, NFPA
National Association of Corrosion Engineers Coatings
Inspectors on-staff

INVOICE

Invoice # 4
PO # 201431
B U# 345101
Project # 2015127
Date 20 Nov 2015

Utilities, Inc.
2335 Sander's Road
Northbrook, IL.60062
Attn: Accounts payable

Batch _____
Doc 730146

Project management and inspection services water tank rehab Clinton, KY

Total Due \$ 12,000.00

Please remit payment to:
Wet or Dry
1609 Hillsboro Rd.
Campbellsburg, KY 40011

Staff DR 3.06c

Deferred Assets

(see attached Excel file)

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

7. Refer to WSKY's response to Staffs Second Request, Item 12, and WSKY's response to Staffs First Request, Item 3. In response to the Staff's First Request, WSKY states that it expected to expense \$111,103 for a tank-painting project. In its response to Staffs Second Request, WSKY provided bids from Curren's, Central Tank Painting, and Wet or Dry Tank Inspection.

a. The quotes provided from Curren's and Central Tank Painting are quoted as below the \$111,103 that WSKY states will be the cost to complete this project. Explain why the contract was awarded to Wet or Dry Tank Inspection, rather than to one of the bidders offering a lower price.

b. The quote that was provided in response to Staff's Second Request for Wet or Dry Tank Inspection only lists the Contract Support and Painting Inspection fee of \$12,000 and provides no other details about the tank-painting project. Provide the full quote from Wet or Dry Tank Inspection.

c. In response to Staffs Second Request, Item 12.a.(5), WSKY stated that a copy of the advertisement for contractor bids to paint the tank are not available. State whether WSKY advertised for contractor bids for this project. If not, explain why not. If so, explain why documentation is not available.

d. In response to Staffs Second Request, Item 12.a.(4), WSKY stated that the last time the tank was painted was in 2002. Explain why a ten-year amortization rate is proposed, given that it has been 13 years since the tank was last painted.

Response:

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RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

a. Wet or Dry Tank Inspection had the necessary credentials to perform this project. Their professional management and expertise allowed them to oversee the process, compile and review all the necessary work including gathering bids, as well as offering the expertise to identify and overseeing repairs that were identified during the remediation process. Their ability to identify potential problems with the tank allowed the necessary repair work to be incorporated in the process, thereby ensuring the integrity and extending the useful life of the Tank.

b. Please see the attached file labeled "*Staff DR 3.07b – Washington Street Tank Inspection 08.2014*" for a copy of the tank inspection results provided by Wet or Dry Tank Inspection. The results of this tank inspection led us to contract Wet or Dry Tank Inspection to lead the search in obtaining bids to provide the necessary work on the tank. Under their direction, we were able to complete the sandblasting and painting of the water tank, but also during this process was able to identify additional items that required addressing.

c. Wet or Dry Tank Inspection assisted in obtaining bids from reputable contractors to paint the tank.

d. Tank inspections must be completed every 5 years for PSC & DOW compliance under the regulation 807 KAR 5:006 Sec. 25 (3). Based on the Company's most recent inspection of the water tank, the Company determined it was appropriate to paint the water tank. The average life of tank painting is about 10 years, which is the standard for most water utilities, however, if the tank was due for

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RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

a new paint job prior to year 10, the Company would have done it as deemed appropriate by the tank inspection. As a result of our most recent tank inspection, the Company was advised that the tank should be painted, and it just so happened that the tank was last painted 13 years ago. The 10-year period should be used as a guideline and not the general rule since the painting that occurred in 2002 lasted longer than we had anticipated. The Commission has recognized that a 10-year amortization period is appropriate for tank painting on several occasions. See WSCK Response to Item 34 of the Attorney General's Second Request for Information.

Witness: Bruce Haas, Brian Halloran

Staff DR 3.07b

Washington Street

Tank Inspection

08.2014

Standpipe Tank Inspection Report

Inspected By **WET OR DRY WATER TANK INSPECTION**

Date of Inspection: **Aug 2014**

Location: **In-town tank**

City: **Clinton** State **KY**

Present Owner: **UI Water**

Original Owner: **Aqua KWS**

Type of Tank: **Standpipe**

PART I

Description of Tank :

- | | |
|--|-------------------------------|
| 1. Capacity | Aprox. 200,000 Gallons |
| 2. Diameter Tank | Approx. 12' |
| 3. Number of Panels | 12 |
| 4. Type Construction (Riveted, Welded) | Welded |
| 5. Type Roof | Dome |
| 6. Height | Approx 96' |

Part II

Foundation Conditions

1. Are there any indications of foundation settlement? **No**
Describe: **No indication of foundation settlement but the surrounding area is settling**
See pictures

2. Is concrete or grout chipped or cracked? **No**

Describe:

3. Is soil around base of tank saturated with water or is there any indications of underground pipe leaks? **No**

PART III Table for percentages of coatings failures

0-25% Poor (requires attention)

25-40% Fair (Will require attention within year)

40-60 % Good (Noting immediately 2-3 years)

60-80 % Acceptable (3-5 years)

80-100 % Excellent (Evaluate again 5 years)

Condition of Paint

A. General information About Previous Paintings (If Available):

1. Date of last painting: **Unknown**

Inside:

Outside:

2. Surface preparation used:

Inside:

Looks like it was abrasive blasted

Outside: **Overcoat**

3. Paint system or type paint:

Inside: **Epoxy**

Outside: **Unknown**

4. General comments concerning last or prior painting: **Tank exterior is in fair condition**

(Dates, type paints, etc. for previous systems) **See last page**

B. Condition of Paint on Structure (Shell, including Base Plates, Ladders)

1. Are base plates, anchor bolts and anchor bolt chairs well protected by paint? **Yes**
2. Is ladder well covered by paint? **Yes**
3. Are ladder lugs well covered by paint? **Yes**
4. Are cages well covered by paint? **Yes**
5. Estimated percentage of topcoat or coats in good condition. **50%**
6. General condition of primer. **Fair**
7. Estimated percentage of primer in good condition. **50%**

C. Condition of Paint on outside of tank:

1. Outside of Tank Shell:

General condition of topcoat or coats. **Fair**

Estimated percentage of topcoat or coats in good condition. **50%**

General condition of primer **None showing**

Estimated percentage of primer in good condition **50%**

2. Outside of Tank Roof:

General condition of topcoat or coats: **Fair**

Estimated percentage of topcoat or coats in good condition. **50%**

3. Are roof manhole and finial vent well covered by paint? **No**
4. General comments about any paint failure. **See last page**

D. Condition of Paint on inside of tank:

1. Underside of roof and inside of shell above high water line:

General condition of topcoat or coats: **Poor**

Estimated percentage of topcoat or coats in good condition? **35%**

General condition of primer. **Poor**

Estimated percentage of primer in good condition. **35%**

2. Inside of Tank Shell:

General condition of topcoat or coats: **Poor**

Estimated percentage of topcoat or coats in good condition: **35%**

General condition of primer: **Poor**

Estimated percentage of primer in good condition: **35%**

3. Inside Tank Bottom:

General condition of top coat or coats: **Poor**

Estimated percentage of topcoat or coats in good condition: **35%**

General condition of primer: **Poor**

Estimated percentage of primer in good condition: **35%**

Is bottom covered with mud or scale? **Yes** What Depth? **Very little less than 1/2"**

4. General comments about any paint failure: **See last page**

5. General comments about any paint failure on inside of tank: **See last page**

E. Recommendations for cleaning and painting: SEE LAST PAGE

PART IV
Condition of Metal

A. Shell:

1. Are anchor bolts and nuts in good condition? **Yes**

Are anchor bolt nuts tight? **Yes**

2. Condition of anchor bolt connections to sidewall. **Excellent**

Are anchor bolt connections or chairs on columns and cylinder in good condition? **Yes**

Describe:

3. Has dirt or rust accumulated on roof? **No**

Is roof in good condition? **Yes**

4. General comments on condition of shell: **Shell is 90%**

B. Outside of Tank:

1. Is there any rusting or pitting on the outside of the tank? **No**

2. Is there any rusting or pitting on the outside of the tank roof? **Minimal**

Describe: **See last page**

3. Is the connection of roof to shell in good condition? **Yes**

4. If the tank is riveted, state the condition of laps and rivets on outside of shell and roof? **N/A**

5. Are there any indications of leaks in shell? **No**

Describe:

6. General comments on condition of shell metal: **Metal is in excellent condition**

C. Inside of Tank:

1. Was the tank emptied for inspection? **No**

If not completely emptied, state how far down: **2' below overflow**

2. If the tank is riveted, have lapped seams and rivet heads been seal welded? **N/A**

Describe any previous repairs to inside areas: **None, found**

General comments on condition of metal inside bottom: **See last page**

See last page for details

Is pitting local or general? **NA**

General comments on condition of metal inside roof:

PART V

Condition of Accessories

A. Is ladder safe? **Yes**

Type of climbing safety device: **Cage w/cable**

B. Is shell ladder fixed or revolving? **Fixed** Is it safe? **See above**

Are lugs and bolts in good condition? **Yes**

C. Is roof ladder fixed or revolving: **Cable** Is it safe? **Yes**

Are lugs, bolts, trolley, etc. in good condition? **N/A**

Describe:

Type of climbing safety device on roof ladder? **Cable**

Condition: **Excellent**

If no climbing safety device length of ladder:

D. Is finial or vent in good condition? **Excellent**

Are bolts in good condition? **Yes** Describe:

E. Is roof manhole in good condition? **No**

Describe: **See pictures**

F. Does tank have a float-type indicator? **Yes**

Is it in good condition and working? **No**

G. Does tank have inside tank ladder? **Yes** Is it in good condition? **Yes**

Is it safe?

Describe:

H. Does tank have inside spider? **No** Is it in good condition?

Size number?

Describe :

I. Are any pipes or valves leaking? **No**

J. Do pipes in valve pit have frost casing? **NA**

Are they in good condition and well supported? **NA**

Describe:

K. Does tank have a cathodic protection system? **No**

If so, give manufacturer and condition of anodes: **N/A**

M. Type of overflow? **Funnel** Size: **4"** Condition: **Excellent**

Other accessories:

PART VI

Repairs and Recommended Repairs

1. Repairs made by inspector: **None**
2. Recommended Repairs:

The tank coating in general has gone downhill since the last evaluation and will need some attention within the next year

Tank comments:

Exterior:

The exterior coating is now showing signs of its age, as can be seen in the pictures and the number of failures that are beginning to occur. Overall it is in fair condition, but due to its age failures are going to progress more rapidly.

Interior:

The interior also has begun to rapidly deteriorate. At this point in time noting serious has occurred to the steel other than minor rusting. But if the interior is not addressed within the next year, it will become more serious and metal loss will become of a problem.

It is time to begin planning for a total rehab of the tank in order to protect the investment

Date: August 2014

Signature of Inspector: *Jay L. Hoffman*

National Association of Corrosion Engineers (NACE) # 4250

Tank Photos





Roof failures



Interior ladder and steel above the high water line



Roof manway, ladder cage



Interior roof and sidewall note rusting on both



Interior sidewall



Interior roof and sidewall connection



Roof vent failing coating



Vent screen and rust





Small failures on roof



Same



Same



Same



Same



Roof manway



Roof



Roof



Tank to foundation note algae growth at base this is where tank sweats



Anchor bolt chair



Lower manway, foundation



Coating failing on anchor bolt chair



Same on overflow



Same



Ladder gate, water level indicator



DANGER
CONFINED SPACE
ENTER BY PERMIT ONLY

08.28.2013 10:06





Failing coating



Same



Tank sidewall coating failures





Tank ladder and safety climb

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

8. In response to Staff's Second Request, Item 13.g., explain why WSKY did not use Net Utility Plant rather than Total Utility Plant, as is generally used by the Commission, in its determination of whether the Plate Settler Project's construction required the Commission's approval.

Response: On further review of internal WSKK correspondence from December 2013, WSKK considered whether the Plate Settler Project's construction would require Commission approval based on Net Utility Plant rather than Total Utility Plant. WSKK's response to Item 13.g. of the Staff's Second Request for Information should be amended to reflect that change. As of December 31, 2012, WSKK reported Net Utility Plant of approximately \$5,500,000. Because the project was anticipated to cost approximately \$350,000, it would have amounted to approximately 6.3% of the net plant at the time consideration was given for Commission approval. The project's actual cost of \$372,831 does not affect the analysis that the Commission generally considers this size increase in utility plant to be ordinary. It should be noted that both the Commission and its Staff have indicated that it may be appropriate to consider Total Utility Plant in making this determination. For example, in Carroll County Water District No. 1, Case No. 2014-00174, at 2 (Ky. PSC July 21, 2014), the Commission analyzed this issue based on the utility's total and net utility plant value. The Commission Staff has on several occasions considered whether a project is in the ordinary course using total utility plant as opposed to net utility plant. See, e.g., PSC Staff Opinion 2014-011 (Sept. 3, 2014).

CASE No. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brian Halloran

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

9. In response to Staff's Second Request, Item 13.i., WWSY provided information regarding the amount of chemicals for the 24 months prior to the completion of the Plate Settler Project and for all of the months thereafter. Using the information in that response, provide a calculation that shows that the amount of calcium hypochlorite and powder activated carbon used at the plant has been reduced by 40 percent since the completion of the project.

Response: Please refer to the attached file labeled "*Staff DR 3.09 – Chemical Reduction Calculation*". The percentage of reduction in chemical usage is calculated by taking the difference between the pounds of chemicals used per 1,000 gallons of water of the month since the plate settler project was implemented and the same month from the prior year divided by the prior year. WWSY only has small sample size of 6 months of data since the Plate Settler Project was implemented in June 2015. The noticed reduction in chemical savings has not materialized to the 40 percent for each chemical as forecasted at the time of the filing, but rather approximately a 25 percent and 32 percent reduction for Calcium Hypochlorite and Powder Activated Carbon, respectively.

Witness: Bruce Haas, Brian Halloran

Staff DR 3.09

*Chemical Reduction
Calculations*

(see attached Excel file)

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

10. Refer to WSKY's response to Staff's Second Request, Item 15.a. Provide copies of each work order, or other internal document, that supports the amount recorded for each asset account for June 2015. The information provided in the response to this request should clearly show the name of each employee, the employee's time expended on the work order, and the wage rate.

Response: Please refer to the attached file labeled "*Staff DR 3.10 – Capitalized Time by Account*". The capitalized time during the test year is organized by account number and asset number. The Company uses the group asset method for recording plant asset activity. One asset number is made up of many field activities, purchases, and capitalized time from various small projects that would be applied to one specific account number within that company. The Company does not have any formal policy for documenting details of individual's capitalized labor. Employees are instructed to capitalized labor based on the "Capitalized Time Guidelines" provided in attached file labeled "*Staff DR 3.10 – Capitalized Time Guidelines*". These guidelines are the basis for employees to capitalize the labor that is necessary to bring an asset to the condition and location necessary for its intended use. All capitalized time included in this filing are based upon these guidelines and the Employee's labor is required for the replacement of existing assets and services

Witness: Brian Halloran

Staff DR 3.10

*Capitalized Time by
Account*

(see attached Excel file)

Staff DR 3.10

Capitalized Time Guidelines

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

11. Refer to WSKY's response to Staffs Second Request, Item 39.a.

a. For each listed subsidiary, provide a detailed narrative description of all regulated and non-regulated operations. This description should include the number of customers served by each regulated and non-regulated water and wastewater division.

b. Provide the calculation of the ERC Count for each listed subsidiary showing the number of water and wastewater customers served by each regulated and non-regulated division separately.

c. State whether "Water Serv Corp Kentucky" is the only member of Utilities, Inc. that provides service pursuant to a management service contract. If "Water Serv Corp Kentucky" is not the only member, list all other management service contracts.

d. The "ERC Count" for "Water Serv Corp Kentucky" is stated at 7,204. State whether the ERC Count includes only water customers served through regulated operations, or if it also includes wastewater customers that are served through the management contract with the city of Clinton. If the "ERC Count" does not include wastewater customers, explain where in WSKY's test-year expenses that Water Service Company wages for employees that are not local to Kentucky's operations were allocated to the management contract. These costs do not appear to be included in the \$154,344 that is shown in the Application, Exhibit 4, Schedule B, page 1 of 2, line 38.

e. Discuss in detail the process used by Water Service Corporation to respond to billing questions, service complaints, or other inquiries submitted by a wastewater customer of the city of Clinton. The discussion should include the identification of the Water Service

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Corporation customer service center that would receive the customer's initial telephone call.

Response:

- a. Please see the attached file labeled "*Staff DR 3.11a – Narratives of UI Operations*" for detailed narratives about all regulated and non-regulated UI operations. For a listing of water and wastewater customers as of 6/30/2015, please refer to the attached file labeled "*Staff DR 3.11a – Customer Counts*".
- b. Please see the attached file labeled "*Staff DR 3.11b – ERC Counts*". This file contains the number of water and wastewater ERC's served by each regulated and non-regulated division separately. Please note that the ERC counts are from June 2015.
- c. Yes, "Water Serv Corp Kentucky" is the only member of Utilities, Inc. that provides service pursuant to a management service contract.
- d. The ERC count of 7,204 includes only water customers served through regulated operations. There are no Water Service Company wages for employees that are not local to Kentucky's operations that were allocated to the management contract. These costs are not included in the amount of \$154,344, because there are no costs from non-Kentucky employees.
- e. The process used by Water Service Corporation to respond to billing questions, service complaints, or other inquires submitted by a wastewater customer of the city of Clinton goes through the same channels as a water customer and the customers are treated equally.

Witness: Brian Halloran

Staff DR 3.11a

*Narrative of UI
Operations*

FLORIDA SERVICE AREAS AND OVERVIEW

Utilities, Inc. of Florida owns and operates 13 water and wastewater utilities within the State of Florida consisting of the following companies: Tierra Verde Utilities Inc., Lake Placid Utilities Inc., Utilities Inc. of Longwood, Cypress Lakes Utilities Inc., Utilities Inc. of Eagle Ridge, Mid-County Services Inc., Lake Utilities Inc., Utilities Inc. of Florida, ACME Water Supply & Mgmt. Co, Sanlando Utilities Corp., Utilities Inc. of Sandalhaven, Labrador Utilities Inc., and Utilities Inc. of Pennbrooke.

- 241.** **TIERRA VERDE UTILITIES INC.** provides wastewater service to approximately 2,094 customers in Pinellas County. Tierra Verde's service area is located entirely on a barrier island at the mouth of Tampa Bay. All of the Utility's sewage treatment service is purchased from the City of Petersburg. The utility uses purchased wastewater treatment.
- 242.** **LAKE PLACID UTILITIES INC.** in the *Sun 'n' Lake* Subdivision provides water and wastewater service to approximately 119 water and 121 wastewater customers in Highlands County.
- **Water Treatment** - Lake Placid operates two wells rated at 200 gallons per minute (gpm) each. The raw water is injected with liquid chlorine, discharged into a hydropneumatic tank, and channeled into the distribution system.
 - **Wastewater Treatment** - The Utility operates a 0.090 MGD annual average daily flow (AADF) permitted capacity extended aeration activated sludge secondary domestic wastewater treatment plant consisting of 100,226 gallons total aeration, 16,900 gallons of final sedimentation, 2,626 gallons chlorination and 6,913 gallons of sludge digestion.
 - **Reuse** - Lake Placid also operates a 0.090 MGD annual average daily flow (AADF) permitted capacity rapid infiltration basin system (R-001), consisting of two percolation ponds.
- 246.** **UTILITIES INC. OF LONGWOOD** provides wastewater service to approximately 1,618 customers in Shadow Hills in Seminole County.
- **Wastewater Treatment** - The utility operates a 0.500 mgd annual average daily flow (AADF) design capacity, 0.470 mgd aadf permitted capacity step aeration activated sludge domestic wastewater treatment plant consisting of flow equalization, influent screening, aeration, secondary clarification, chlorination, and aerobic digestion of biosolids. The flows to the facility are limited to 0.470 MGD, the permitted capacity of the reuse system. Water service is provided by the City of Longwood.
 - **Reuse** - Longwood also operates a 0.470 MGD AADF permitted capacity rapid infiltration basin system. R-001 is a reuse system which consists of seven (7) rapid infiltration basins (RIBs) with a total wetted area of 8 acres.

248. CYPRESS LAKES UTILITIES INC. provides water and wastewater service to approximately 1,491 water and 1,478 wastewater customers in Polk County.

- **Water Treatment**
- **Wastewater Treatment** -The utility operates a .190 million gallon per day Three-Month Average Daily Flow (3MADF), Type II, extended aeration domestic wastewater treatment facility consisting of : one equalization basin of 28,400 gallons total volume, one grit chamber of 15,000 gallon capacity equipped with a static screen, washing and dewatering, and a flow splitter box. There are three treatment trains: train 1 consists of one aeration tank of 79,100 gallons and one clarifier of 18,000 gallons and 240 square feet of surface area, train 2 consists of one aeration tank of 79,100 gallons and one clarifier of 18,000 gallons and 240 square feet of surface area, and train 3 consists of two aeration tanks of 71,600 gallons total volume and one clarifier of 10,150 gallons and 228 square feet of surface area. Flows from each train are combined and directed to three gravity sand filters, two of 50 square feet surface area and one of 40 square feet surface area, providing 140 square feet of total surface area, then to two chlorine contact chambers of 5,000 gallons total volume (each of 2,500 gallons volume). Flow to train 3 is isolated from the headworks components including the equalization basin, grit chamber, and flow splitter. There are two aerobic sludge holding tanks of 17,200 gallons total volume. Disinfection is achieved by using sodium hypochlorite solution. This plant is operated to provide secondary treatment with high-level disinfection.
- **Reuse** - Cypress Lakes also operates a .1901 MGD annual average daily flow (AADF) permitted capacity Part III slow-rate public access system (R-001), consisting of 137 acres at the Cypress Lakes Golf Course, three unlined wet weather storage, and one lined reject pond.

249. UTILITIES INC. OF EAGLE RIDGE provides wastewater service to approximately 855 customers in Lee County. Water service is provided by Lee County Utilities. The utility operates in two subdivisions:

Eagle Ridge

- **Wastewater Treatment** - Eagle Ridge operates a .318 million gallons per day (MGD) three month average daily flow (TMADF) domestic wastewater plant. The WWTP operates in an extended aeration mode consisting of: two surge tanks with a combined volume of 73,700 gallons, four aeration tanks with a combined volume of 255,180 gallons, two settling tanks with a combined surface area of 597.3 square feet, dual chlorine contact changers with a volume of 20,760 gallons, two aerobic digesters with a combine 112,200 gallons; one 1,329,500 gallon reclaimed water storage pond; one 600,000 gallon, lined, reject water storage pond. High level disinfection is provided by hypochlorite solution. Water service is provided by Lee County Utilities.
- **Reuse** - Eagle Ridge also operates a 0.433 MGD TMADF permitted capacity slow-rate public access system. R-001 is a reuse system which directs reuse water to the reclaimed water storage pond at a golf course. The irrigation system pump station directs the flow to the 90 acre golf course.

Cross Creek

- **Wastewater Treatment** - Cross Creek operates a 0.249 million gallons per day (MGD) maximum monthly average daily flow (MMADF) extended aeration activated sludge process domestic wastewater treatment (WWTP) consisting of: one 92,700 gallon surge tank; one 85,975 gallon, one 69,000 gallon, one 43,750 gallon, and one 56,430 gallon aeration tanks; two settling tanks with a combined surface area of 733 square feet; dual tertiary filtration which includes two 12.6 square foot cylindrical filters and two 16.0 square foot rectangular filters; dual 6,573 gallon chlorine contact tanks; one 9,933 gallon, one 18,610 gallon, and one 24,482 gallon digesters; one 690,000 gallon and one 200,000 gallon reclaimed water storage tanks; one 375,000 gallon reject water storage tank. High level disinfection is provided by sodium hypochlorite solution. An existing 0.249 MGD MMADF permitted capacity slow-rate public access system.
- **Reuse** –Cross Creek also operates a reuse system that provides public access irrigation to the Cross Creek Country Club 60 acre golf course.

250. MID-COUNTY SERVICES INC. provides wastewater service to approximately 3,355 customers in Pinellas County. Mid-County is located in a region which has been designated by the Southwest Florida Water Management District as a critical use area.

- **Water Treatment**
- **Wastewater Treatment** - Mid-County Services Inc. provides wastewater service to approximately 3,355 customers in Pinellas County. The utility operates a 0.180 million gallon per day annual average daily flow (AADF) permitted capacity extended aeration domestic wastewater treatment facility consisting of flow equalization, aeration, secondary clarification, chemical feed, filtration, chlorination, and aerobic digestion of residuals.
- **Reuse** - Mid-County also operates a .90 MGD AADF permitted discharge.

251. LAKE UTILITY SERVICES INC. provides water, wastewater and reuse services to approximately 9,974 and 3,817 wastewater customers in Lake County. The Utility's water service territory is made up of three separate areas. The largest part of the service territory is in Clermont and consists of the interconnected LUSI North and Lake Groves service areas. The LUSI North system provides water service to mostly residential customers, and consists of several small, interconnected systems. In addition, LUSI North is connected to the Lake Groves area via a water main along U.S. Highway 27. Four Lakes and Lake Saunders are two separate water-only systems that are also part of LUSI's service territory. They both serve small residential areas and have their own water treatment facilities. The only system that provides wastewater service is the Lake Groves system. The utility operates in multiple subdivisions:

Lake Groves

- **Water Treatment** – The Utility operates a 6.0 MGD water treatment facility. The supply is facilitated via 3 ground water wells. There are two concrete GSTs one of which is 0.500MG and the second tank is 1.0 MG in capacity. Treatment consists of forced draft aeration, chlorination and odor control.
- **Wastewater Treatment** - The utility operates a 0.999 MGD permitted capacity wastewater treatment plant, consisting of influent screening, flow equalization, two anoxic/oxic

biological treatment units, secondary clarification, filtration, chlorination, aerobic digestion of residuals and odor control equipment.

- **Reuse** -Lake Groves also operates a 1.0 MGD annual average daily flow permitted capacity slow-rate public access reuse system.

252. **UTILITIES INC. OF FLORIDA** provides water and wastewater service to 6,829 water and 3,399 wastewater customers. UIF consists of 20 systems in the following counties: Marion, Orange, Pasco, Pinellas, and Seminole.

Marion County – Water & Wastewater

Golden Hills – Crownwood

- **Water Treatment** – The Utility operates a 0.641 MG max day water treatment facility comprised of two wells and a 10,000 gallon hydro tank. Treatment consists of chlorination.
- **Wastewater Treatment** - Crownwood operates a 0.040 MGD Three-Month Average Daily Flow (3MADF), Type III, extended aeration domestic wastewater treatment plant consisting of: four aeration basins of 37,200 gallons total volume, one clarifier of 6,500 gallons volume and 86 ft² surface area, one chlorine contact chamber of 1,400 gallons volume and one digester of 3,500 gallons volume. This plant is operated to provide secondary treatment with basic disinfection.
- **Reuse** -Crownwood also operates a 0.040 MGD three month average daily flow permitted capacity rapid infiltration basin (RIB) system. R-001 is a reuse system which consists of a two-cell RIB system, with 23,350 square feet of bottom surface area.

Orange – Water

Pasco County –

- **Water & Wastewater** -The Summertree and Orangewood systems in Pasco County purchase bulk wastewater treatment from Pasco County.
 1. Summertree
 2. Orangewood

Pinellas County – Water

Seminole County –

- **Water & Wastewater** - The Ravenna Park/Lincoln Heights and Weathersfield systems in Seminole County purchase bulk wastewater treatment from Sanford and Altamonte Springs respectively.

255. **SANLANDO UTILITIES CORP** provides water and wastewater to 10,221 water and 8,427 wastewater customers in Seminole County. Sanlando has 3 water treatment facilities and 2 wastewater treatment facilities, Des Pinar and Wekiva Hunt Club:

Woodlands Des Pinar

- **Water Treatment** - The Utility operates a 6.261 MGD water treatment facility. The supply is facilitated via 4 ground water wells. There are two concrete GSTs one of which is 0.250MG and the second tank is 0.875 MG in capacity. Treatment consists of cascade aeration, chlorination and corrosion control.

Wekiva Hunt Club

- **Water Treatment** - The Utility operates a 11.088 MGD water treatment facility. The supply is facilitated via 5 ground water wells. There are three concrete GSTs one of which is 0.500MG the second tank is 0.750 MG and the third tank is 1.0 MG in capacity. Treatment consists of cascade aeration, chlorination and corrosion control.
- **Wastewater Treatment** - The utility operates a 2.90 MGD annual average daily flow (AADF) activated sludge domestic wastewater treatment facility consisting of three (3) contiguous package wastewater treatment plants (0.97 MGD design capacity, each), connected in parallel with mechanical influent screening, equalization tank, aeration, clarification, chemical feed facilities, disinfection by chlorination, tertiary filtration, and dechlorination, two (2) 3.0 MG reclaimed water storage tanks, aerobic digestion of residuals and dewatering by one (1) vacuum assisted drying bed and one (1) Ashcroft belt press.
- **Reuse** -Wekiva also operates a 2.9 MGD AADF discharge to Sweetwater Creek, Class III fresh waters, 2956) being reduced to 0.87 MGD annual average daily flow (maximum at permitted capacity – limited to no more than 30% of annual plant flow), in compliance with Rule 62-600.550(8)(b), FAC. The outfall is approximately one foot in length and discharges at a depth of approximately zero feet.
- **Reuse** -Wekiva also operates a 0.4 MGD annual average daily flow permitted capacity rapid infiltration basin system. R-001 is a reuse system which consists of four rapid infiltration basins with an approximate wetted area of 338,000 square feet.

256. UTILITIES OF SANDALHAVEN provides wastewater service to approximately 903 customers in Charlotte County.

- **Wastewater Treatment** - The utility operates a .099 MGD annual average daily flow (AADF) permitted capacity domestic wastewater treatment facility. The plant consists of: influent barscreen, 20,000 gallons of flow equalization, one 170,000 gallon aeration tank, one 283 square foot clarifier tank, two 38 square foot filters, a mudwell, two 5,000 gallon chlorine contact tanks, and one 35,000 gallon digester tank.
- **Reuse** -Sandalhaven also operates a .099 MGD annual average daily flow permitted capacity rapid infiltration basin system. R-001 is a reuse system which consists of percolation ponds having capacity of .099 MGD.

259. LABRADOR UTILITIES

Labrador provides water and wastewater service to approximately 869 water and 867 wastewater customers in Pasco County.

- **Water** - The water treatment system has two wells, rated at 750 gallons per minute (gpm) and 200 gpm. Before it is pumped into the distribution system, raw water is treated with liquid chlorine for disinfection and a sequestration chemical for iron control. The ground storage tank has usable capacity of 30,600 gallons.
- **Wastewater Treatment** - The utility operates a .216 MGD three month average daily flow (TMADF) Type II extended aeration domestic wastewater treatment facility. The treatment facility consists of two equalization basins of 59,250 gallons total volume, nine aeration

basins of 255,000 gallons total volume, three clarifiers of 69,000 gallons total volume and 850 square feet total surface area, one 2,500 holding/dosing tank, two chlorine contact chambers of 6,200 gallons total volume, and three aerobic digesters of 38,000 total volume. This facility is operated to provide secondary treatment with basic disinfections. The plant is piped and valved to operate using a single train or multiple trains. The pipes and valves also allow process water to be transferred between trains.

- **Reuse** -Labrador also operates a .216 MGD Annual Average Daily Flow (AADF) permitted capacity Part II slow-rate restricted public access land application system (R-001). R-001 consists of one sprayfield, two emergency wet weather storage ponds underlain by a clay layer.

260. UTILITIES INC. OF PENNBROOKE

- Utilities Inc. of Pennbrooke is a water and wastewater system providing services to approximately 1,371 water customers and 1,230 wastewater customers.
- **Water** – Pennbrooke operates a water system with a maximum day capacity of 1.296 MG including two supply wells rated at 600 gallons per minute (gpm) each, three 50,000-gallon steel ground storage tanks, two hydropneumatic tanks rated at 7,500 gallons and 10,152 gallons, respectively, and three 600 gpm high service pumps. The water is disinfected using hypo chlorination, and the chemical known as "Aquadene" is used for iron sequestration. Fire hydrants are located throughout the distribution system.
- **Wastewater Treatment** - The utility operates a 0.180 million gallon per day annual average daily flow (AADF) permitted capacity extended aeration domestic wastewater treatment facility consisting of flow equalization, aeration, secondary clarification, chemical feed, filtration, chlorination, and aerobic digestion of residuals.
- **Reuse** -Pennbrooke also operates a 0.180 MGD annual average daily flow permitted capacity slow-rate public access system. R-001 is a reuse system which consists of irrigation of the golf course, landscape and common areas, with a total of 72.3 acres of irrigated area. R-001 also includes rapid infiltration basins # 3 and 4, which have a wetted area of 2.4 acres and a permitted capacity of 0.080 mgd AADF.
- **Reuse** -Pennbrooke also operates a 0.030 MGD annual average daily flow permitted capacity rapid infiltration basin system. R-002 is a reuse system which consists of two rapid infiltration basins used for reject water with a total wetted area of 0.7 acres having a capacity of 0.030 MGD.

254. ACME WATER SUPPLY & MANAGEMENT COMPANY

- ACME Water Supply & Management Company is a water system providing irrigation service to approximately 661 customers in Lake County, Florida.

SOUTH CAROLINA COMPANIES OVERVIEW:

In South Carolina the four listed companies United Utilities, Utilities Services of South Carolina ("USSC"), and Southland Utilities have all merged with the one surviving entity of

Carolina Water Service, Inc. or “CWS”. CWS provides water and sewer service to 8,060 and 11,308 water and sewer customers, respectively, in 21 portions of South Carolina. Former CWS provided water and sewer service in Aiken, Beaufort, Georgetown, Lexington, Orangeburg, Richland, Sumter, York and Williamsburg counties. United Utility Companies, Inc. provides water and sewer service to approximately 93 and 946 water and sewer customers, respectively, in portions of Anderson, Cherokee, Greenville, Greenwood, and Union counties. USSC provides water and sewer service to approximately 6,488 and 353 water and sewer customers, respectively, for compensation in portions of Abbeville, Anderson, Lexington, Richland, Saluda, Sumter and York counties. Southland provides water service to approximately 171 customers for compensation in portions of Lexington County. All South Carolina operations are regulated.

ATLANTIC REGION AREA AND OVERVIEW

NORTH CAROLINA OPERATIONS CONSISTS OF SIX (6) STATE AFFILIATES

Co # 182 - Carolina Water Service, Inc. of NC

Carolina Water Service, Inc. of NC (CWS of NC) company is a subsidiary of Utilities, Inc. serving water and sewer services in 31 counties in North Carolina. There are 78 systems (68 water/sewer and 10 sewer only) operating under the company serving 19,569 water and 11,984 sewer customers throughout the state.

Water from 143 community wells is treated and distributed in their respective water systems.

Wastewater is collected and conveyed to several wastewater treatment facilities ranging from 0.009 MGD to 0.630 MGD permitted flows.

Co # 183 - CWS Systems, Inc. of North Carolina

CWS provides water and sewer service to subdivisions in 8 counties in North Carolina. There are 22 water systems and 3 wastewater systems serving 8,661 water and 3,997 sewer customers throughout North Carolina. Three of these water systems and two wastewater systems are located in the mountains, two water systems and one wastewater system are located in the coastal area and the remaining seventeen water systems are located in the central part of the state near Raleigh, NC. Wastewater is collected and conveyed to several wastewater treatment facilities ranging from 0.30 MGD to 0.6 MGD permitted flows. These are both extended aeration wastewater treatment plants with direct stream discharges.

Co # 187 - Carolina Trace Utilities, Inc.

Carolina Trace Utilities, Inc. provides water and sewer service to 1,570 water and 1,529 sewer customers and is located south of the City of Sanford in Lee County, North Carolina. Carolina Trace Utilities, Inc. purchases water from the City of Sanford at two metered entry points on the system and has a 150,000 gallon elevated storage tank. The wastewater system consists of a combination of gravity mains and

force mains from six sewer pump stations conveying wastewater to a 0.675 MGD extended aeration treatment plant with stream discharge.

Co # 181 - Elk River Utilities Inc.

The Elk River combined water and sewer system, located in Avery County just outside of Banner Elk, North Carolina serves 288 water and 126 sewer customers in the Elk River and surrounding communities. Water is supplied by deep wells tapped into fractured bedrock which is chlorinated before entering the distribution system. Wastewater is collected and conveyed to a 0.080 MGD wastewater treatment plant.

Co # 188 - Transylvania Utilities Inc.

The Connestee Falls combined water and sewer system, located in Transylvania County just outside of Brevard, North Carolina serves approximately 1,927 water and 1,268 sewer customers in the Connestee Falls community. Water is supplied by deep wells tapped into fractured bedrock which is treated before entering the distribution system. Wastewater is collected and conveyed to either a 0.300 MGD or a 0.020 MGD wastewater treatment plant.

Co # 191 - Bradfield Farms Water Company

The Bradfield Farms combined water and sewer system, located in Mecklenburg and Cabarrus Counties just outside of Charlotte, North Carolina serves approximately 999 water and 1,158 sewer customers in the Bradfield Farms and surrounding communities. Water is supplied by deep wells tapped into fractured bedrock which is chlorinated before entering the distribution system. Wastewater is collected and conveyed to a 0.460 MGD wastewater treatment plant.

Co # 180 - Hardscrabble

Utilities, Inc. was appointed emergency operator of this system by the North Carolina Utilities Commission and serves approximately 108 wastewater customers. Utilities, Inc. does not own this system and is reimbursed for any costs that it may incur as the emergency operator. The appointment is outlined in the order for Docket No. W-796, Sub 12.

Co # 195 – Cross State

Utilities, Inc. was appointed emergency operator of this system by the North Carolina Utilities Commission and serves approximately 176 water customers. Utilities, Inc. does not own this system and is reimbursed for any costs that it may incur as the emergency operator. This appointment is outlined in the order for Docket No. W-408, Sub 9.

TENNESSEE OPERATIONS CONSISTS OF ONE (1) STATE AFFILIATES

Co # 220 - Tennessee Water Service Inc.

The Chalet Village North water system, located in Sevier County just outside of Gatlinburg, Tennessee serves approximately 566 water customers in the Chalet Village community. Water is supplied by deep wells tapped into fractured bedrock which is treated before entering the distribution system and a portion of water is purchased from City of Gatlinburg.

WEST BU AREAS AND OVERVIEW

The West Business Unit operates in Nevada and Arizona. Nevada operations consist of 2 water-only utilities (Sky Ranch Water Service and Utilities Inc. of Nevada.) and 2 water-wastewater utilities (Spring Creek Utility Co. and Utilities Inc. of Central Nevada). The Arizona operations is comprised of 2 water utilities (Bermuda Water Company and Perkins Mountain Water Company) and 1 wastewater utility (Perkins Mountain Utility Company). Each of these is a regulated utility.

ARIZONA COMPANIES:

1. Co # 425 - Bermuda Water Company (BWC) is a water only system which serves the southern portion of Bullhead City, most of Fort Mojave Mesa and the northern portion of Mohave Valley which are located along the Colorado River in Mohave County, Arizona. The system spans an area 10 miles north to south and two to four miles east to west with the certificated area covering all or a portion of 24 of the square mile sections. The southern portion of the service area resembles a “checker board” due to land ownership of alternating sections by the Fort Mojave Indian Reservation, the State of Arizona, and the U.S. Department of the Interior, Bureau of Land Management (BLM).

The system is designed to provide potable water and sufficient water pressure to provide fire protection service to residential and commercial customers in the service area. There are 8,248 meters in ground with a build out of approximately 11,200 meters. Currently there are 7,848 customers. Bermuda has developed two distinct pressure zones to take advantage of the geographic elevations in order to supply water using gravity flows in the distribution system. Pressure reducing valves are strategically located throughout the system.

Bermuda wholesales water to:

- Arizona American in Section 23, T19N, R22W,
- Sunrise Vista Utility in Section 18, T19N, R22W,
- Fort Mojave Tribal Utility Authority in Section 14, T18N, R22 W. There is also a tie-in at the Mesquite Creek subdivision on Boundary Cone Road to wholesale water to the Fort Mojave Tribal Utility Authority.

2. Co # 426 - Perkins Mountain Water Company was established for a prospective development and currently serves no customers. It is water only.
3. Co # 427 - Perkins Mountain Utility Company was established for a prospective development and currently serves no customers. It is the sewer-only counterpart for Perkins Mountain Water Company.

NEVADA COMPANIES:

1. Co # 451 - Spring Creek Utility Co. operates in Elko County, Nevada. The rural community of Spring Creek, Nevada, is located approximately 10 miles southeast of Elko, Nevada, on Lamoille Highway (State Route 227) and is primarily residential with minimal commercial and irrigation customers. The community covers an area approximately 8 miles east-west by 9 miles north-south (approximately 23 square miles total), and is governed by the Spring Creek Association (SCA), a homeowner's association. Spring Creek Utility Co.'s (SCUC) service territory and the SCA's boundaries almost mirror one another. The site was subdivided into 5,420 large lots, ranging in size from about 1 to 10 acres.

SCUC maintains two public water systems, one serving the Mobile Home Park (the 200 Tract or MHP), and a separate water system serving the Housing Section (the 100, 300, and 400 Tracts). All of the water produced is treated with 12.5% sodium hypochlorite for disinfection. SCUC owns water right permits and certificates authorizing the use of 7,103 acre feet per year. A total of approximately 4,525 water customers are currently being served. There are approximately 113 sewer customers. There are no sewer-only customers in the SCUC service territory.

The Spring Creek water systems consist of more than 139 miles of piping. Generally, transmission piping is 6-inches to 12-inches in diameter. A large portion of the distribution piping is 2-inch, 3-inch, and 4-inch diameter PVC. Twelve groundwater wells supply water to the system and storage is contained in ten water tanks for a total of 5 MG of storage. The MHP has three wells, all of which exceed the maximum contaminant level for arsenic under the new Arsenic Rule. All three wells have site specific coagulation/filtration arsenic treatment.

The Spring Creek wastewater systems include approximately 3.5 miles of main, a wastewater treatment plant and two septic systems. The Company owns 12 wells, all of which are in operation.

2. Co # 453 - Utilities Inc. of Central Nevada (UICN) currently covers approximately 43 square miles and consists of five individual water systems:

Calvada Valley water and sewer system,
Country View Estates/Calvada North water and sewer system,
Calvada Meadows water system,
Mountain View Estates water system,
Mountain Falls' water and sewer system.

UICN is one of three utility companies providing water and sewer service in the Pahrump Valley. UICN serves the southern, central and northern areas of Pahrump. UICN's service area is about 90 percent of the total area served by the three utility companies in the Pahrump Valley. UICN currently has approximately 4,807 water customers and 3,257 sewer customers. All of the water produced is treated with 12.5% sodium hypochlorite for disinfection. There is no other treatment.

Desert Utilities Inc. serves approximately 3.5 square miles in north Pahrump. Pahrump Utility Company serves approximately 1.0 square mile in south Pahrump. Both service areas are adjacent to UICN's. There are also over 11,000 domestic wells throughout Pahrump.

Over the 20 year analysis period there is estimated to be approximately 0.48% growth annually. Based on the existing water supply well capacities, there are no anticipated water supply problems in the near future. However, UICN's wells are supplied from Basin 162. Basin 162 is over appropriated (paper water rights vs. perennial basin yield) and Nye County has a groundwater level monitoring program in which UICN participates.

The service area is comprised of five separate water distribution systems which have:

- 98 miles of water mains ranging from 4" to 18"
- 5 ground storage tanks,
- 2 hydro tanks,
- 14 wells
 - 12 potable
 - 2 irrigation wells

The service area is also comprised of three separate sewer collection and treatment systems:

- 3 sewer systems - 66 miles of sewer mains
- 3 wastewater treatment systems
 - Plant 3 in the Calvada Valley area
 - 1.50 MGD sequencing batch reactor (SBR) facility
 - Facility includes a surge tank, biological treatment, travelling bridge tertiary filters and an ultraviolet/chlorine disinfection system
 - Solids are treated by aerobic digestion and dewatering prior to hauling off-site for ultimate disposal
 - facility currently treats approximately 582,000 gpd
 - effluent disposal is to adjacent 160 acres of vacant land and the Lakeview Executive Golf Course
 - Plant F in the Calvada North area

- 50,000 gpd package plant
 - Treatment
 - Biological treatment
 - Chlorine contact tank for disinfection
 - Solids are treated in an aerobic digester and stored for hauling off-site
 - Existing flows to the facility are approximately 22,000 gpd. Effluent disposal at this facility includes on-site rapid infiltration basins and an on-site spray irrigation site
- Mountain Falls in the south
 - Treatment:
 - SBR for biological treatment, filtration, and disinfection
 - Solids are treated by aerobic digestion and dewatered prior to hauling off-site for ultimate disposal
 - Facility currently treats approximately 70,000 gpd and has a rated capacity of 750,000 gpd.
 - The effluent is used at the Mountain Falls golf course for irrigation
3. Co # 450 - Utilities, Inc. of Nevada (UIN) owns and operates the water utility in Cold Springs, Nevada, located approximately 10 miles northwest of Reno on U.S. Highway 395 at the Nevada / California state line. The water utility's service area encompasses Sections 7 – 10, 15 – 22, 27 – 34 of Township 21 North, Range 18 East, within Washoe County, Nevada. UIN currently serves 3,240 customers with potable water service only. The customer base is approximately 95% single family residential and 5% commercial. The growth in UIN is approximately 80% built out with another 700 +/- residential homes yet to be constructed.

The water utility service area is divided into four (4) pressure zones that are fed from four (4) ground level water storage tanks located throughout the perimeter of the valley. Water to the storage tanks is supplied from five (5) wells located in two (2) hydrographic groundwater basins. All of the water produced is treated with 12.5% sodium hypochlorite for disinfection. There is no other treatment. The distribution system consists of 47.5 miles of mostly PVC pipe (46.14 miles of 6" – 14"). There is almost 1.5 miles of asbestos cement pipe (10") which crosses the playa (dry lake). The Company owns five wells, all of which are in operation. Utilities, Inc. of Nevada has four ground level water storage sites in its four pressure zones. The storage capacity is 2.35 MG.

4. Co # 452 - Sky Ranch Water Service's (SRWS) water system encompasses an area within Washoe County northeast of the intersection of Pyramid Highway (NV 445) and La Posada Drive in Sparks, NV. More specifically, the area extends east from Pyramid Highway along La Posada Drive to Cordoba Drive, north to Tranquil Drive, west to Pyramid Highway, and south to La Posada Drive. The system spans an area approximately 1.75 miles north to south and 1.25 miles

east to west with the certified service area covering an area of 1.5 square miles. The service area is surrounded by the Washoe County water service area. SRWS currently serves 578 customers with potable water service only. There are 30 home lots available, however there have been no homes built since 1999.

The system is designed to provide potable water and sufficient water pressure to provide fire protection service to residential and commercial customers in the service area. Sky Ranch Water Service has two distinct pressure zones to take advantage of the geographic elevations in order to supply water using gravity flows in the distribution system.

The Company owns two wells, both of which are in operation. All of the water produced is treated with 12.5% sodium hypochlorite for disinfection. There is no other treatment. Both wells pump through the lower pressure zone to two ground level storage tanks (floating together). The booster pumps pump water from the lower pressure zone through the upper pressure zone to a ground level storage tank.

Sky Ranch Water Service has three ground level water storage sites in its two pressure zones (lower pressure zone and upper pressure zone). The storage capacity is 0.83 MG.

Utility Services of Illinois, Inc. (“USI”).

USI is a subsidiary of Utilities, Inc. providing water utility service to customers in 24 systems which currently serves approx. 15,220 water customers and 3,402 sewer customers throughout 12 counties in Illinois. USI owns and operates various assets such as ground water wells, ground level and elevated storage tanks, hydro-pneumatic pressure tanks, fire hydrants, and potable water distribution piping. Also included are wastewater treatment plants, lift stations, gravity collection mains, sewer force mains and manholes. USI manages these assets as described in the following document.

The rates charged by USI are regulated and approved by the Illinois Commerce Commission (“ICC”).

1. Water systems
 - a. **Water Supply**¹ – collectively 43 groundwater wells and one surface water treatment plant.
 - b. **Water Treatment** – includes disinfection on all groundwater supplies and a varying occurrence of corrosion control, sequestering, and filtration, along with Fluoride addition.
 - c. **Storage** – more than 40 water storage tanks (ground storage, elevated storage and pressure storage) totaling over 2.8 million gallons of volume
 - d. **Distribution Mains and Services** – more than 263 miles of pipe ranging in size of 2-inches to 12-inches in diameter.
2. Wastewater systems
 - a. **Treatment plants**² – 8 wastewater treatment facilities

¹ Total of 22 water systems of which 3 purchase bulk water from other suppliers leaving a total of 19 well water and 1 surface water system

- b. **Collection mains** – includes more than 45 miles of mains
- c. **Lift Stations** – approximately 23 lift stations

Water

USI owns and operates 43 groundwater wells, nearly 264 miles of water mains, and more than 40 water storage tanks (ground storage, elevated storage and pressure storage). 3 systems currently utilize purchased water from a bulk water supplier. The ground water supplies serving the other systems use chemical injection equipment for disinfecting the water supply using liquid sodium hypochlorite. Other chemical treatments include the addition of polyphosphate for corrosion control and sequestering naturally-occurring iron and manganese. Fluoride is also added to the ground water supplies. Additionally, USI has a small number of iron filtration units, water softeners and radium removal equipment in service.

Sewer

USI owns and operates 8 wastewater treatment plants with over 45 miles of collection mains and 21 lift stations. The combined total treatment capacity at these facilities is approx. 1.765 MGD and consists of both conventional treatment and lagoons with aeration. Additionally, 1 system relies on bulk purchased sewer treatment available from nearby a municipality.

Asset Type	Quantity	Capacity	Comment/Description
Wells	43	50-500 gpm	Submersible and Turbine Pumps
Treatment	Varies based on system water quality	N/A	Iron and/or manganese removal, radionuclide removal, ion-exchange softeners, corrosion control, fluoride addition and disinfection
Elevated Tank/Standpipe	9	50,000 gal-435,000 gal	Welded Steel, bolt-together or riveted tanks
Hydro-pneumatic	28	3,500-30,000 gal	Pressure and vacuum relief valves ranging from 3/4" to 2" are installed.
Ground Storage	9	32,000-241,000 gal	Bolt-together; Steel; Concrete structure
Water Mains	1,388,640 lf	2" to 12"	PVC, DIP, CI, AC (transite) pipe
Water Valves	TBD	2" to 12"	Working to include in Phase 2 of the Asset Registry
Hydrants	TBD	Post-type (flushing) and Fire Hydrant	Working to include in Phase 2 of the Asset Registry.
Backflow Prevention	TBD	¾" to 2"	Installed on potential cross connection hazards including WWTP and Lift stations. Internal "annual" testing performed per Company guidelines.
SCADA Systems	9	N/A	Varies based on system size and monitoring requirements

² Total of 9 wastewater collection systems of which 1 purchases bulk sewer treatment from a bulk provider leaving a total of 8 treatment plants

SEWER

Asset Type	Quantity	Capacity	Comment/Description
Wastewater Treatment Plant	8	0.009 MGD - 0.630 MGD	Disposal of effluent occurs from direct discharge into receiving streams
Lift Stations	23	5 to 50 hp	Duplex lift stations
Gravity Mains	237,600 lf	4" to 12"	PVC, VCP, AC Pipe
Sewer Force Mains	TBD	2" to 6"	Working to include in Phase 2 of the Asset Registry.
Manholes	TBD	4' – 5' Diameter	Working to include in Phase 2 of the Asset Registry.

System Names comprising the consolidated Company of

(Previous) SYSTEM NAME	SUBDIVISION
Apple Canyon Utility Co (W)	Apple Canyon
Camelot Utilities Inc (W)	Camelot
Camelot Utilities Inc (S)	Camelot
Charmar Water Company (W)	Charmar
Cherry Hill Water Company (W)	Cherry Hill
Clarendon Water Company (W)	Clarendon
Del Mar Water Co. (W)	Del Mar
Ferson Creek Utilities Co (W)	The Windings of Ferson Creek
Ferson Creek Utilities Co (S)	The Windings of Ferson Creek
Galena Territory Utilities (W)	Galena
Galena Territory Utilities (S)	Galena
Killarney Water Co (W)	Lake Killarney
Lake Holiday Utilities Corp (W)	Lake Holiday
Lake Wildwood Utilities Corp (W)	Lake Wildwood
Northern Hills W & S Co (W)	Northern Hills
Northern Hills W & S Co (S)	Northern Hills
Lake Marian Water Corp (W)	Lake Marian
Wildwood Water Service Comp (W)	Mulford's Wildwood
Valentine Water Service Inc (W)	Valentine Manor
Walk Up Woods Water Company (W)	Walk Up Woods
Whispering Hills Water Comp (W)	Whispering Hills
Holiday Hills Utilities Inc (W)	Holiday Hills
Medina Utilities Corporation (S)	Lake of the Woods
Westlake Utilities Inc (W)	Westlake Village
Westlake Utilities Inc (S)	Westlake Village

**of
Inc.**

**Utility
Services
Illinois,
("USI")**

Cedar Bluff Utilities Inc (S)	Cedar Bluff
Harbor Ridge Utilities Inc (W)	Harbor Ridge
Harbor Ridge Utilities Inc (S)	Harbor Ridge
Galena Territories - Oakwood (W)	Oakwood
Galena Territories - Oakwood (S)	Oakwood
Great Northern (Coventry Creek) (W)	Coventry Creek
Great Northern (Coventry Hills) (W)	Coventry Hills

Community Utilities of Indiana, Inc. (“CUII”)

The following information for “Community Utilities of Indiana, Inc.” consists of the consolidated Indiana companies of **Twin Lakes Utilities, Inc., Indiana Water Service, Inc., and Water Service Company of Indiana**. A request for formal consolidation of these (3) companies was submitted to the Indiana Utility Regulatory Commission (“IURC”) in Cause No. 44587 and subsequently approved. Water and Sewer rates are regulated by the IURC. The following information is taken separately from these (3) former companies as described below.

Twin Lakes Utilities, Inc. (TLUI)

Twin Lakes Utilities, Inc. (TLUI) provides water and sewer service to 3,127 water and 3,094 sewer customers located in Lake County, just east of Crown Point, Indiana 46307.

The water system consists of seven (7) shallow wells, two (2) water treatment plants with iron filtration system, one 200,000 gallon elevated storage tank and two (2) ground storage tanks (@ 500,000 gals. ea.). The wastewater system consists of a conventional activated sludge (extended-aeration type) wastewater treatment plant rated at 1.1 MGD with a stream discharge, along with a 400,000 gal. sludge holding tank; the collection system consists of fourteen (14) lift stations and a combination of gravity and force mains totaling over 193,000 l.f. The majority of the existing system was built and installed by developers beginning around 1967.

TLUI serves medium income residential developments. Twin Lakes Utilities, Inc. provides both water and wastewater service to the Lakes of the Four Seasons (“LOFS”) community, Stony Run Subdivision, Pointe Subdivision, Meadow Subdivision, Commercial accounts located on 109th Ave., Alicia Acres Subdivision, and residential accounts on Road 725 South.

Lakes of the Four Seasons (LOFS) is the largest community served with approx. 2,700 lots. This subdivision was developed as a resort community in 1967 and now has grown into a year-round neighborhood with close to 9,000 residents. This private, gated community offers: three (3) man-made lakes for fishing and recreation, an 18-hole golf course, an Olympic-size swimming pool, Clubhouse and restaurant, several recreational parks and three private beaches.

The wastewater collection system is comprised mainly of A/C pipe with a section of the collection system running under part of Holiday Lake. The manholes are concrete and have undergone significant inspection, maintenance and upgrades over the past 5-years to reduce the effects of Inflow & Infiltration (I&I) present in the collection system. Ongoing work is performed each year on a minimum of 10% of the collection system to pressure clean, televise and identify sections of main that have failed or allow entry points for I&I. Any deficiencies identified would be corrected through our Capital Improvement Plan each year and such work summarized and submitted to the Commission on a semi-annual basis.

The water distribution is comprised mainly of A/C pipe with DI Pipe in cul-de-sacs within LOFS, and C900 in the newer subdivisions. Significant work has been done over the last 5 years to optimize the flushing program and ensure high quality of water provided to the customers. Hydrant repairs/maintenance, water treatment plant upgrades (media/underdrain replacements), and conducting uni-directional

flushing on a semi-annual basis in the water distribution system have contributed to a much higher quality of service and have significantly reduced the number of quality complaints from customers.

Water Service Company of Indiana

Water Service Company of Indiana (WSCl) was purchased in 2002 from Jasper County Utilities and is located west of Demotte, Indiana.

WSCl provides water and wastewater service to the Island Grove Mobile Home Park, commercial accounts on SR10 and County Line Road. WSCl provides wastewater-only service to the Holiday Lakes Campground.

We provide water and sewer service to 184 water and 189 sewer customers with 30,353 LF of collection system and 16,310 LF of distribution mains. The water system consists of two (2) shallow wells, one (1) water treatment plant, and a newly installed (in 2015) 10,000 gal. hydro-tank. The water distribution system consists of PVC pipe and we have not experienced a water main break since the system was acquired in 2002. The customer water metering system is 100% AMR that was completed in 2014.

The wastewater collection system is mostly made up of VCP and PVC pipe and consists of two (2) lift stations and a combination of gravity and force mains with concrete manholes delivering residential wastewater to an extended-aeration activated sludge wastewater treatment plant rated at 0.155 MGD with stream discharge and a 50,000 gal. sludge holding tank.

Indiana Water Service, Inc. (IWSI)

Indiana Water Service, Inc. (IWSI) was purchased in 2002 from Lincoln Utilities and provides water service to 1,660 water customers located in Lake County, IN in the South West quadrant of the Town of Merrillville, Indiana. IWSI purchases bulk water via (2) bulk interconnects from Indiana American Water and distributes for resale to our customer's. This is a medium income residential development with single family homes and some apartments and commercial accounts on US30. There are three (3) churches, one (1) elementary school and two (2) pre-schools.

The water distribution consists of two (2) six-inch metered interconnections with Indiana American providing bulk water service and consists of 73,575 linear feet of DI pipe and 15,025 linear feet of PVC pipe. The ductile iron (DI) pipe has been prone to breaks and splitting and is being evaluated for water main replacements in areas as identified and prioritized based on historic data. The Town of Merrillville owns and maintains the fire hydrants located within this water system. The customer metering system is 100% AMR, which was recently installed in 2013.

Water rates are regulated and approved by the Indiana Utility Regulatory Commission.

Water Service Corporation of Kentucky

Water Systems

Water Service Corporation of Kentucky (“WSC-KY” or “Company”) is a subsidiary of Utilities, Inc. providing water utility service to customers in 2 counties in Kentucky. There are 2 systems operating under the Company which currently serves approximately 6,238 water customers.

The rates charged by WSC-KY are regulated by the Kentucky Public Service Commission.

WATER

WSC-KY has (2) wells totaling 700 gpm serving approximately 685 ERCs in its Clinton, KY operations, and one 3 MGD-rated surface water treatment plant with capacity totaling 2,083 gpm. Water treatment includes disinfection and fluoridation on all groundwater supplies and coagulation, flocculation, sedimentation, and filtration to include disinfection, fluoridation, pH adjustment, and corrosion control on the surface water system.

WSC-KY has (6) ground storage tanks ranging in size from 18,000 gallons to 1,200,000 gallons.

The water distribution systems are comprised of a variety of materials including ductile iron pipe, PVC, galvanized, copper and cast iron pipe. Sizes range from 3/4” to 24”. There are approx. 100 miles of water main currently in place.

Asset Type	Quantity	Capacity	Comment/Description
Wells	2	700 gpm	Submersible Pumps
Ground Water Treatment Plant	1	700 gpm	1 Clear Well Pump. Disinfection and fluoridation
Surface Water Treatment Plant	1	2083 gpm	3 Raw Water pumps, 3 filter pumps, and 1 variable speed pump. Disinfection, fluoridation, PH adjustment, corrosion control, coagulation, flocculation, sedimentation, and filtration
Ground Storage	6	18,000-1,200,000 gal	
Water Mains	528 ,000 lf	3/4” to 24”	Predominantly PVC, and Cast or Ductile Iron Pipe
Water Valves	1,296	3/4” to 24”	
Hydrants	400	4”-6”	340 hydrants are used for fire protection and 60 are for flushing. Adequate pressure, volume, and capacity are maintained at each of the fire hydrants, for fire protection.
Backflow Prevention	5-WSC-KY	¾” to 4”	Installed on potential cross connection hazards including WTP and Portable meter set-ups

SCADA Systems	2	N/A	Varies based on system size and monitoring requirements
Booster Pump Station	1	50 gpm	2 High Service Pumps

*information obtained from compilation of JDE and internal asset tracking data bases. Subject to change with updated information.

VIRGINIA Systems

Colchester Utilities, Inc.

Colchester Utilities, Inc. services the subdivision of Harbor View, located in southeast Fairfax County, Virginia. The facility is designed to treat .080 MGD, providing extended aeration – activated sludge secondary treatment plus tertiary treatment consisting of phosphorous removal, filtration and UV disinfection.

Colchester Utilities, Inc. Treatment Plant is regulated and enforced by the Virginia Department of Environmental Quality (DEQ).

The Harbor View Sewer System, located in Lorton Virginia, services 169 wastewater customers in the Harbor View neighborhood and marina. The majority of the utility infrastructure was built in the 1963 with a capacity of .040 MGD. However, due to expansion of the subdivision and the imposition of stringent effluent limitations, the facility was expanded in 1972 to a capacity of .080 MGD and tertiary treatment facilities was added. Key Service Area parameters are listed in the table below.

% Residential	99%
% Commercial/Industrial	1%
Growth Rate (% annually)	0%

Wastewater treatment is provided by a tertiary treatment with a capacity of .080 MGD that consists of a 100 GPM lift station, collection system with 8 inch concrete pipes, two parallel aeration tanks with final clarifiers, flow equalization, dual media filters and UV disinfection. The following is a description of the Sewer infrastructure on-site:

Asset Type	Quantity	Capacity	Comment/Description
Wastewater Treatment Plant	1	.080 MGD	Sewer influent is collected and flows through an influent screen, is then pumped into aeration and clarified. Secondary effluent flows to equalization basin where it is pumped to dual multimedia filters. Each filter is manually backwashed and the backwash water is returned to the aeration basins. After filtration the effluent is disinfected by UV, and discharged into Massey Creek.

Lift Station	1	5 to 10 hp	Duplex
Gravity Mains	14,000 ft	8" to 15"	Concrete
Sewer Force Mains	2,000 ft	6" to 15"	Concrete
Manholes	59		Each manhole has some level of deterioration that would need to be addressed in a future I&I Project.
Blowers	3	10 HP	
Ultraviolet Disinfection	2		UV Disinfection was put in December 2013 and brought online in March 2014.
Dual Media Filters	2		
Stationary Generator	1	130KW	
Portable Generator	1	15 KW	
Office/ Lab building	1		Used for office and lab
Storage Building	1		Used for spare parts
Composite Sampler	1		HACH 900 Sigma sampler used for effluent composite sampling
Flow Meters	1		Used for measuring effluent flow
E.Q Basin Pumps	2		

Massanutten Public Service Corp.

Massanutten Public Service Corporation water and sewer system is located in Northwestern Virginia, Shenandoah Valley, in Rockingham County, serves approx. 2,228 water and 2,242 wastewater customers in the Massanutten Resort Community. Massanutten Resort is made up of approximately 1,100 permanent resident homes and 1,000 timeshares. Water is supplied by four wells tapping into three aquifers with chlorination at the wellhead prior to entering the water treatment facility. Wastewater is collected and conveyed to an activated sludge treatment plant with a capacity of 1.5 MGD. The majority of the utility infrastructure was built in the 1970's and the early 1980's. Most new infrastructure in 1990 to present has been timeshare and commercial units.

The water and wastewater companies are regulated by the Virginia State Corporation Commission and Virginia Health Department. The wastewater is also enforced by the Virginia Department of Environmental Quality.

The distribution system is predominantly PVC pipe. The following is a description of the Water infrastructure on-site:

Asset Type	Quantity	Capacity	Comment/Description
Wells	4	1,900 gpm	4 submersible pumps
Chlorination	4		At well head
Ground storage	7	1.55 million	Adamson tanks installed 1974-1977 good condition
Altitude valve vaults	3		There are three valve vaults with altitude valves to assist with filling the storage tanks at different elevations.
Water Mains	134,640 ft	2,4,6,8,10	PVC
Water Valves	288	2,4,6,8,10	
Fire Hydrants	230		204 are Kennedy 26 are waterous
Backflow Prevention	100		Required at all commercial buildings, annually tested.
Pressure Reducing Valves	0		No pressure reducing valves in system
Pressure Relief Valves	2		

Wastewater treatment is provided by an activated sludge plant with a capacity of 1.5 MGD. The collection system is mainly PVC pipe. The following is a description of the Sewer infrastructure on-site:

Asset Type	Quantity	Capacity	Comment/Description
Wastewater Treatment Plant	1	1.5 MGD	Sewer influent is collected and flows through an influent bar screen, is then pumped into aeration, clarified, and then gravity flows through two denite filters and then through two traveling bridge filters. After filtration the effluent is UV disinfected then post air and discharged into Quail Run stream.
Lift Stations	7	5 to 80 HP	
Gravity Mains	159,000 ft	6" to 15"	PVC
Sewer Force Mains	4,000 lf	6"	PVC
Manholes	875		

WATER SYSTEM

Wells:

Well 10 was drilled in June 1982 to a depth of 570 feet and is cased and grouted to a depth of 106 feet. In 2007, the well was flushed, screening installed, and re-sleeved above the screen. The current pump and screen configuration limits yield from well 10 to the water treatment plant to 620 gpm. The well discharge piping is located in a well house and is equipped with a rate of flow valve, a check valve, gate valves, a water meter, sampling tap, and a well blow-off line. Well is in good condition.

Well 20 was drilled in 1988 to a depth of 500 feet and is cased and grouted to a depth of 105 feet. Current configuration its yield is 375 gpm. The well discharge piping is located in a well house and is equipped

with a rate of flow valve, a check valve, gate valves, a water meter, sampling tap, and a well blow-off line. Well is in good condition.

Well 30 was drilled in February 1999 to a depth of 1070 feet. The well bore is 23 inches in diameter from 0 to 39 feet below ground, 17½ inches in diameter from a depth of 39 feet to a depth of 152 feet, and 11⅞ inches in diameter from a depth of 152 feet to a depth of 1070 feet. The well is cased with 12-inch steel casing to a depth of 152 feet. The well is grouted with cement grout to a depth of 105 feet. Additionally, the well is equipped with a well screen. A 125 hp submersible pump with a capacity of 520 gpm at 800 feet TDH pumps water to the water treatment plant. Its current operational yield is 500 gpm. The well discharge piping is located in a well house and is equipped with a rate of flow valve, a check valve, gate valves, a water meter, a sampling tap, and a well blow-off line. Well is in good condition.

Well 40 was drilled in September 1999 and is 1018 feet deep. The well bore is 16 inches in diameter from 0 to 105 feet below ground and 12 inches in diameter from a depth of 105 feet to a depth of 1018 feet. The well is cased with 12-inch steel casing to a depth of 105 feet. The well is grouted with cement grout to a depth of 105 feet. Additionally, the well is equipped with a well screen. Water is pumped from the well via a 125 HP submersible pump capable of delivering 450 gpm at 836 feet TDH to the to the water treatment plant. The current yield if this well is 500 GPM. Well 40's discharge pipe travels to the Well30 building where it merges with Well 30's discharge pipe and travels to the treatment plant. Well Is in good condition.

Storage Tanks:

Tanks/Capacity	Gallons	Date Installed	Date Interior Last painted	Date Exterior last painted
Zone 1 Tank	275,000	5/1/77	5/1/97	7/1/97
Zone 2 Tank	275,000	12/1/76	3/1/07	10/15/2013
Zone 3 Tank	500,000	7/1/74	10/1/98	5/1/07
Zone 4 Tank	250,000	7/1/74	10/1/96	10/1/96
Zone 5 Tank	250,000	7/1/74	5/1/92	5/1/99

Distribution Mains:

The 135,000 LF distribution system was installed primarily in the late 1970's and the 1980's. PVC, AC and ductile iron pipe was used throughout. Mains range in size from 2" to 12".

Service Lines:

The majority of the connections are a thin wall poly pipe. MPSC entered into agreement with the SCC to replace 60 service laterals over 10 year period starting in 2012 due to numerous breaks. Breaks come from poor bedding and thin wall poly.

Meters:

Existing manual-read meters are being replaced with AMR technology to improve accuracy, reduce meter read expense (O&M) and support improved conservation efforts. Wellhead meters are tested in place every 5 years and certified.

Hydrants:

Hydrants are considered by staff to be in good condition. They are exercised annually by staff during flushing and any noted problems are repaired by staff. Recent flow test completed on each hydrant with joint effort with local Fire Department and Staff. Hydrants are colored coded to Fire Department and NFPA standards 500-999 GPM Orange, 1000-1499 GPM Green and 1500 GPM and above Blue

Distribution Valves:

Distribution valves are gate valves and cast iron gate valves. They are considered by staff to be in good condition. The valves are kept located and marked and are exercised annually in the current O&M program.

Backflow Prevention:

Cross Connection Control program in place.

Chemical Feed Systems:

All four wells have a chlorine injection systems. Maintenance on these systems is in compliance with the guidelines.

Pressure Relief Valves:

All pressure relief valves are inspected annually in accordance with the guidelines.

Pressure Reducing Valves:

There are no pressure reducing valves in the system.

WASTEWATER SYSTEM

Collection System:

75% of the collection system is PVC and the remainder is terracotta pipe most of which was installed in the late 1970's and 1980's. It is thought by staff to be in good condition and expected to be about half way through its useful life. I&I investigation continues throughout the system to identify problem areas contributing to high flows from heavy rain/snow events which impact sewer treatment influent levels. Collection system cleaning is currently done on an annual budget of 10% of the system.

Lift Stations:

The 7 lift stations range in age from 15 to 40 years. Lift station structures and control panels are regularly inspected and are generally considered by staff to be in good or excellent condition. Staff's evaluation of lift station condition is based on ongoing visual inspections, the presence of aggregate and assessment of concrete degradation, as well as full drawdowns to check for I&I. MPSC plans to implement a program of annual inspection for submersible pumps. Pumping equipment is replaced as needed according to performance and structures are rehabilitated as required based on annual inspection usually under G/L capital expenditures. Three lift station are currently outdated and being reviewed to replace electrical controls.

Manholes:

The manholes are generally 40 years in age, consistent with the installation of the collection system. The condition of the manholes are good.

NEW JERSEY System

Montague Water & Sewer Co.

Montague Water & Sewer serves the High Point Country Club in Montague New Jersey. Presently the distribution system serves 696 water connections and 255 sewer customers, and the High Point Country Club Golf Course. Purchased in 1996 the water system has five wells, a 155,000 gallon water storage tank, and 68,000 feet of water mains. The sewer system consists of six leach disposal fields. The distribution system is predominantly asbestos pipe.

The following is a description of the water infrastructure on-site:

Asset Type	Quantity	Capacity	Comment/Description
Wells	5	30 to 350 gpm	5 submersible pumps
Chlorination	5		At well head
Water Storage	1	155,000 gal	Concrete
Water Mains	75,290 ft	6" 8" 10" 12"	transite asbestos concrete, & PVC
Water Valves	101	6"	Gate Valves
Fire Hydrants	37		Muller/ Kennedy
Backflow Prevention			Required at Golf Course, residences.
Pressure Reducing Valves	1		Pressure is reduced to 60 psi from 96 from the main system for Armstrong area.
Pressure Relief Valves	5		Each well has a 125 psi pressure relief valve

Wastewater treatment is provided by leach field disposal. The collection system is transite concrete pipe. The following is a description of the sewer infrastructure on-site:

Asset Type	Quantity	Capacity	Comment/Description
Leach disposal fields	6	43,000 gallons/ day	Off water received from residences, to point tanks then to leach disposal.
Pump Stations	6	½ 3hp	3 Duplex
Sewer Gravity Mains	11,350 ft	8" to 15"	Transite Asbestos Concrete
Manholes	50		

WATER SYSTEM

Wells:

The five wells range in age from 15 to 49 years. Well #1, Well #2, Well #3 have had Hydro Tank replacements to upgrade old infrastructure to retard system failures. Most of the old Hydro Tanks were from original installations in the sixties. Inspections of the above ground equipment and pump performance are regularly completed on an annual basis. Draw-downs and pump efficiencies are monitored monthly.

Storage Tanks:

The one 155,000 gallon storage tank is inspected inside and out every five years. Inspection in 2016 and exterior re-coating is budgeted for in the 5-year capital plan.

Distribution Mains:

The 75,290 LF distribution system was installed primarily in the late 1950's and 2014. Concrete, ductile iron and PVC pipe was used throughout. Mains range in size from 6" 8" 10" 12". Relatively few service interruptions have been experienced as a result of main failures.

Service Lines:

The service lines are K copper.

Meters:

Existing manual-read meters are being replaced with AMR technology to improve accuracy, reduce meter read expense (O&M) and support improved conservation efforts. Well head meters are tested in place every 4 years and certified per commission requirements.

Hydrants:

Hydrants are exercised annually by staff during flushing and any noted problems are repaired by staff.

Distribution Valves:

Distribution valves are gate valves. The valves are kept located and marked and are exercised annually in the current O&M program.

Backflow Prevention:

The only commercial accounts that require backflow devices are covered under the Golf Course which includes the pro shop and community swimming pool. Test results are on file.

Chemical Feed Systems:

All five wells have chlorine injection systems which were installed, maintained and are in good condition. Maintenance on these systems is in compliance with the guidelines.

Pressure Relief Valves:

All Pressure relief valves are inspected annually in accordance with the guidelines.

Pressure Reducing Valves:

There is one pressure reducer in the Montague System located at the intersection of Riverview Way and Overlook Rd. Pressure is reduced to 60 psi from 96 from the main system for Armstrong area.

WASTEWATER SYSTEM

Collection System:

100% of the collection system is transite concrete pipe most of which was installed in the late 1950's and 1980's. Collection system cleaning is currently done on an annual budget of 10% of the system.

Lift Stations:

The 6 Lift Stations range in age from 15 to 49 years. Lift station structures and control panels are regularly inspected. Staff's evaluation of lift station condition is based on ongoing visual inspections, the presence of aggregate and assessment of concrete degradation, as well as full drawdowns to check for I&I. Montague Water & Sewer Co plans to implement a program of annual inspection for submersible pumps. Pumping equipment is replaced as needed according to performance and structures are rehabilitated as required based on annual inspection usually under G/L capital expenditures.

Subsurface Disposal Fields

Each lift station discharges into a subsurface disposal field. Four of these fields are gravity filed #1, #4, #5 and 1C & 1D.

Fields #2 and #3 are low pressure discharge and were replaced in 2007.

Any solids are collected in the primary point tanks influent then flows to the lift station where it is pumped into each field.

Receiving Manholes

These are inspected along with the lift stations and are done at the same time to insure they remain in good condition.

Manholes:

The manholes are generally 30 to 50 years in age, consistent with the installation of the collection system.

MARYLAND Systems

Maryland Water Service

Maryland Water Service consists of 2 water distribution systems, and one sewer system. The water distribution systems both purchase water. Highland Estates purchases from the City of Cumberland and

Pinto purchases from Allegany County who purchases from the City of Cumberland. Maryland Water Service services approximately 986 water customers and 947 sewer customers.

The sewer system for Pinto is fed by service laterals, and sewage travels approximately one mile to the wastewater stabilization lagoon. The capacity is 11.7 million gallons and yields a detention time of 24 days at designed flow.

Highland Estates distribution system is fed by 4" water mains. The system has one booster pump station.

% Residential	97%
% Commercial/Industrial	3%
Growth Rate (% annually)	No Growth Foreseen

Pinto purchases bulk water from Allegany County, who in turn purchases their water from the City of Cumberland. Pinto receives its water directly from the Allegany County storage tank on Brant Rd. and Wyoming Ave master meter. The water is delivered to the low pressure zone of the water distribution system through direct main pressure. There are two booster stations that pump out of the low pressure zone. One booster station is located near the Allegany County ground storage tank. Teakwood pump station supplies a separated low zone. The second booster station, New York Avenue Pump Station, pumps water from the low pressure zone to 2 / 75,000 gallon ground storage tanks located at our office. A third booster station, located next to the storage tank, pumps water into the high pressure zone. The high pressure zone has approximately 200 customers. The high zone has two 10,000 gallon and one 8,000 gallon underground storage tanks. There is also one 6,000-gallon hydro-pneumatic tank at the high zone control station. The pump stations are operated by a Mission control system. This tells the pumps when to turn on and off at their designed levels, which are programmed into the mission system. The signals are transmitted cellular phone lines to each of the stations.

Asset Type	Quantity	Capacity	Comment/Description
Water Source	--	--	Purchased (City of Cumberland and Allegany County)
Underground Storage Tanks	3	10,000 gal ea.	All located at High Zone/Pending replacement 2019
Ground Storage Tanks	2	75,000 gal ea.	Located at middle zone
Hydro-pneumatic	1	6000 gal	Internally cleaned and coated in 2014
Water Mains	172,635 lf	2" to 6"	Predominantly Ductile Iron
Water Valves	unknown	2" to 6"	
Fire Hydrants	30		
Backflow Prevention	1		Located at Pinto WWTP
Pressure Reducing Valves	1		Located on Brandywine Dr. in house inspected annually
Pressure Relief Valves	2		Inspected annually

Wastewater System: Pinto

Asset Type	Quantity	Capacity	Comment/Description
Wastewater Treatment Plant	1	.45 MGD	9 acre facultative aerated lagoon system. Sewer influent is gravity fed, flows through the aerated lagoon which is baffled into two sections to increase detention time, and then collected and gravity through the effluent contact tank where it is treated and discharged.
Lift Stations	1	955 gal	1 Duplex
Gravity Mains	129,311 lf	6" to 12"	Cast Iron,
Sewer Force Mains	150 lf	4"	PVC from Lift Station to Lagoon

Provinces Utilities, Inc.

The Provinces water system is located in the Chesapeake Bay watershed in Maryland, serves 1484 water customers. Water is supplied by wells, from an aquifer. The plant was built in 1972.

The water treatment plant is regulated by the Maryland Public Service Commission and Maryland Department of the Environment.

The Provinces is located in the Town of Severn MD, which is located about 15 miles south of Baltimore Md. The Provinces has 1,460 water service customers, and sewer service is provided by Anne Arundel County. The Provinces consists of four developments Provinces, Severn Meadows, Ridgfield, and Sand Ridge. The oldest houses, are in the Provinces Development, and were built between 1972 and 1974. The rest of the developments were built in the mid 80's.

% Residential	99%
% Commercial/Industrial	1%
Growth Rate (% annually)	No Growth Foreseen

The Provinces water treatment plant, located at 7948 Tower Court Road in Severn, MD was constructed in 1970 by Washington Homes and brought on-line in 1972. The plant was constructed to provide potable water for the new Provinces development, due to the lack of a county water system in the western part of Anne Arundel County.

The treatment plant is a 1.0 MGD water treatment facility, and is a Class IV in MD. There are 1482 connections the facility provides water service to including only one commercial connection, and the rest residential.

The water plant is fed by three subsurface wells.

Water System: Provinces Utilities Inc

Asset Type	Quantity	Capacity	Comment/Description
Water Source	--	--	Ground Water- Aquifer
Wells	3	300-540 gpm	Deep Well Turbine
Elevated Tank	1	300,000 gal	
Water Mains	69,959lf	4" to 10"	Ductile Iron
Water Valves	185	6" to 10"	
Fire Hydrants	100		Oldest 1971-2014
Pressure Reducing Valves	0		No pressure reducing valves in system
Pressure Relief Valves	0		No pressure Relief Valves

Green Ridge Utilities, Inc.

Green Ridge Utilities consists of two water systems, Green Ridge and Lakeside Vista. Both are located in the Chesapeake Bay watershed in Maryland, serves 928 water customers. Water is supplied by wells, from an aquifer. The water systems were built between 1958 and 1962.

The water treatment plant is regulated by the Maryland Public Service Commission, and Maryland Department of the Environment.

Green Ridge is located in Bel Air, MD and provides water service to 855 homes. The water system consists of twenty-three wells. The water is pumped from the wells through a manifold to a 3" pipe through the master meter. Chemicals are added, paced with the flow pacer unit and discharged into the distribution system. There is a 529,000-gallon standpipe. Green Ridge has an inter-connect with the Harford County water system to assist with our water demands on an as need basis. In previous negotiations with Harford County, they required a \$1,000,000 up front fee to receive water on a regular basis.

Lakeside Vista is located in Joppa, MD and provides water service to 82 homes. It is located approximately 15 –20 minutes from Green Ridge. Water is pumped from the wells to the treatment plant and pretreated with sodium hypochlorite for disinfection. Dense soda ash is also added for pH adjustment. After pretreatment, it is received into a 15,000 gallon in ground storage tank. A master meter measures the amount of water pumped to the customers.

% Residential	100%
% Commercial/Industrial	0%
Growth Rate (% annually)	No Growth Foreseen

Water System: Green Ridge

Asset Type	Quantity	Capacity	Comment/Description
Water Source	--	--	Ground Water- Aquifer
Wells	23	64 to 92 GPM	Submersible Well Pumps
Ground Storage Tank	1	529,000 gal	Fabricated Steel Standpipe
Water Mains	56,239lf	4" to 8"	PVC/Transite/Ductile Iron
Water Valves	191	2" to 8"	
Fire Hydrants	56		
Pressure Reducing Valves	0		No pressure reducing valves in system
Pressure Relief Valves	0		No pressure Relief Valves

Water System: Lakeside Vista

Asset Type	Quantity	Capacity	Comment/Description
Water Source	--	--	Ground Water- Aquifer
Wells	3	81 GPM	Submersible Well Pumps
Buried Hydro Tank	1	15,000 gal	Cleaned and coated August 2014
Water Mains	7,200lf	4" to 8"	PVC/Transite/Ductile Iron
Water Valves	17	2" to 8"	
Fire Hydrants	5		For Flushing Only
Pressure Reducing Valves	0		No pressure reducing valves in system
Pressure Relief Valves	1	70 PSI	Replaced in 2014

PENNSYLVANIA Systems

Utilities, Inc. of PA (Broad Run)

West Bradford Township, Pennsylvania

The Broad Run Sewer System is located in West Bradford Township, Chester County Pennsylvania and serves 1,310 wastewater customers. In 1992, Utilities, Inc. purchased the Broad Run sewer company from Toll Brothers Corporation.

Wastewater is collected and conveyed to an activated sludge treatment system with effluent disposal to the East Brandywine Creek. The majority of the utility infrastructure was built in the late 1970's and early 1980s.

The Broad Run Utilities Inc. sewer system (BRUI), located in North Western Bradford Township Pennsylvania, Chester County, serves 1,310 wastewater customers in the West Bradford Township. Wastewater is collected and conveyed to an extended aeration treatment plant with a capacity of .400 MGD. The majority of the utility infrastructure was built in the late 1970's and the early 1980's. The wastewater company is regulated by the Pennsylvania Public Utility Commission (PUC) and enforced by the Pennsylvania Department of Environmental Protection (PADEP).

Wastewater treatment is provided by an extended aeration plant with a capacity of .400 MGD. The collection system is PVC and ductile pipe. The following is a description of the sewer infrastructure on-site:

Asset Type	Quantity	Capacity	Comment/Description
Wastewater Treatment Plant	1	.400 MGD	Sewer influent is collected and flows through an influent screen, is then pumped into aeration, clarified, and then gravity flows through the final contact tank. The effluent is chlorinated and discharged into the East Branch of the Brandywine Creek.
Lift Stations	2	3 to 50 H.P.	2 Duplex
Gravity Mains	103,746 lf	4" to 15"	PVC And Ductile Iron
Sewer Force Mains	5,280 lf	4" to 15"	PVC And Ductile Iron
Manholes	505		

WASTEWATER SYSTEM

Collection System:

55% of the collection system is ductile Iron pipe and the remaining 45% is PVC pipe, most of which was installed in the late 1970's and into the 1980's. It is thought by staff to be in fair condition and expected to be about half way through its useful life. Collection system cleaning is currently done on an annual budget of 10% of the system.

Lift Stations:

The 2 lift stations range in age of 36 years. Lift station structures and control panels are regularly inspected and both were replaced within 5 years. The condition is excellent. Staff's evaluation of lift station condition is based on ongoing visual inspections, the presence of aggregate and assessment of concrete degradation, as well as full drawdowns to check for I&I and H2S deterioration. BRUI plans to implement a program of annual inspection for submersible pumps. Pumping equipment is replaced as needed according to performance and

structures are rehabilitated as required based on annual inspection usually under G/L capital expenditures.

Penn Estates Utilities, Inc. (PEUI) East Stroudsburg, Pennsylvania

The Penn Estates Utilities Inc. water and sewer system (PEUI), located in Northeast Pennsylvania, Monroe County, serves 1,627 water customers and 1,624 wastewater customers in the Penn Estates Community. Water is supplied by seven wells tapping into three aquifers with chlorination at the wellhead prior to entering the distribution system. Wastewater is collected and conveyed to an extended aeration treatment plant with a capacity of .560 MGD. The majority of the utility infrastructure was built in the late 1970's and the early 1980's. The water and wastewater companies are regulated by the Pennsylvania Public Utility Commission (PUC) and enforced by the Pennsylvania Department of Environmental Protection (PADEP). In 1997, Utilities, Inc. purchased the Penn Estates water & sewer companies from Cranberry Hill Corporation. Both the water and wastewater system, after purchase, required major upgrades including the addition of three new wells, two water storage tanks, and a completely new wastewater treatment plant.

The distribution system is PVC pipe. The following is a description of the water infrastructure on-site:

Asset Type	Quantity	Capacity	Comment/Description
Wells	7	Total of all wells. 350 gpm.	7 submersible pumps
Chlorination	5		At well head
Ground storage	2	Total for both 380,000 gallons.	TecTanks
Standpipes	4	60,000 gal 60,000 gal 70,000 gal 70,000 gal	There are two valve vaults with altitude valves to assist with filling the storage tanks at different elevations.
Water Mains	158,000 ft	6" & 8"	PVC
Water Valves	180	6" & 8"	11 new valves done for a project.
Fire Hydrants	204		All 204 are Muller
Backflow Prevention			Required at all residential services. HOA

			swimming pools are air gapped.
Pressure Reducing Valves	0		No pressure reducing valves in system
Pressure Relief Valves	0		

Wastewater treatment is provided by an extended aeration plant with a capacity of .560 MGD. The collection system is PVC pipe. The following is a description of the sewer infrastructure on-site:

Asset Type	Quantity	Capacity	Comment/Description
Wastewater Treatment Plant	1	.560 MGD	Sewer influent is collected and flows through an influent screen, is then pumped into aeration, clarified, and then gravity flows through four rapid sand filters. After filtration the effluent is chlorinated, dechlorinated, and discharged into an unnamed tributary of the Broadhead Creek.
Lift Stations	3	3 to 20 hp	3 Duplex
Gravity Mains	158,000 lf	8" to 15"	PVC
Sewer Force Mains	4000 lf	6"	PVC
Manholes	590		

Wells:

The seven wells range in age from 7 to 27 years. Well #1 (1974) was rehabilitated in 2005 and failed to produce any more water. It has been used as a test well since then and not connected to the system. Wells 2 through 7 have not been rehabilitated and are candidates for inspection. Inspections of the above ground equipment and pump performance are regularly completed on an annual basis. Draw-downs and pump efficiencies are monitored monthly. An estimated additional annual O&M expenditure of \$110k is required if annual pump removal, video inspection and cleaning is required (clarification of guideline requirements is being sought).

Storage Tanks:

The six storage tanks (1982 to 2007) are inspected inside and out every five years. The older tanks 1 & 2 interior & exterior was re-coated in 2005. Inspection in 2016 and exterior re-coating is budgeted for in the 5-year capital plan.

Distribution Mains:

The 158,000 LF distribution system was installed primarily in the late 1970's and the 1980's. PVC pipe was used throughout. Mains range in size from 6" to 8". Relatively few service interruptions have been experienced as a result of main failures.

Service Lines:

The service lines are K copper and in good shape.

Meters:

Existing manual-read meters are being replaced with AMR technology to improve accuracy, reduce meter read expense (O&M) and support improved conservation efforts. Wellhead meters are tested in place every 5 years and certified per commission requirements.

WASTEWATER SYSTEM

Collection System:

100% of the collection system is PVC pipe most of which was installed in the late 1970's and 1980's. It is about half way through its useful life. Collection system cleaning is currently done on an annual budget of 10% of the system.

Lift Stations:

The 3 lift stations range in age from 15 to 49 years. Lift station structures and control panels are regularly inspected. Staff's evaluation of lift station condition is based on ongoing visual inspections, the presence of aggregate and assessment of concrete degradation, as well as full drawdowns to check for I&I. PEUI plans to implement a program of annual inspection for submersible pumps. Pumping equipment is replaced as needed according to performance and structures are rehabilitated as required based on annual inspection usually under G/L capital expenditures.

Receiving Manholes

These are inspected along with the lift stations and are done at the same time to insure they remain in good condition.

Manholes:

The manholes are generally 30 to 40 years in age, consistent with the installation of the collection system. Inspection frequency by staff will be increased somewhat to ensure inspection of all manholes on a five-year rotation

Utilities, Inc. – Westgate (UIW)

Hanover Township, Pennsylvania

Utilities, Inc. - Westgate (UIW) is a water system located in Hanover Township, Northampton County, Pennsylvania. UIW purchases water from the city of Bethlehem to serve 900 customers.

Utilities, Inc. - Westgate (UIW), a purchased water system, is located in Hanover Township, Northampton County, Pennsylvania. The water distribution system is serviced by two interconnects with the city of Bethlehem. The system provides water to 900 customers, 98.1% residential and 1.9% commercial.

Treated water is sourced through two interconnects with the city of Bethlehem. The distribution system consists of 72,864 linear feet of water mains, ranging in size from 4-inches to 10-inches in diameter. It is a mixture of cast iron, ductile iron and galvanized piping (located in the older residential sections since 1943) and PVC (installed in the newer residential sections since 1978). The following is a description of the water infrastructure on-site:

Asset Type	Quantity	Capacity	Comment/Description
Structure	1	3,500 sq / ft	Office / Storage Building
Chlorination	0		Supplied by City supply.
Ground storage	0		
Standpipes	0		
Water Mains	72,864 Ft.	4", 6", 8", & 10"	Cast Iron, Ductile Iron, Galvanized Pipe, & PVC
Water Valves	68	4", 6", 8", & 10"	All valves exercised yearly and accessible. All valves allocated asset ID numbers.
Fire Hydrants	76		All hydrants flushed and serviced yearly. All hydrants allocated asset ID numbers.
Backflow Prevention	2 at interconnects		Required at all residential services.

Distribution Mains:

The 72,864 LF distribution system was installed primarily in the 1940's and the 1980's. The distribution system is a mixture of cast iron, ductile iron and galvanized piping and PVC pipe. Mains range in size from 4", 6", 8" to 10". A fair amount of service interruptions have been experienced where the 6" cast iron mains are installed. This area will be targeted by a DSIC plan if approved by PA PUC.

Service Lines:

The majority of the service lines are K copper and in good condition.

Meters:

Sensus touch read meters (AMR's) are already in place system wide. IPERL meters are being used to replace older Sensus touch read meters.

South Region Overview

Louisiana

All Louisiana operations are regulated.

Co # 356 – Louisiana Water Service, Inc. (LWS)

LWS is located in Louisiana and provides water and wastewater services to approximately 5,039 water customers and 4,832 wastewater customers. This system has 10 water plants and 10 sewer plants to provide these services.

Co # 357 – Utilities Inc. of Louisiana (UIL)

UIL is located in Louisiana and provides water and wastewater services to approximately 4,806 water customers and 4,473 wastewater. This system has 7 water plants and 7 sewer plants to provide these services.

Co # 358 – Density Utilities of LA (DULA)

DULA is located in Louisiana and provides wastewater service to approximately 2,348 wastewater customers. This system has a total of 49 sewer plants to provide this service.

Georgia

Co # 385 – Utilities Inc. of Georgia (UIG)

UIG is located in Georgia and provides water and wastewater services to approximately 4,866 water customers and 5,217 wastewater customers. This system has 2 water plants and 2 sewer plants to provide these services. UIG is non-regulated.

Co # 386 – Water Service Co. of Georgia (WSCG)

WSCG is located in Georgia and provides water and wastewater services to approximately 2,126 water customers and 257 wastewater customers. This system has 31 water plants and 2 sewer plants to provide these services. WSCG is non-regulated.

Staff DR 3.11a

Customer Counts

Staff DR 3.11b

ERC Counts

(see attached Excel file)

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

12. Refer to WSKY's response to Staffs Second Request, Item 27.d.

a. Confirm that the four employees listed are the only employees that have salaries and wages allocated to the City of Clinton Sewer expense that is listed in response to Item 27.a.

b. If no other wages are allocated, explain why no employee wages for customer service or regional management employees are allocated towards the operation of the city of Clinton Management Contract.

Response:

a. Confirmed, the four employees listed are the only employees that have salaries and wages allocated to the City of Clinton Sewer expense.

b. No other wages are allocated towards the operation of the city of Clinton Management Contract because the time spent by customer service or regional management employees is not material to their efforts. Further, any additional time which is invoiced to the City of Clinton would be directly reimbursed to the Company via management fees and would have \$0 impact on WSKY's operating income and would only burden the City of Clinton. .

Witness: Brian Halloran

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

13. Refer to the Excel spreadsheet WSKY provided in its response to Staffs First Request, Item 3, wp_b-Salary, Tab wp-b1 - Allocation of Staff, and the Excel spreadsheet WSKY provided in its response to Staff's Second Request, Item 9.a, Tab Paychecks 7.3.14-7.31.15. Given that the position titles for Wendell Mills and Michael Partin are water-wastewater operators, explain why WSKY is not allocating any of their salaries to the city of Clinton Management Contract.

Response: These employees spend 100 percent of their time in Middlesboro and do not work on any Clinton systems. They work exclusively on water operations despite their generic job title. Their job titles are universal within Utilities, Inc. and do not reflect their roles in Kentucky.

Witness: Brian Halloran

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

14. Refer to the Excel Spreadsheet WSKY provided in WSKY's response to Staff's First Request, Item 3, wp_b-Salary, Tab wp-b1 - Allocation of Staff. The employment of the following:

<u>Employee Name</u>	<u>Position Title</u>	<u>Termination Dates</u>
Bolt, Gregory C.	Field Technician III	September 17, 2015
Johnston, Joseph A.	Field Technician III	September 25, 2015

a. If the positions have been filled, identify the employee currently in the position, provide the date on which the employee(s) were hired, the current hourly wage rate and the actual benefit information. Separately identify the salary and employee benefit costs that are included in WSKY's pro forma operating expenses for Gregory Bolt and Joseph Johnston.

b. If either or both of the positions remain vacant, explain why.

c. State the current status of WSKY's efforts to fill the position and the anticipated hire date for each position.

d. Provide the entry-level hourly wage rate for the position Field Technician III.

Response:

a. Jacob Zumbrum; a full time employee, replaced Gregory Bolt, he was hired 11/30/2015 at \$14.13/hr. Colby Wilson; a full time employee, replaced Joseph Johnston, he was hired 11/23/2015 at \$15.00/hr. The new employee's pro-forma salary table is included as attachment "AG DR 2.14a - Replacement Emps". The pro forma wages for Bolt and Johnston were previously provided. Their pro forma salaries, benefits, and taxes are provided in the table below:

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Water Service Corporation of Kentucky													w/p-[b]
Calculation of Salary and Benefits													
Test Year June 30, 2015													
	A	B	C	D	E	F	G	H	I	J	K	L	M
			Total					6/30/2015		Company			Percentage
			Proforma	FICA	FUTA		Total	Health	401(k)	Contribution	6/30/2015	Total	Allocated
		Maintenance	Salary	7.65%	7,000 @ .8%	SUTA	Taxes	Insurance	at 3%	at 4%	Other	Benefits	WSCKY
Line													
1.		Bolt, Gregory C.	50,263	3,845	56	307	4,208	10,556	1,508	2,011	255	14,330	100.00%
3.		Johnston, Joseph A	34,303	2,624	56	307	2,987	10,556	1,029	1,372	255	13,212	100.00%

b. N/A

c. The positions have been filled by the employees stated above.

d. The entry-level hourly wage rate for the position of Field Technician III is \$16.06 per hour.

Witness: Brian Halloran

Staff DR 3.14a

Replacement Emps
(see attached Excel file)

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

15. Refer to WSKY's response to the Staffs Second Request, Item 9.a., Excel Spread Sheet Staff DR 2.9a-Test Year Salaries Detail.

a. Provide schedules for each employee listed on the following worksheet tabs listing the regular hours each employee worked for the calendar year 2013, 2014, 2015, and the test year:

- 1) Wp-b Salary;
- 2) Wp-b4 office salaries; and
- 3) WSC Salaries 2015.

b. Provide schedules for each employee listed on the following worksheet tabs listing the overtime hours each employee worked for the calendar year 2013, 2014, 2015, and the test year:

- 1) Wp-b Salary;
- 2) Wp-b4 office salaries; and
- 3) WSC Salaries 2015.

c. Provide schedules for each employee listed on the following worksheet tabs that lists the end of year wage rate for the calendar year 2013, 2014, 2015, and the test-year. Also, provide the percentage wage change between years.

- 1) Wp-b Salary;
- 2) Wp-b4 office salaries; and
- 3) WSC Salaries 2015.

d. For each employee listed in the schedules provided in WSKY's response to

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Item 3.a., explain in detail why he or she worked over 2,080 hours in the test year.

e. For each employee listed in the schedules provided in WSKY's response to Item 3.c., explain in detail any annual percentage change in an employee wage rate that is greater than 3 percent.

f. In addition to providing the schedules requested in WSKY's responses to Item 3 in PDF, provide the schedules in Excel Worksheet formats.

Response:

a. Please refer to the attached file labeled "*Staff DR 3.15 – Hours & Wage Rates Explanations*" for a listing of the regular hours each employee worked for the calendar year 2013, 2014, 2015 and the test year.

b. Please refer to the attached file labeled "*Staff DR 3.15 – Hours & Wage Rates Explanations*" for a listing of the overtime hours each employee worked for the calendar year 2013, 2014, 2015 and the test year.

c. Please refer to the attached file labeled "*Staff DR 3.15 – Hours & Wage Rates Explanations*" for a listing of the end of year wage rates for each employee for the calendar year 2013, 2014, 2015 and the test year.

d. The reasons that each employee that worked over 2,080 hours in the test year is due to increased activities related to maintaining or restoring services in order to provide customers with safe and reliable water or wastewater services which may demand employees work overtime, weekends and holidays. In addition, fluctuations in project

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RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

demand sometimes require an employee to work above the typical 40 hour work week in order to meet internal or external deadlines.

e. Please see the column labeled "Salary Change Explanations" in the file labeled "*Staff DR 3.15 – Hours & Wage Rates Explanations*".

f. Please refer to the attached file labeled "*Staff DR 3.15 – Hours & Wage Rates Explanations*".

Witness: Brian Halloran

Staff DR 3.15

Hours & Wage Rates Explanations

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

16. In its response to Staffs Second Request, Item 9.b.(2), WSKY states that "it is the Company's position that wage increases are reasonable and appropriate in order to retain a skilled and qualified workforce in any environment." Provide an analysis, study, or another form of documentation to support WSKY's position regarding employee wage increases.

Response: There are numerous publications, including the following, which discuss and demonstrate the importance of annual salary increases in retention of employees.

- Suzanne Dibble, *Keeping Your Valuable Employees* 96 (1999) ("Surveys show that salary ranks high on employees' lists of what keeps them with their employer.").
- Max Messmer, *Human Resources Kit for Dummies* 176 (3rd ed. 2012) ("Offering competitive compensation is key to attracting top talent to your organization. But after employees are onboard, salary levels don't stay competitive for long. As employees develop new skills and increase their knowledge of your business, they become increasingly valuable. Their value in the marketplace increases as well, meaning that they become attractive targets for other companies. To keep your best and brightest, you need to figure out fair (and affordable) ways to augment what you pay them. Most companies enhance their compensation through raises, bonuses, and incentives designed to give their best workers a reason to stay.").
- John McCarter and Ray Schreyer, *Recruit and Retain the Best: Key Solutions for the HR Professional* 83 (2000) ("The #1 reason cited by over 60% of individuals in a recent study as to reasons to accept or leave a job was compensation.").

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

- John McCarter and Ray Schreyer, *Recruit and Retain the Best: Key Solutions for the HR Professional* 97 (2000) (“As has been discussed elsewhere in this book, salary and wage compensation are great opportunities for motivation and building company commitment, but are too frequently the most painful source of employee discontent.”).
- Mercer, LLC, “As Workforce Hiring Increases, Organizations Stay Focused on Employee Engagement,” available at <http://www.mercer.com/press-releases/focused-on-engagement> (last visited Jan. 22, 2014) (“Although use of non-cash rewards continues to grow, top reward elements that organizations expect to have the biggest impact on employee engagement and retention in 2012 are base pay increases (reported by 50% of participating organizations), followed by vertical career progression (47%) and leadership development (46%).”).
- The Wall Street Journal, “Employee Retention — How to Retain Employees,” available at <http://guides.wsj.com/small-business/hiring-and-managing-employees/how-to-retain-employees/> (last visited Feb. 10, 2016) (“Also, provide meaningful annual raises. Nothing dashes employee enthusiasm more than a paltry raise. If you can afford it, give more to your top performers.”).
- Max Messmer, *2015 Robert Half Salary Guide* (2015) (“Salary may not be the only thing that determines your employees’ satisfaction on the job. But it’s certainly one of the most important factors when it comes to recruiting the best people and convincing them to stay on board.”).

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

It is also worth noting that there is also support demonstrating that employees “are more likely to underreport than to over report the importance of pay as a motivational factor in most situations.” In other words, “research suggests that pay is much more important in people’s actual choices and behaviors than it is in their self-reports of what motivates them.” Sara L. Rynes, et al., “The Importance of Pay in Employee Motivation: Discrepancies Between What People Say and What They Do,” *Human Resources Management* 381 (Winter 2004).

Scholarly literature also recognizes that there is a cost benefit to paying employees higher wages so as to avoid the inherent costs associated with employee turnover. See, e.g., Beverly Kaye and Sharon Jordan-Evans, *Love ‘Em or Lose ‘Em: Getting Good People to Stay* 134 (4th ed. 2008) (“You may think these dedicated, talented people who have been critical to your success are easily replaced. And yes, you might even find replacements at lower salaries. We hear this argument often, especially during periods of high unemployment when many good people are looking for work. Often, though, the managers who say this have simply not calculated the real costs of turnover. Most experts agree the replacing a key person on your staff will cost you two times that person’s annual compensation. ‘Platinum’ workers (highly skilled professionals) could easily cost you four to five times their annual salaries.”)

Witness: Steve Lubertozi

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

17. In its response to Staff's Second Request, Item 9.d., WSKY states that "ERC is the most appropriate and practical way to allocate customer service facilities wage costs because the Company operates in 15 states with 3 facilities that serve all utilities customer that span 3 time zones."

a. Provide a copy of any time-study analysis or and other empirical study performed by WSKY or Water Service Corporation showing that allocation of Water Service Corporation's salaries using the Equivalent Residential Connections ("ERC") formula results in a reasonable cost allocation to WSKY.

b. Explain in detail how the Water Service Corporation employees that do not track their time directly charge salaries to the appropriate subsidiary.

Response:

a. The Company has not performed an analysis to determine the cost-causative factors necessary to allocate WSC salaries to WSKY and has instead relied on a much less expensive and demanding method of salary allocation consistent with prior Kentucky Commission approval and consistent with the Company's Affiliate Interest Agreement.

b. Water Service Corporation employees that are not assigned to a specific operational system within Utilities, Inc. do not charge any of their time directly to the operational company, unless they do work on a capital project. These employees are used to support operations and their time is shared by all operational systems within Utilities, Inc. Please refer to the Affiliate Interest Agreement provided in response to "Staff DR 1.23" for an outline of the relationship between WSKY and Utilities, Inc. In the Affiliate Interest

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Agreement, the services provided by Water Service Corporation employees are detailed in items A through H.

Witness: Brian Halloran

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

18. In Case No. 2010-00476, the Commission found that WSKY had "offered no evidence to compare the 2011 wage increases with local, regional or state wage trends or to suggest that the 2011 increase was necessary or reasonable."

a. In light of the Commission's finding in Case No. 2010-00476, demonstrate and explain how the American Water Works Association 2014 Compensation Survey or the Mercer Custom Compensation Survey supports Water Service Corporation's compensation levels.

b. Provide an analysis that compares the Water Service Employee wage rates to the prevailing hourly wage rates in the Clinton region, the Middlesboro region, and the Commonwealth of Kentucky.

Response:

a. The American Water Works Association 2014 Compensation Survey and the Mercer Custom Compensation Survey suggests that Water Service Corporation's compensation levels are below the average compensation levels of similar companies.

b. Please refer to the attached file labeled "*Staff DR 3.18b – KY Wage Comparison*" for a comparison of the average hourly rates for WSKY employees and the average hourly rates for similar occupation titles per the United States Department of Labor's Bureau of Labor Statistics May 2014 Occupational Employment Statistics for West Nonmetropolitan Kentucky, East Nonmetropolitan Kentucky, and the Commonwealth of Kentucky. The comparison shows that WSKY employee's average hourly rate is in line with the average hourly rates of similar occupation titles. The average 2015 hourly rate for water operators in WSKY is equal to \$17.61. The average hourly wage rate for water/wastewater system

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WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

operators per the BLS May 2014 Occupational Employment Statistics was \$17.09 for the Commonwealth of KY, \$18.09 for West Kentucky, and \$14.48 for East Kentucky. The 2015 hourly wage rate for the regional manager of WSKY is equal to \$40.70. The average hourly wage rate for General and Operations Managers per the BLS May 2014 Occupational Employment Statistics was \$42.96 for the Commonwealth of KY, \$40.32 for West Kentucky, and \$39.02 for East Kentucky.

When WSKY's total salaries were compared to other water utilities operating in the Commonwealth of Kentucky in *Petitioner's Exhibit BNH-4*, the data showed that WSKY's total salaries and wages were comparable to those companies and fell slightly below the average cost per customer. This is consistent with the analysis performed by the PSC in WSKY's last rate case and recommended by the PSC in WSKY's last two rate cases. WSKY did provide a comparison of the reasonableness of its wages to state trends and the data shows that WSKY's salaries and wages are both necessary and reasonable.

Witness: Brian Halloran

Staff DR 3.18b

KY Wage Comparisons

(see attached Excel file)

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RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

19. Refer to WSKY's response to Staffs First Request, Item 3, wp_b_Salary, and tab labelled Wp-b Salary. Column L of this tab states that it included "Other" benefits that were paid on behalf of employees. Provide a detailed description of any benefits that are included in this column.

Response: The amounts included in Column L of the tab labeled "Wp-b Salary" located within the file labeled "*Staff DR 1.3 – wp b Salary*" are benefits related to Utilities, Inc. employee's Group Term Life Insurance, Long Term Disability, Employee Assistance Program (EAP), and Tuition costs. The total amounts in the accounts were divided by the full-time employee count for Utilities, Inc. as of 6/30/15, or 423 full-time employees, which calculates the total amount of each benefit per employee. This calculation can be found in "*Staff DR 1.3 – wp b Salary*" on the tab labeled "wp-b3 Calc of Health and Other".

Witness: Brian Halloran

CASE NO. 2015-00382

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RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

20. Refer to WSKY's response to Staff's Second Request, Item 23.

a. In its response to Item 23.c., WSKY states that it has expended \$160,580 in additional plant spending from 7/1/2015-11/30/2015. Provide the invoices and an itemized list to support this amount.

b. Additionally, in its response, WSKY states that it has expended \$114,286 in additional vehicle spending from 7/1/2015-11/30/2015. Provide the invoices and an itemized list to support this amount.

c. Given that the Commission has historically found that for the utilities under its jurisdiction, adjustments for post-test-period additions to plant in service should not be requested unless all revenues, expenses, rate base, and capital items have been updated to the same period as the plant additions, provide any additional justification that WSKY has to request recovery for post-test-period plant additions.

Response:

a. Please refer to the attached file labeled "*Staff DR 3.20a – Plant Invoices*" for copies of the invoices to support the \$160,580 in additional plant spending. For a breakdown of costs and a supporting general ledger, please refer to the attached file labeled "*Staff DR 3.20a – Plant Additions*". Please note that approximately \$65,604 of the total additional plant spending is related to capitalized time booked to the general ledger plant accounts during the period of 7/1/15-11/30/15. The remaining portion is supported by invoices.

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

b. Please refer to the attached file labeled “*Staff DR 3.20b – Vehicle Invoices*” for copies of the invoices to support the \$114,286 in additional spending. Below is a listing of the vehicles and the corresponding costs to support the \$114,286 in additional spending.

Response to Staff DR 3.20b

Asset #	Unit #	Year	Make	Model	Cost
1007128	1601	2016	Chevrolet	Colorado Ext Cab 4x4	\$ 31,955
1007129	1602	2016	Toyota	Tacoma Ext Cab	\$ 27,239
1007130	1603	2016	Toyota	Tacoma Ext Cab	\$ 27,239
1007132	1552	2015	Chevrolet	Silverado 1500 4WD	\$ 27,853
					<u>\$ 114,286</u>

c. The Commission has historically found known and measurable post-test-year adjustments meet its ratemaking criteria, consistent with the Commission Order from Case No. 2013-00237- page 7, where the Commission stated “post-test-year adjustment to reflect is April 1, 2013 wage increases does meet the ratemaking criteria of being known and measurable”. The Company considers these adjustments for post-test-period additions to plant in service known and measurable changes, which is evident in the invoices provided in support to the responses in “a” and “b” above. The Company has also accrued a depreciation reserve for these additions and has reflected the appropriate amount of depreciation expense on Schedule B, the Company does not believe there are any other costs which it has not taken into consideration which would be impacted as a result of these plant additions. At the time of filing, the Company was not aware the Commission has denied adjustments to historic test year operations on the basis that the Commission believes it

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

would be in violation of the “matching principle”. Please be advised, since the aforementioned investments in plant have already been recognized and corresponding expenses appropriately updated, the Company does not believe it is in violation of the Commissions interpretation of the “matching principle”. The Company has proposed other known and measurable changes outside of rate base in this proceeding, including, but not limited to, reductions in chemical expense for estimated future savings.

Considering the investments to plant were made by the Company prior to filing and considering the associated expenses were updated in its filing, the Company believes it should recover these known and measurable changes. The Company also believes that, due to the large cost, filing another rate case to recoup investments which have already been recognized is not in the best interest of its customers.

The Company would also like to disclose, that in its July 09, 2015 meeting with the Commission Staff and representatives from the Attorney General’s Office, it was suggested by both the Commission Staff and the Attorney General Representative that the Company not file this rate case utilizing a future test year as the Company would not be able to comply with the excessive amount of data requests from the Commission Staff and the would-be Attorney General expert(s). The Company believes it has proposed an alternative, which is to include known and measurable plant adjustments with matching expenses, in an effort to avoid filing another rate case in the near-term.

Witness: Justin Kersey

Staff DR 3.20a

Plant Invoices

HDSUPPLY®

WATERWORKS

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
 LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	E085478
INVOICE DATE	7/02/15
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114
Total Amount Due	\$2,199.13

RECEIVED

JUL 06 2015

520 1 MB 0.439 E0038X I0055 D1393279613 P2692359 0001:0002



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Shipped to:

102 PLANT RD
 MIDDLESBORO, KY

Batch _____
 Doc 695698

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
6/18/15	7/01/15	PO# 189096	BUS# 345102			OUR TRUCK	E085478
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
	Ord by: EMAIL STEVE VAUGHN						
3706B24265R3N	B24265R3N 5/8X3/4 ANG BMV FIPX SWIVEL NUT W/360 TURN NO LEAD BID SEQ# 10	20	20		35.3800	EA	707.60
3607H15008N	H15008N 3/4 CORP STOP CCXCTSC CC X CTS COMP, NO LEAD BID SEQ# 20	10	10		31.0400	EA	310.40
3610H15008N	H15008N 1 CORP STOP CCXCTSC CC X CTS COMP, NO LEAD BID SEQ# 30	5	5		47.0100	EA	235.05
390705H15403N	H15403N 3/4X1/2 110 COMP FITT-ING CTSXCTS NO LEAD BID SEQ# 40	20	20		23.7400	EA	474.80
3907H15403N	H15403N 3/4 CPLG 110 CTSXCTS NO LEAD BID SEQ# 50	20	20		17.3400	EA	346.80

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal						
NET 30	2,074.65						
Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$2,199.13
					124.48		

LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED

INVOICE: E085478



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

RECEIVED

PO# 189125

INVOICE DATE
7/09/2015

JUL 13 2015

INVOICE NUMBER
2251631-000-000

PAGE
1 OF 1

Original Invoice

Account No.
220148

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

NORTHBROOK IL 60062

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Batch _____
Doc 697280

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062

3000307
SOLD TO:

Customer Order No.				Terms of Sale			Ship Via		
PO# 189125 345				NET 30			OUR TRUCK 5594		
Freight		F.O.B.		Ship Date		Ship From			
PREPAID		SHIPPING POINT		7/09/2015		CPS-SOMERSET			
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	50	50		222040	18 AMETEK 194102 RECT PLST MTR BX L/LID (WHITE BOX)	35.00	EA	1750.00	
2	25	25		235190	LC225 CI LID W/CI RDR PO# 189125 BU# 345102	20.00	EA	500.00	
					STATE SALES TAX - ILLINOIS			140.63	
							Invoice Amount	2,390.63	

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
S-22-0710/22

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE

3072978

RECEIVED

JUL 10 2015

"Creating Comfort One Home at a Time"

JAMES SMITH HEATING AND COOLING

270-623-6190 Office
Ky. Lic. #M04047

Invoice

Date	Invoice #
7/9/2015	4737

<p>Bill To</p> <p>Water Service Corporation of Kentucky John Turner 100 East Jackson St Clinton Ky 42031</p> <p style="text-align: center; font-size: 24pt;">BU#345101</p>

Batch _____
Doc 697305

P.O. No.	Terms	Project
190895		

Item	Description	Qty	Amount
CHANGEOUT	<p>We are pleased to propose the following.</p> <p>We will remove the existing 1988 Rheem furnace that has cracks in heat exchanger, the Rheem coil and condenser.</p> <p>We will install a new Bryant 3 ton matched system.</p> <p>This would be a 310AAV042090 furnace, a CNPVP3617 indoor coil and a 114ANA036 outdoor unit.</p> <p>We will install new copper lines from inside unit to outdoor unit.</p> <p>New digital thermostat. We will install the furnace on 2 1/2 plastic furnace blocks to keep the furnace off the concrete floor. This will allow for a longer life of the unit's cabinet.</p> <p>We will also install a new drain line from furnace to the wall, around the wall and to the sump pump area. If the drain continues to drain into the floor and rely on gravity to get it to the sump pump, you will have mold, wet floors and possibly moisture issues with rest of building.</p> <p>We will provide a proper sized pad for the outside unit, we will install the outdoor unit on 3" pump-ups to keep grass from being collected on the outdoor coils. This will keep the unit cleaner, and allow for a more efficient operation.</p> <p>We will install a factory filter rack on side of new unit, this will keep filters from folding and being sucked into blower compartment.</p> <p>I also suggest the un-insulated ductwork in basement be insulated. This will cut down on thermal loss and reduce moisture that is dripping on the floor.</p> <p>We will also supply a transition piece for the furnace exhaust. We will also provide a disconnect at the furnace as required by code.</p> <p>Material, equipment, and labor for changeout.</p> <p>Furnace 310AAV042090 serial # 2015A23425 Coil CNPVP3617ALA serial # 1215X31493 114CNA036000BAAA serial # 2215E10965</p>		4,500.00
REPAIR	<p>Insulate the ductwork under the building that is in need of insulation. Also we will strap up and secure the supply runs to the front of the building that are sagging and in need of repair</p>		200.00

PLEASE REMIT PAYMENT TO : 159 St. Rt. 339 North FANCY FARM KY 42039
Finance Charges will accrue on invoices 45 days or older. 2% and/or \$25.00 late fee. Credit cards accepted. 3% service charge. All warranty work to be performed during normal hours, or overtime charges could apply.

Total	\$4,700.00
Payments/Credits	\$0.00
Balance Due	\$4,700.00

3004381

RECEIVED

JUL 08 2015

NEW REMITTANCE

Layne Christensen Company
PO Box 677801
Dallas TX 75267-7801

Layne Christensen

Remit to: P.O. Box 677801 Dallas, TX 75267-7801

Water Resource Division ~ Louisville, KY - Indianapolis, IN - Middletown, OH
PH: 262-246-4646 ~ FAX: 262-246-4784

INVOICE #: 89074442

Batch _____

Doc 694295

SOLD TO: Utilities, Inc. - Northbrook, IL
ATTN: Accounts Payable
2335 Sanders Road
Northbrook, IL 60062
Client Phone: 606-248-2306

INVOICE DATE: 07/02/2015

PO#: BU345102

LAYNE ORDER#: 34788

CLIENT#: 47852884

TERMS: NET 30 DAYS

QUANTITY	DESCRIPTION	PRICE	TOTAL
DATE COMPLETED: 06/05/2015			
1	LS Labor, equipment and material to repack pump C and check vibration in all 3 pumps.	\$2,328.00	\$2,328.00

Invoice Sub Total:	\$2,328.00
Tax:	\$0.00

Invoice Total: \$2,328.00

P.O.#190961

B.U.#345102

Layne Christensen Company will institute a late payment charge at a rate of 18% per annum (unless a lower rate is required under applicable law, in which case the lower rate shall apply) for all payments not made on or before the due date. It is the policy of Layne Christensen to preserve all lien and payment bond rights where available. All notifications are sent strictly for this purpose.

Thank you for your business
Layne Christensen is an Equal Opportunity Employer

**** Original ****

3007629

2015-07-10 09:32

RECEIVED 07/10/2015 10:30 16062480180
HAROLD 6063372344 >> 16062480180

WSCK

P 1/1

Federal Rd - 61116 0072

Gibbons Construction, Inc.

JOB INVOICE

P.O. BOX 6
CALVIN, KY 40813
PHONE: 606-337-2344 or 337-7450
Cell-269-0647

RECEIVED

JUL 13 2015

Batch _____

Invoice Number 561 Doc 697289

Date of Invoice 7-13-15

RE: Estimate Number _____

Day Work Contract Extra

Explanation _____

Job Name/Number _____

Job Location _____

Job Phone _____ Ext. _____

Start Date _____ End Date _____

Middlesboro WATER
Middlesboro Ky

#	LOCATION	QTY	MATERIAL			#	SQ. FT.	RATE	TOTAL AMOUNT
			ASPHALT	CONCRETE	OTHER				
1	19th ST.		/			1		75.00	
2	EAST-end 10th @ Daniels		/			2		75.00	
3	WATKINS Steel		/			3	18 H.	7.50 135.00	
4	Bellwood Rd.		/			4	21 H.	7.50 157.50	
5	2192 Camp. Ave.			✓		5	25 H.	7.50 187.50	
6						6			
7	25 E Mini-mall		/			7	42 H.	7.50 315.00	
8						8			
9						9			
10						10			
11						11			
12									
13						#	MISC. OTHER ITEMS	TOTAL AMOUNT	
14						1			
15						2			
16						3			
17						4			
18						5			
19									
20									
21									

PO # 190970
B.U. # 345107

Your Order # 190970 Your Order Date 7-13-15

Work Ordered By James Leamed

Terms _____

TOTAL MATERIALS	
TOTAL ABOVE	945.00
TAX _____ %	
TOTAL DUE	945.00

3010378

RECEIVED

JUL 14 2015

Batch _____
Doc 692274

INVOICE # 1645 Date 7-7-14				CONTRACT NO.	
816005-3 Water Improvements Water Service Corp. Of Kentucky Clinton, KY				PARTIAL PAYMENT INVOICE NO.: 1-FINAL	
				Page 1 OF 2	
Owner: Attn: Toni Federico Utilities, Inc. 2335 Sanders Road Northbrook, IL 60062-6196			CONTRACTOR: Revell Construction Co., Inc. 1111 Section Line Road Union City, TN 38261		PERIOD OF ESTIMATE: 6/1/2014 to 8/30/14
CONTRACT CHANGE ORDER SUMMARY			ESTIMATE		
No.	Approval Date	Amount			
		Additions	Deductions		
1				1. Original Contract.....	27,835.00
2				2. Change Orders.....	0.00
3				3. Revised Contract (1 + 2).....	27,835.00
4				4. Work Completed.....	20,421.00
				5. Stored Materials.....	0.00
				6. Subtotal (4 + 5).....	20,421.00
				7. Retainage.....0%.....	0.00
TOTALS		0.00	0.00	8. Previous Payments.....	0.00
NET CHANGE		0.00		9. Amount Due.....	\$20,421.00
CONTRACT TIME					
Original (days) _____		Yes		Starting date _____	
Revised _____		On Schedule		Projected Completion _____	
Remaining _____		No			
CONTRACTOR'S CERTIFICATION:			ARCHITECT OR ENGINEER'S CERTIFICATION		
The undersigned Contractor certifies that to the best of their knowledge, information and belief the work covered by this payment estimate has been completed in accordance with the contract documents, that all amounts have been paid by the contractor for work for which previous payment estimates were issued and payments received from the owner, and that current payment shown herein is now due.			The undersigned certifies that the work has been carefully inspected and to the best of their knowledge and belief, the quantities shown in this estimate are correct and the work has been performed in accordance with the contract documents.		
Contractor: <u>Revell Construction Co., Inc.</u>			Architect or Engineer _____		
By <u><i>John Revell</i></u>			By _____		
Date <u>7/7/15</u>			Date _____		
APPROVED BY OWNER:			ACCEPTED BY AGENCY:		
Owner <u><i>WSCK</i></u>			The review and acceptance of this estimate does not attest to the correctness of the quantities shown or that the work has been performed in accordance with the contract documents.		
By <u><i>James Leonard</i></u>			By _____		
Date <u>7-14-15</u>			Title _____		
			Date _____		

P.O.# 191114
B.U.# 345101

Item	Description	UNIT PRICE BREAKDOWN							
		CONTRACT				Estimate # 1		Total to Date	
		Qty.	Unit	Unit Price	Amount	Qty	Amount	Qty	Amount
Jackson Street									
	3/4" CTS Tubing with Tracer Wire	600	LF	9.00	5,400.00	130	1,170.00	130	1,170.00
	Connection to Existing Service Line	14	LF	315.00	4,410.00	8	2,520.00	8	2,520.00
	Connection to Existing Meters	14	EA	225.00	3,150.00	8	1,800.00	8	1,800.00
	Service Bore	8	EA	450.00	3,600.00	3	1,350.00	3	1,350.00
	Remove Asphalt and Concrete for Services and Main Kill, Backfill street	15	EA	225.00	3,375.00	8	1,800.00	8	1,800.00
	Kill Existing 2" Line in Street	1	LS	875.00	875.00	1	875.00	1	875.00
	Seed and Straw	1	LS	800.00	800.00	1	800.00	1	800.00
	Rock for Street Backfill	50	TN	30.00	1,500.00	49.7	1,491.00	50	1,491.00
					23,110.00		11,806.00		11,806.00
521 Mayfield Road									
	Service Bore	1	EA	\$450.00	450.00	1	450.00	1	450.00
	3/4" CTS Tubing	45	LF	\$9.00	405.00	45	405.00	45	405.00
	Connection to Existing Water Line	1	EA	\$315.00	315.00	1	315.00	1	315.00
	Connection to Existing Meters	1	EA	\$225.00	225.00	1	225.00	1	225.00
	Seed and Straw	1	LS	\$50.00	50.00	1	50.00	1	50.00
					1,445.00		1,445.00		1,445.00
Elm Street (Existing Service Off Jackson)									
	3/4" CTS Tubing	270	LF	\$9.00	2,430.00	230	2,070.00	230	2,070.00
	Connection to Existing Water Line	1	EA	\$315.00	315.00	1	315.00	1	315.00
	Connection to Existing Meter	2	EA	\$225.00	450.00	2	450.00	2	450.00
	Seed and Straw	1	LS	\$85.00	85.00	1	85.00	1	85.00
					3,280.00		2,920.00		2,920.00
	Total Contract				27,835.00		16,171.00		16,171.00
Extra Items									
	Concrete Patch for Mayfield Road	1	LS	750.00		1	750.00	1	750.00
	Service/Kills Investigation	1	LS	3,500.00		1	3,500.00	1	3,500.00
							4,250.00		4,250.00
	Total Invoice						20,421.00		20,421.00

PO.# 191114
 BU# 345101

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE

INVOICE	
6584492	
Invoice Date	Page
7/31/2015 11:09:39	1 of 1
ORDER NUMBER	
1605836	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch _____
Doc 706280

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
191828 BU345101	Net 30	8/30/2015	8/30/2015	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
7/21/2015 15:12:49	3611716	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: SALESMEN

Tracking #:

6	6	0		C44-34-NL 3/4X1 FORD BRASS COUPLING PJCTS X PJCTS **NO LEAD**	EA	18.7200	112.32
6	6	0		244-008803 3/4CTSX3 FULL CIRCLE REDI-CLAMPS	EA	24.6700	148.02
1	1	0		FBC-663 6 BELL JOINT CLAMP FOR PVC	EA	117.1600	117.16

Total Lines: 3

SUB-TOTAL: 377.50
KENTUCKY STATE TAX: 22.65
AMOUNT DUE: 400.15

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

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AUG - 4 2015

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

*** REPRINT ***

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED

AUG 13 2015

INVOICE

INVOICE	
6585363	
Invoice Date	Page
8/10/2015 14:27:57	1 of 1
ORDER NUMBER	
1605836	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
***NO TRUCK CHARGE**
CLINTON, KY 42031

Batch _____

Doc 706281

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
191828 BU345101	Net 30	9/9/2015	9/9/2015	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
7/21/2015 15:12:49	3613269	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: SALESMEN

Tracking #:

6	6	0		C3L 1 1/2 LID ONLY FOR A FORD C32	EA	29.5000	177.00
4	4	0		C31-23-NL 3/4 FORD METER COUPLING MC X FIPT **NO LEAD**	EA	13.3600	53.44

Total Lines: 2

SUB-TOTAL: 230.44
KENTUCKY STATE TAX: 13.83
AMOUNT DUE: 244.27

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All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

3008346



INVOICE

WATERWORKS

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

RECEIVED

AUG 31 2015

BRANCH ADDRESS
 LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	E420278
INVOICE DATE	8/27/15
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due	\$4,609.83
------------------	-------------------

Remit To:
 HD SUPPLY WATERWORKS, LTD.
 PO BOX 277838
 ATLANTA, GA 30384 7838

769 1 MB 0.439 E0276X I0422 D1449861569 P2794892 0001:0001



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Shipped to:

CUSTOMER PICK-UP -

Batch _____

Doc 409437

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
8/26/15	8/25/15	SEE BELOW	STOCK			WILL CALL	E420278
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
	CUSTOMER PO#- 193037 BU# 345102						
4606B24047N	B2404N 5/8X7 MTR SETTER NO LEAD	25	25		97.7600	EA	2,444.00
3907H14227N	H14227N 5/8X3/4X3/4 MPXCTS CON-NECTOR NO LEAD	50	50		14.2100	EA	710.50
3907H15425N	H15425N 3/4 ADPT CFXMIP NOLEAD	10	10		12.6100	EA	126.10
3907H15428251N	H15428-251N 3/4"X1/2" STRT CPL GCTS X MIP NO LEAD	10	10		13.3800	EA	133.80
0807S060K	3/4X60' (K) SOFT COPPER TUBING	120	120		3.4000	FT	408.00
391007H15381N	H15381N 1X1X3/4 COMP TEE CTS NO LEAD	5	5		47.4100	EA	237.05
59VR010I	1 VALVE BOX RISER IMP	5	5		6.0300	EA	30.15
59VR020I	2 VALVE BOX RISER IMP	5	5		8.4400	EA	42.20
59VR030I	3 VALVE BOX RISER IMP	5	5		12.0600	EA	60.30
59VR040I	4 VALVE BOX RISER IMP	5	5		13.2700	EA	66.35
59VR060I	6 VALVE BOX RISER IMP	5	5		18.0900	EA	90.45

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	4,348.90

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$4,609.83
					260.93		

LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED

INVOICE:	E420278
----------	---------

USABlueBook®

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INVOICE

INVOICE NO.	PAGE NO.
714510	1 of 1
CUSTOMER NO.	DATE
911268	08/04/15

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
539 1 MB 0.439 E0060X I0070 D1427000237 P2755681 0001:0002

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Batch _____
Doc 705672

Ordered by: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
193087	08/04/15	CCA	1%/10 NET 30	KY	28744A	44	FXD/PPD	UPS
USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
88297	6" Altitude/Pressure Gauge 0-30PSI 0-70 FT H2O BUSINESS UNIT 345102	2	2	0	EA	143.05	EA	286.10

RECEIVED
AUG 10 2015

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
286.10	0.00	0.00	17.17		303.27

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

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****IMPORTANT****
Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
714510	911268	08/04/15	303.27

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

USABlueBook
P.O. Box 9004
Gurnee, IL 60031-9004

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INVOICE

INVOICE NO.	PAGE NO.
715205	1 of 1
CUSTOMER NO.	DATE
911268	08/04/15

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: **SLK TVS QDB**

BILL TO: 911268
539 1 MB 0.439 E0060 10071 D1427001195 P2755681 0002:0002

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Batch _____
Doc 705674

Ordered by: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
193087	08/04/15	CCA	1%/10 NET 30	KY	528744	01	FXD/PPD	UPS
USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
88297	6" Altitude/Pressure Gauge 0-30PSI 0-70 FT H2O	3	3	0	EA	143.05	EA	429.15
88184	Miniature Ball Valve 1/4" FxM Low-Lead	10	10	0	EA	21.55	EA	215.50
38183	Lead Free Brass 90 Street Elbow 1/4 IN NPT	10	10	0	EA	4.31	EA	43.10
88296	6" Altitude/Pressure Gauge 0-15PSI 0-35 FT H2O	3	3	0	EA	143.05	EA	429.15
88300	6" Altitude/Pressure Gauge 0-160PSI 0-370 FT H2O	2	2	0	EA	143.05	EA	286.10
10733	Adjustable Pressure Snubbers 1/4" NPT Male/Female 316 SS BUSINESS UNIT 345102	10	10	0	EA	25.15	EA	251.50

RECEIVED
AUG 10 2015

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
1,654.50	0.00	0.00	101.87	43.27	1,799.64

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

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******IMPORTANT******

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
715205	911268	08/04/15	1,799.64

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

USA BlueBook
P.O. Box 9004
Gurnee, IL 60031-9004

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AUG 24 2015

Layne Christensen

Remit to: P.O. Box 677801 Dallas, TX 75267-7801
 Water Resource Division ~ Louisville, KY - Indianapolis, IN - Middletown, OH
 PH: 262-246-4646 ~ FAX: 262-246-4784

INVOICE #: 89075603

Batch _____
 Doc 707988

SOLD TO: Utilities, Inc. - Northbrook, IL
 ATTN: Accounts Payable
 2335 Sanders Road
 Northbrook, IL 60062
 Client Phone: 606-248--2306

INVOICE DATE: 08/11/2015
PO#: BU345102
LAYNE ORDER#: 37087
CLIENT#: 47852884

TERMS: NET 30 DAYS

QUANTITY	DESCRIPTION	PRICE	TOTAL
DATE COMPLETED: 08/06/2015			
Labor, equipment and material to pull Raw Water Pump #1, repair, reinstall and return to service.			
1	LS Field labor and equipment to pull pump as per quote dated July 13, 2015.	\$2,514.00	\$2,514.00
1	LS Field labor and equipment to reinstall pump as per quote dated July 13, 2015.	\$2,514.00	\$2,514.00
1	LS Fuel	\$300.00	\$300.00
1	LS Pump repairs as per quote dated July 29, 2015.	\$10,260.00	\$10,260.00
1	LS Machine ACME rod to fit broken nut and new ACME handwheel nut.	\$1,241.00	\$1,241.00

Invoice Sub Total: \$16,829.00
Tax: \$0.00

Invoice Total: \$16,829.00

Layne Christensen Company will institute a late payment charge at a rate of 18% per annum (unless a lower rate is required under applicable law, in which case the lower rate shall apply) for all payments not made on or before the due date. It is the policy of Layne Christensen to preserve all lien and payment bond rights where available. All notifications are sent strictly for this purpose.

Thank you for your business
 Layne Christensen is an Equal Opportunity Employer
**** Remittance Copy ****

INVOICE # 1667 Date 8-31-15	CONTRACT NO.
915005-3 Water Improvements	PARTIAL PAYMENT INVOICE NO.: 2-FINAL
Water Service Corp. Of Kentucky Clinton, KY	Page 1 OF 2

Owner: Attn: Toni Federico Utilities, Inc. 2335 Sanders Road Northbrook, IL 60062-6196	CONTRACTOR: Revell Construction Co., Inc. 1111 Section Line Road Union City, TN 38261	PERIOD OF ESTIMATE: 7/1/2015 to 8/31/15
--	---	---

CONTRACT CHANGE ORDER SUMMARY				ESTIMATE	
No.	Approval Date	Amount			
		Additions	Deductions		
1				1. Original Contract.....	27,835.00
2				2. Change Orders.....	0.00
3				3. Revised Contract (1 + 2).....	27,835.00
4				4. Work Completed.....	25,921.00
				5. Stored Materials.....	0.00
				6. Subtotal (4 + 5).....	25,921.00
				7. Retainage.....0%.....	0.00
				8. Previous Payments.....	20,421.00
				9. Amount Due.....	\$5,500.00
TOTALS		0.00	0.00		
NET CHANGE		0.00			

CONTRACT TIME			
Original (days) _____	Yes		Starting date _____
Revised _____	On Schedule		Projected Completion _____
Remaining _____	No		

CONTRACTOR'S CERTIFICATION: The undersigned Contractor certifies that to the best of their knowledge, information and belief the work covered by this payment estimate has been completed in accordance with the contract documents, that all amounts have been paid by the contractor for work for which previous payment estimates were issued and payments received from the owner, and that current payment shown herein is now due.	ARCHITECT OR ENGINEER'S CERTIFICATION The undersigned certifies that the work has been carefully inspected and to the best of their knowledge and belief, the quantities shown in this estimate are correct and the work has been performed in accordance with the contract documents.
Contractor: <u>Revell Construction Co., Inc.</u> By <u><i>Jason Revell</i></u> Date <u>8/31/15</u>	Architect or Engineer _____ By _____ Date _____
APPROVED BY OWNER: Owner _____ By _____ Date _____	ACCEPTED BY AGENCY: The review and acceptance of this estimate does not attest to the correctness of the quantities shown or that the work has been performed in accordance with the contract documents. By _____ Title _____ Date _____

P.O.#195333
B.U.#345101

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INVOICE

Remit To:
 P.O. Box 9004
 Gurnee, IL 60031-9004
 TEL: (847) 689-3000
 FAX: (847) 689-3001
 TOLL FREE: 1-800-493-9876
 F.E.I.N.: 52-2418852

SEP 14 2015

INVOICE NO.	PAGE NO.
744293	1 of 1
CUSTOMER NO.	DATE
911268	09/04/15

View online at: <http://usabluebook.billtrust.com>
 Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
 620 1 MB 0.439 E0118 I0147 D1461609598 P2822042 0002:0004

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
 102 WATER PLANT RD
 MIDDLESBORO KY 40965
 USA

Batch _____
 Doc 712902

Ordered by: 0004 GARY MILLS

Attention: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA		
195759	09/04/15	LJH	1%/10 NET 30	KY	548483	01	FXD/PPD	UPS		
USA STOCK NO.	DESCRIPTION			ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
61111	Motor 1/20hp -115V-wired INSTOCK AT TIME OF QUOTE			1	1	0	EA	242.20	EA	242.20

THANK YOU for your business!
 1.5% MONTHLY FINANCE CHARGE
 ON AMOUNTS 30 DAYS PAST DUE
 Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
242.20	0.00	0.00	15.66	18.78	276.64

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

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****IMPORTANT****

Please include this customer #
 on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
744293	911268	09/04/15	276.64

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

3006618



9030 MONROE ROAD
HOUSTON, TEXAS 77061-5229
(713) 844-1300
(713) 844-1309 FAX

INVOICE DATE	INVOICE NUMBER	PAGE
09/11/15	112722	1 of 1

Customer	Your Authorization / P.O.#	Date Shipped	Terms
238001	196070	09/11/15	NET 30

BILL TO:

674443

UTILITIES INC
2335 SANDERS RD
NORTHBROOK IL 60062
ATTN: ACCOUNTS PAYABLE

RECEIVED

SEP 18 2015

SHIP TO:

WATER SERVICE CORP. OF KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
ATTN MIKE PARTIN

Heath Order No	Ship Via	Shipping Document
510066	FSC UPS GROUND DELIVERY	S/T#131086

Line No	Stock Number and Description	Qty Ord	Qty Shipped	Qty B.O.	Unit Price	Total Amount
	HEATH INSTRUMENT REPAIR SERVICES					
	196070 186056 MIKE PARTIN 606 499 9149 Shipper Tracking: 1Z7263660371022268					
	S-LOCK LOCATOR COMPLETE S/N 6000745001					
1	IRLABOR INSTRUMENT REPAIR LABOR TRANSMITTER:TEST AND CALIBRATE RECEIVER:REPLACED AMP BOARD TESTED AND CALIBRATED TECH:TOM ENG:V.A		3 EA		125.00	375.00
2	100577-0 PCB,ASY,SL AMP SMT		1 EA		415.00	415.00

Batch

Doc

714637

UNPAID BALANCES SUBJECT TO 1.5% PER MONTH SERVICE CHARGE

REMIT TO:
HEATH CONSULTANTS INCORPORATED
9030 MONROE ROAD
HOUSTON, TX 77061-5229

FEDERAL E.I. #04-2144731

SUBTOTAL	790.00
TAX	27.65
SHIPPING/INS	45.83
AMOUNT DUE	863.48

Please reference Invoice Number 112722 on your payment.

3009296

RECEIVED

SEP 21 2015

INVOICE



SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE	
6590467	
Invoice Date	Page
9/18/2015 10:46:59	1 of 1
ORDER NUMBER	
1612714	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch

Doc 714602

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
BU 345101	Net 30	10/18/2015	10/18/2015	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
9/11/2015 09:31:36	3618672	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			
6	5	0	C	C32-I RING & COVER FOR 18 TILE	EA	42.8500	214.25

Carrier: OUR TRUCK

Tracking #: T.HUDGINS 9-16-15

Total Lines: 1

Total Freight In: 0.00

Total Freight Out: 30.00

SUB-TOTAL: 214.25

TOTAL FREIGHT: 30.00

KENTUCKY STATE TAX: 14.66

AMOUNT DUE: 258.91

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re -stocking charge. All custom or non-stock items are non-returnable.

3068613



Chemtrac, Inc.
6991 Peachtree Industrial Blvd
Bldg 600
Norcross, GA 30092
USA

Voice: 770-449-6233 Fax: 770-447-0889

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OCT 01 2015

Page: 1

Invoice Number:

24640

Order Number:

Invoice Date:

Sep 25, 2015

Invoice

Bill To: WATER SERVICES CORP OF KY
ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship to: WATER SERVICES CORP OF KY
ATTN: GARY MILLS
102 WATER PLANT ROAD
MIDDLEBORO, KY 40965

Batch

Doc

717978

Customer ID	Customer PO	Payment Terms
WATERSER	197424 197442	Net 30 Days
Sales Rep ID	Shipping Method	Ship Date
28	UPS	9/25/15

Quantity	Item	Description	Unit Price	Extension
1.00	HA300	HYDROACT 300	3,650.00	3,650.00
1.00		S/N:HA3P15I044		
1.00	17915	FREE CHLORINE PROBE 0-5mg/l		
1.00		S/N:HA315I117P		
1.00	OP	OPERATIONS MANUAL		

Subtotal	3,650.00
Freight	50.00
Sales Tax	
Total Invoice Amount	3,700.00
TOTAL	3,700.00

ORIGINAL INVOICE

INVOICE



4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414) 371-5952

Mail all remittances to:
 Box 88223
 Milwaukee, WI 53288-0223

INVOICE NUMBER	DATE
1062912	10/07/15
D-U-N-S 00-606-9710	
NET 30 DAYS	

FED I.D. #39-0143280
 GST# 123746141

RECEIVED
 OCT 13 2015

SOLD TO CUSTOMER: 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK, IL 60662-6108

SHIP TO CUSTOMER: 404
 WATER SERVICE CORP OF KY
 501 N 19 ST
 MIDDLESBORO, KY 40965

Batch _____
 Doc 720488

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
197704 BU 345102	QUOTED FREIGHT	Dayton Freight
ORDER DATE	INCO TERMS	TRACKING NUMBER
10/01/15	FCA FACTORY	26590061
PROPOSAL #	FINAL DESTINATION	WAREHOUSE / ORDER#
	UNITED STATES	MM 199474

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
1	UM1-0012-6182 B25-LL -AC -NN Ordered: 100.000 Shipped: 100.000 7128 JIM BALLANTINE METER MODEL 25 LL (NSF 61-G MTR) METER TYPE MODEL 25 REGISTRATION LOCAL REGISTER SIZE 5/8" (1/2 X 7 1/2) PRODUCTION METHOD STANDARD WATER APPLICATION POTABLE BOTTOM MATERIAL CAST IRON BOTTOM BOLT MATERIAL 430 STAINLESS STEEL BOLTS SEAL BOLT QUANTITY 1 (ONE) THRUST ROLLER PLASTIC TESTING BADGER STANDARD (TS-135) PACKAGING SIX PACK MOUNTING POSITION SIDEWALK READ UNIT OF MEASURE GALLON REGISTRATION FACE STANDARD REGISTER LID / SHROUD PLASTIC SHROUD / PLASTIC LID (BLACK) REGISTER LID S/N OUTSIDE BMI 8 DIGIT S/N BARCODED METER S/N PRIMARY OUTLET BMI 8 DIGIT S/N SEAL SCREW SLOTTED SEAL SCREW PALLETIZING STANDARD	45.1500	4515.00
	Sub Total		4515.00
	Freight		101.88

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>
 Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

ORIGINAL INVOICE

INVOICE



Mail all remittances to:
 Box 88223
 Milwaukee, WI 53288-0223

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414) 371-5952

INVOICE NUMBER	DATE
1062912	10/07/15
D-U-N-S 00-606-9710	
NET 30 DAYS	

FED I.D. #39-0143280
 GST# 123746141

SOLD TO CUSTOMER: 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK, IL 60662-6108

SHIP TO CUSTOMER: 404
 WATER SERVICE CORP OF KY
 501 N 19 ST
 MIDDLESBORO, KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
197704 BU 345102	QUOTED FREIGHT	Dayton Freight
ORDER DATE	INCO TERMS	TRACKING NUMBER
10/01/15	FCA FACTORY	26590061
PROPOSAL #	FINAL DESTINATION	WAREHOUSE / ORDER#
	UNITED STATES	MM 199474

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
	Total Tax		277.01
	Total		4893.89

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>
 Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

3042115

RECEIVED

OCT 08 2015

INVOICE

KY ARMATURE & MOTOR WORKS INC

P.O. BOX 757
MIDDLESBORO, KY 40965

Invoice Number: 5180
Invoice Date: 10/7/15
Page: 1

Voice: (606) 248-2930
Fax: (606) 248-2931

Batch _____
Doc 719850

Bill To:
Water Service Corporation of Kentucky
ATTENTION: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Customer ID: UTILITIES, INC

Customer PO	Payment Terms	Sales Rep ID	Due Date
198185	Net 30 Days		11/6/15

Description	Amount
1-DAYTON 1/8-1625-48Y # 22YH31	315.00
LABOR	50.00
BU # 345102	

Subtotal	365.00
Sales Tax	18.90
Total Invoice Amount	383.90
Payment/Credit Applied	
TOTAL	383.90

Check/Credit Memo No:

USABlueBook®

Get the Best Treatment™

Remit To:
 P.O. Box 9004
 Gurnee, IL 60031-9004
 TEL: (847) 689-3000
 FAX: (847) 689-3001
 TOLL FREE: 1-800-493-9876
 F.E.I.N.: 52-2418852

RECEIVED

OCT 19 2015

INVOICE

INVOICE NO.	PAGE NO.
777585	1 of 1
CUSTOMER NO.	DATE
911268	10/15/15

View online at: <http://usabluebook.billtrust.com>
 Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
 168 1 SP 0.485 E0168X I0320 D1504120687 P2892035 0001:0001

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
 102 WATER PLANT RD
 MIDDLESBORO KY 40965
 USA

Batch _____
 Doc: 722059

Ordered by: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
198278	10/15/15	CCA	1%/10 NET 30	KY	567106	01	FXD/PPD	UPS
USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
73130	60 GPD; 150 PSI; C711-460SI LMI Series C7 Feed Pump EXPECTED LEAD TIME 2-3 WEEKS	1	1	0	EA	1,386.95	EA	1,386.95

THANK YOU for your business!
 1.5% MONTHLY FINANCE CHARGE
 ON AMOUNTS 30 DAYS PAST DUE
 Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
1,386.95	0.00	0.00	84.42	20.00	1,491.37

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook®

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
 on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
777585	911268	10/15/15	1,491.37

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

USABlueBook
 P.O. Box 9004
 Gurnee, IL 60031-9004

3007961

Service Centers

- Atlanta, GA 800-586-4966
- Blountville, TN 800-972-7519
- Charlotte, NC 866-766-4966
- Louisville, KY 800-596-4966
- Nashville, TN 800-766-4966



RECEIVED
NOV 05 2015

INVOICE
SLS000250188

5038 Thoroughbred Lane
Brentwood, Tennessee 37027-4225
Corporate Headquarters: 615-309-5823

Due Upon Receipt

CUSTOMER NO: 1500390

SERVICE CALL ID: 15-26522

INVOICE DATE: 30-October-2015

BILLING ADDRESS:

TYPE OF PROBLEM: INSTALL & PROGRAM CONTROLLER

P.O. Number: 198562

Water Service Corp. of Ky
Attention: James Leonard
Accounts Payable
2335 Sanders Road
Northbrook, IL 60062

SERVICE TYPE: Time & Material

Contract No:

SERVICE AREA: BLOUNTVILLE

LOCATION NAME: Water Service Corp of KY

LOCATION ADDRESS: 102 Water Plant Road Middlesboro, KY 40965

Description of Work Performed:

SERVICE CHARGE PER QUOTE TO INSTALL AND PROGRAM CONTROLLER ALONGSIDE A CUMMINS TECHNICIAN ON YOUR STANDBY GENERATOR. CUMMINS MODEL #DGFS SERIAL #I050833783.

THANK YOU.
WE APPRECIATE YOUR BUSINESS.

Batch _____
Doc 728185

We greatly appreciate your business and want you to be completely satisfied. If, for any reason, Nixon Power Services has not met your expectations, please contact us toll-free at (888) 826-4966 ext. 2245 or e-mail your comments to service@nixonpower.com.
Your total satisfaction is very important to us.

For questions regarding this invoice please call us toll-free at (888) 826-4966 ext. 2287 or e-mail credit@nixonpower.com.

Thank you in advance for your prompt payment.

Visit us online at www.nixonpower.com

Labor: \$	665.00
Materials: \$	7,087.08
Mileage: \$	410.00
Subtotal: \$	8,162.08
Tax: \$	425.22
Pay This Amount: \$	8,587.30

REMIT TO:
Nixon Power Services Company
P.O. Box 934345
Atlanta, GA 31193-4345





October 9, 2015

EMERGENCY GENERATOR REPAIR QUOTE

Water Service of KY
102 Water Plant Road
Middlesboro, KY 40965
ATTN: Gary Mills
Email: wgmills@uiwater.com

Description: Install/Program Controller
Location: Raw Intake Site

Quote # 151009JH-3

We are pleased to offer this proposal for providing professional and expert service of your emergency power system. Below is a breakdown of the pricing for your needed repairs.

SERVICE REPAIRS

Travel, labor and parts to install and program the controller alongside a Cummins technician on your Cummins standby emergency power generator.

Price \$8,162.08
plus any applicable taxes

Includes: Travel, labor and parts
Excludes: Initial service call and any existing or unforeseen conditions.

These prices are net any taxes and based on work performed during regular business hours. This offer is good for 60 days.

Thank you for the opportunity to offer our services to you. Our service department is on call 24-hours a day to respond to your needs. Should you have any questions or need additional information, please call us at 800-972-7519 or 423-279-0357.

Nixon Power Services Company is a service-oriented company and we look forward to providing quality service to you and your equipment.

Nixon Power Services Co
Akeshia Lambert
Supervisor, BVL Aftermarket
1612 Highway 75, Blountville, TN 37617
800-972-7519 * 423-279-0357 * Fax 423-279-0846

Accepted Date 10/13/15
BY: [Signature]

P.O. # 198562
B.U. # 345102



Customer Utilities Inc Location Ran Intake Date 10-21-15
 Contact _____ Phone _____ RO# 15-26522
 Address _____

Type of Equipment Cummins Hours 388
 Eqpt S/N I050833783 Eqpt M/N DGFS Eqpt Spec B
 Eng S/N _____ Eng M/N _____ Eng Spec _____
 X-Fer Switch S/N _____ M/N _____ Spec _____

Type Repair Emergency _____ Quoted Other _____

Complaint Replaced controller base board.

Cause _____

Correction Assisted Cummins personel in replacement of controller base board. Test ran unit, all satisfactory.

Additional Repairs Needed _____

Materials Removed from Site _____ Customer Signature _____

Used oil _____ qty. Name _____

Used Antifreeze _____ qty. Title _____

Used Bateriaes _____ qty. P.O. # _____

Service Technician Rudolph

Method of Payment Account _____ Credit Card _____

Credit Card Information _____

Is repair Complete Yes No _____

Emergency S/B Generator System left operational: Yes No _____

System left in Automatic Mode Yes _____ No _____ Breaker Closed Yes No _____

Signed _____ Title _____ Date _____

Purchase Order No. _____

USABlueBook®

Get the Best Treatment™

RECEIVED

INVOICE

OCT 26 2015

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

INVOICE NO.	PAGE NO.
781109	1 of 1
CUSTOMER NO.	DATE
911268	10/20/15

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
209 1 SP 0.485 E0209X I0305 D1508804564 P2899429 0001:0001

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Batch _____

Doc 723315

Ordered by: 0005 STEVE VAUGHN

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
199042 <i>345</i>	10/20/15	JOP	1%/10 NET 30	KY	573394	01	FXD/PPD	UPS
USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
25700	Heath Aquascope Leak Detector Kit w/o Visual Meter IN STOCK AT TIME OF QUOTE 345102 BUSINESS UNIT NUMBER	1	1	0	EA	2,080.45	EA	2,080.45

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
2,080.45	0.00	0.00	126.64	30.20	2,237.29

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook®

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
781109	911268	10/20/15	2,237.29

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

USABlueBook
P.O. Box 9004
Gurnee, IL 60031-9004

3007381

RECEIVED

NOV 12 2015

Layne Christensen Company

Remit to: P.O. Box 677801 Dallas, TX 75267-7801

Southeast Region ~ Baton Rouge, LA *** Jackson, MS *** Memphis, TN *** Rayne, LA *** Pensacola, FL
PH: 262-246-4646 ~ FAX: 262-246-4784

INVOICE #: 89078301

SOLD TO: Water Service Corp Of Kentucky
ATTN: Accounts Payable
2335 Sanders Road
Northbrook, IL 60062
Client Phone: 847-498-6440

INVOICE DATE: 11/09/2015

PO#: 199446

LAYNE ORDER#: 38445

CLIENT#: 10570523

Engineer: Ryan McMurry

Batch _____

TERMS: NET 30 DAYS

Doc 728194

QUANTITY	DESCRIPTION	PRICE	TOTAL
Work Performed on Business Unit #345101			
1	LS Labor to pull and install gate valve.	\$1,250.00	\$1,250.00
1	EA 6" Flanged Mueller Gate Valve	\$1,039.00	\$1,039.00
2	EA 6" Flange Packs	\$17.50	\$35.00

Invoice Sub Total: \$2,324.00
Tax: \$0.00

Invoice Total: \$2,324.00

Layne Christensen Company will institute a late payment charge at a rate of 18% per annum (unless a lower rate is required under applicable law, in which case the lower rate shall apply) for all payments not made on or before the due date. It is the policy of Layne Christensen to preserve all lien and payment bond rights where available. All notifications are sent strictly for this purpose.

Thank you for your business
Layne Christensen is an Equal Opportunity Employer
** ORIGINAL **



Be Right™

RECEIVED

NOV 10 2015

INVOICE NUMBER 9657247

DATE: 11/05/2015

Page: 1

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

TOTAL: \$423.82

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

Have you ordered online?
Order at WWW.HACH.COM

96572474 000468140 00000042382 110515

Batch

Sort Seg: 509

Tray: 9

DETACH HERE

Original

Doc

727458

SOLD TO



WATER SERVICE CORP OF KENTUCKY
2335 Sanders Rd
Northbrook, IL 60062-6108
United States

SHIPTO

WATER SERVICE CORP OF KENTUCKY
102 WATER PLANT RD
MIDDLESBORO, KY 40965
United States

Table with invoice details: INVOICE NO, PURCHASE ORDER NUMBER, TERMS, FREIGHT, CARRIER, ACCOUNT, REF. NO.

Remit to:

Hach Company
2207 Collections Center Dr
Chicago, IL 60693
Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

Main product table with columns: LN#, PRODUCT DESCRIPTION, ITEM NO., QUANTITY, UNIT PRIC, EXT. PRICE

ORDER CONTACT:

GARY MILLS
6062482306

Notes:

Summary table: SUBTOTAL, FREIGHT CHARGES, TAX, INVOICE TOTAL

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE, PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



OTHER BRANDS FROM HACH

3002915

RECEIVED

CORVALLIS MICROTECHNOLOGY,

3910 SW 53RD. STREET

CORVALLIS, OR 97333, USA

NOV 09 2015

INVOICE

INVOICE NUMBER: 061951

INVOICE DATE: 11/4/15

SOLD TO:

Voice: 847-897-6465

Fax: 847-498-2066

SHIP TO:

Batch

Doc

726541

UTILITIES, INC.
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD.
NORTHBROOK, IL 60062

UTILITIES, INC.
ATTN: STEPHEN VAUGHN
102 WATAER PLANT ROAD
MIDDLESBORO, KY 40965

ATTN: ACCOUNTS PAYABLE

Phone.....: 847-498-6440

SHIP VIA: Priority Mail

SHIP DATE: 11/4/15

DUE DATE: 12/4/15

TERMS: Net 30 Days

CUSTOMER UTILLN

P.O. NUMBER: 200224

OUR ORDER 061951

SALES LL

MC5GT/BASIC

MC5GT HANDHELD DATA
COLLECTOR WITH FLASH
EEPROM AND BASIC.X
INSTALLED SN:162012508
(REPLACEMENT FOR OLD MC-V
UNIT)

1 650.00 650.00

Shipping & Handling: 15.00
Subtotal: 650.00
Tax:
Payments:
Total: \$665.00

3005131

RECEIVED

348040

NOV 04 2015

Statement	DATE 11-4-15	TERMS
------------------	-----------------	-------

TO WSEK	Batch
------------	-------

middlesboro Ky	Doc 725515
----------------	---------------

IN ACCOUNT WITH Dyan meter Service 1300 Bracht Rd Corinth. Ky 41010
--

1	3" Neptune Comp and head assembly 8 inches	1200.00
	Total	1600.00
P.O.# 200367		
B.U.# 345102		
<i>[Signature]</i>		

CURRENT	OVER 30 DAYS	OVER 60 DAYS	TOTAL AMOUNT
---------	--------------	--------------	--------------

INVOICE



SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220

(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED

NOV 30 2015

INVOICE	
6598619	
Invoice Date	Page
11/24/2015 13:59:07	1 of 1
ORDER NUMBER	
1619107	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch _____
Doc 430708

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
201584 BU 345101	Net 30	12/24/2015	12/24/2015	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
11/23/2015 11:52:25	3628192	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: UPS GROUND Tracking #: 1ZX373190343076225

4	4	0		C44-34-NL 3/4X1 FORD BRASS COUPLING PJCTS X PJCTS **NO LEAD**	EA	18.7200	74.88
2	2	0		C44-44-NL 1 FORD BRASS COUPLING PJCTS X PJCTS	EA	20.8900	41.78
4	4	0		B44-233W-NL 3/4 FORD BALL VALVE PJCTS X PJCTS W/L.W. **NO LEAD**	EA	43.0800	172.32

Total Lines: 3

Total Freight In: 0.00

Total Freight Out: 15.26

SUB-TOTAL: 288.98
TOTAL FREIGHT: 15.26
KENTUCKY STATE TAX: 17.34
AMOUNT DUE: 321.58

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

3008346

HDSUPPLY

WATERWORKS

Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	E114656
INVOICE DATE	7/02/15
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due	\$153.38
-------------------------	-----------------

RECEIVED

JUL 06 2015

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

520 1 MB 0.439 E0038 I0056 D1393279615 P2692359 0002:0002



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:

102 PLANT RD
MIDDLESBORO, KY

Batch _____

Doc 095699

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
6/24/15	7/01/15	STOCK	BUS# 345102	1130		OUR TRUCK	E114656
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
	Ord by: JAMES LEONARD						
59VR010I	1 VALVE BOX RISER IMP	10	10		6.0300	EA	60.30
59VR020I	2 VALVE BOX RISER IMP	10	10		8.4400	EA	84.40

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	144.70

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$153.38
					8.68		

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE:	E114656
----------	---------

3009296

RECEIVED

SEP 03 2015

CREDIT MEMO



SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

CREDIT MEMO	
6588174	
Invoice Date	Page
8/31/2015 13:12:00	1 of 1
ORDER NUMBER	
1611149	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch _____
Doc 711284

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
191828-RETURN MATERIAL	345101.1130			0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
8/31/2015 08:56:11	3617069	Jeff Wallace	JHALFORD

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: BEST WAY

Tracking #:

-4	-4	0		C31-23-NL 3/4 FORD METER COUPLING MC X FIPT **NO LEAD**	EA	13.3600	-53.44
----	----	---	--	---	----	---------	--------

Total Lines: 1

SUB-TOTAL: -53.44

KENTUCKY STATE TAX: -3.21

AMOUNT DUE: -56.65

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

Staff DR 3.20a

Plant Additions

(see attached Excel file)

Staff DR 3.20b

Vehicle Invoices

3073354



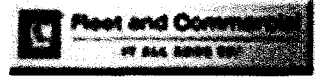
Fleet / Commercial Dept Vehicle# 1601
 6441 N. Tryon St.
 Charlotte, NC 28213
 704-598-4000 OR 800.821.6087

PO# 199670
 B# 860100

CONTRACT TO PURCHASE

Stock No.	116231X
Salesperson	RICK NASH
Date	10/27/15
Del Date	
Invoice #	

**BUSINESS
 ELITE**



Customer	WATER SERVICE CORP OF KENTUCKY				E-Mail		
Street	102 WATER PLANT ROAD	City	MIDDLESBORO	State	KY	Zip	40965
Contact	MARTIN LASHUA	Phone	704.319.0517	Cell		Fax	

PO #	Year/Make	FAN	Model/description	New/Used	Mileage	
	2016 CHEVROLET		COLORADO EXT CAB 4X4		100	
GVW Rating	Cyl	6	Engine	3.6 GAS	VIN	1GCHTCE31G1116231

TRADE-IN INFORMATION

Batch 221321

Make/model	Color	Year	Eng
VIN	Mileage	Notes	Doc <u>723449</u>

TRANSACTION

Items	VEHICLE		\$29,792.00
Added			
	LINE 8 IS FOR TAX, TAG & TITLE FEES FOR KY AND	TAG WILL BE MAILED TO CUSTOMER	
	INS INFO: LIBERT MUTUAL FIRE INS COMPANY		
	POLICY # AS2-641-436609-015	FAN # 973370 CAP CODE KFF	

E-mail		1. Total Price	\$29,792.00
		2. Trade-In Allowance	
		3. Net Trade Difference	\$29,792.00
		4. Other-DOC fee	
		5. Taxable sub-total	\$29,792.00
		6. Sales tax	0% \$0.00
		7. Invoicing and Services	
		8. Registration and Title Fees	\$2,162.57
		9. Sub-Total	\$31,954.57
		10. Amount Owed On Trade	
		11. Less GM Incentives / Rebates	
		12. Less Deposit / Down Payment	
		13. Final Amount Due / Financed	\$31,954.57

USED VEHICLE DISCLAIMER: AS IS

Parks Chevrolet, Inc hereby expressly disclaims all warranties, either express or implied, including any implied warranties of merchantability or fitness for a particular purpose, and neither assumes nor authorizes any other person to assume for it any liability in connection with the sale of this vehicle. Buyer shall not be entitled to recover from selling dealer any consequential damages, damages to property, damages for loss of use, damages for loss of time, loss of profits, or income, or any other incidental damages.

The information on the window form (Buyer's Guide) for this vehicle is part of this contract. Information on the window form overrides any contrary provisions in contract sale.

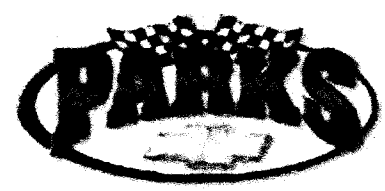
Customer Signature

Date **10/27/2015**

WATER SERVICE CORP
 Buyer

Accepted By Date

**BUSINESS
 ELITE**



3075263



1811 US 23
Prestonsburg, Kentucky 41653

Phone:
(606) 886-3861
1-877-886-3861
Fax (606) 889-6499

Purchaser's Name James Leonard - Utilities, Inc. Soc. Sec. No. _____ Date 11-12-15
Purchaser's Address 102 Water Plant Road D.O.B. _____ Residence Phone 606-848-3306
City, State & Zip Middlesboro, KY 40965 Business Phone 248-2306

VEHICLE BEING PURCHASED 66 CASH DELIVERED PRICE OF VEHICLE \$25,560
PLEASE ENTER MY ORDER FOR THE FOLLOWING: New Car Used Truck STOCK NO. 27360
YEAR 2016 MAKE Toyota MILEAGE 10 ACCESSORIES \$
MODEL OR SERIES TOYOTA BODY TYPE X-CAB
COLOR White TRIM BZ
M.V.I. OR SERIAL NO. 5TF5X5EN7G1040910 ENGINE TYPE 4
TO BE DELIVERED ON OR ABOUT _____ SALESMAN Chris Howell

WARRANTY DISCLAIMER
 Disclaimer Does Apply Disclaimer does NOT apply
We, the Seller, hereby expressly disclaim all warranties, either expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, and we neither assume nor authorize any other person to assume for us any liability in connection with the Sale of the Vehicle. The Manufacturer's Warranty is not affected by this disclaimer or Warranties by the Seller Dealer.
 The only Dealer Warranty on this vehicle is the Limited Warranty which is issued with and made a part of this order form.
 AS IS: this Vehicle is sold "as is" by us.

PO # 200929
Bl # 345102
K/Cos Center 80100

USED VEHICLE TRADED IN AND/OR OTHER CREDIT
YEAR _____ MAKE OF TRADE-IN _____
MODEL OR SERIES _____ BODY TYPE _____
COLOR _____ TRIM _____
M.V.I. OR SERIAL NO. _____ ENGINE TYPE _____
I CERTIFY THE ODOMETER READING ON MY ABOVE TRADE: READS _____ MILES. THE ODOMETER HAS HAS NOT EXCEEDED 100,000 MILES. SIGNATURE: _____

Batch 222800
Doc 727572

BALANCE OWED TO _____ Cash Price of Vehicle & Accessories \$25,560
ADDRESS _____ STATE AND LOCAL TAXES 1380 24
USED TRADE-IN ALLOWANCE \$ _____ License, License Transfer, Title Registration Fee 299
BALANCE OWED ON TRADE-IN \$ _____ TOTAL PRICE OF UNIT \$ 27239 24
NET ALLOWANCE ON USED TRADE-IN \$ _____ TOTAL CREDIT (Transfer from left column) \$ _____
REBATE \$ _____ Unpaid Cash Balance Due on Delivery \$ _____
CASH WITH ORDER \$ _____
TOTAL CREDIT (Transfer to right column) \$ _____
MEMO _____

Purchaser agrees that this Order includes all of the terms and conditions on both the face and reverse side hereof, that this Order cancels and supersedes any prior agreement and as of the date hereof comprises the complete and exclusive statement of the terms of the agreement relating to the subject matters covered hereby, and that THIS ORDER SHALL NOT BECOME BINDING UNTIL ACCEPTED BY DEALER OR HIS AUTHORIZED REPRESENTATIVE. Purchaser by his execution of this Order acknowledges that he has read its terms and conditions and has received a true copy of this Order.

Purchaser's Signature James Leonard Utilities, Inc. Date 11-12-2015
Accepted by _____ Per _____
(Dealer) (Name and Title)

3075263



1811 US 23
Prestonsburg, Kentucky 41653

Phone:
(606) 886-3861
1-877-886-3861
Fax (806) 889-8499

Purchaser's Name James Leonard Utilities, Inc. Soc. Sec. No. _____
Purchaser's Address 102 Water Plant Road D.O.B. _____ Date 11-12-15
City, State & Zip Middlesboro, KY 40965 Residence Phone 606-248-2306
Business Phone _____

VEHICLE BEING PURCHASED 67 CASH DELIVERED PRICE OF VEHICLE 25,500
PLEASE ENTER MY ORDER FOR THE FOLLOWING: New Car Used Truck Truck STOCK NO. 27361
YEAR 2016 MAKE TRUMA MILEAGE 9 ACCESSORIES \$ _____
MODEL OR SERIES Toyota BODY TYPE X-CAD
COLOR white TRIM B2
M.V.I. OR SERIAL NO. 5TFSX5EN9GX040908 ENGINE TYPE 4
TO BE DELIVERED ON OR ABOUT _____ SALESMAN Chris Howard

WARRANTY DISCLAIMER
 Disclaimer Does Apply Disclaimer does NOT apply
We, the Seller, hereby expressly disclaim all warranties, either expressed or implied, including any implied warranty of merchantability or fitness for a particular purpose, and we neither assume nor authorize any other person to assume for us any liability in connection with the Sale of the Vehicle. The Manufacturer's Warranty is not affected by this disclaimer or Warranties by the Seller Dealer.
 The only Dealer Warranty on this vehicle is the Limited Warranty which is issued with and made a part of this order form.
 AS IS: this Vehicle is sold "as is" by us.

Handwritten notes:
P.O. # 200933
B.U. # 345102
YH Cost Center 860100

USED VEHICLE TRADED IN AND/OR OTHER CREDIT
YEAR _____ MAKE OF TRADE-IN _____
MODEL OR SERIES _____ BODY TYPE _____
COLOR _____ TRIM _____
M.V.I. OR SERIAL NO. _____ ENGINE TYPE _____
I CERTIFY THE ODOMETER READING ON MY ABOVE TRADE: READS _____ MILES THE ODOMETER HAS HAS NOT EXCEEDED 100,000 MILES. SIGNATURE: _____

Batch 222806
Doc 727571

BALANCE OWED TO	Cash Price of Vehicle & Accessories	\$25560
ADDRESS	STATE AND LOCAL TAXES	1380 24
USED TRADE-IN ALLOWANCE \$	License, License Transfer, Title Registration Fee	299
BALANCE OWED ON TRADE-IN	TOTAL PRICE OF UNIT	\$ 27239 24
NET ALLOWANCE ON USED TRADE-IN \$	TOTAL CREDIT (Transfer from left column)	\$
REBATE \$	Unpaid Cash Balance Due on Delivery	\$
CASH WITH ORDER \$		
TOTAL CREDIT (Transfer to right column) \$		
MEMO		

Purchaser agrees that this Order includes all of the terms and conditions on both the face and reverse side hereof, that this Order cancels and supersedes any prior agreement and as of the date hereof comprises the complete and exclusive statement of the terms of the agreement relating to the subject matters covered hereby, and that THIS ORDER SHALL NOT BECOME BINDING UNTIL ACCEPTED BY DEALER OR HIS AUTHORIZED REPRESENTATIVE. Purchaser by his execution of this Order acknowledges that he has read its terms and conditions and has received a true copy of this Order.

Purchaser's Signature James Leonard Utilities, Inc. Date 11-12-2015
Accepted by _____ Per _____
(Dealer) (Name and Title)

Batch 223621

Doc 130266

REQUEST FOR MANUAL/COMPUTER CHECK

PAYABLE TO: Park Chevrolet

VENDOR # 3073354

INVOICE NO.: _____

\$ AMOUNT: \$27,853.00

Twenty Seven Thousand, Eight Hundred and Fifty Three Do

MAIL TO: P.O. Box 818
Middlesboro, KY 40965

(AMOUNT WRITTEN OUT)

INV. DATE: 11/24/2015

PURPOSE: Purchase of truck#1606 2015 Chevrolet Truck

CODES: AMOUNTS:

860100,1555 \$27,853.00

REQUESTED BY: _____ DATE NEEDED: _____

ACCTG. DIV. APPROVAL: _____

**Stephen
R. Vaughn**

Digitally signed by Stephen R. Vaughn
DN: cn=Stephen R. Vaughn,
o=Utilities, Inc., ou,
email=srvaughn@uiwater.com,
c=US
Date: 2015.11.24 16:02:52 -05'00'

2015 SILVERADO 1500 4WD 1WT REG GENERAL MOTORS LLC
 GAZ SUMMIT WHITE /V6G
 H2Q JET BLACK / DARK ASH RENAISSANCE CENTER
 ORDER NO. SCRHPQ/TRE STOCK NO. DETROIT MI 48243-1114
 VIN 1GC NKPE H1 FZ235065 VEHICLE INVOICE 10D33317313
 *****1248*****13*16780S
 MODEL & FACTORY OPTIONS MSRP INV AMT RETAIL - STOCK
 CK15903 SILVERADO 1500 4WD 1WT RE 30345.00 29131.21 INVOICE 01/22/15
 C5H GVW RATING - 6,900 LBS N/C N/C SHIPPED 01/22/15
 FE9 50-STATE EMISSIONS N/C N/C EXP I/T 02/02/15
 LV3 ENGINE, 4.3L V6 ECOTEC3 N/C N/C INT COM 02/02/15
 MYC TRANSMISSION, 6 SPD AUTOMATIC N/C N/C PRC EFF 01/22/15
 RC3 17" TIRES, ALL TERRAIN 200.00 176.00 KEYS XXXXX XXXXX
 Z82 TRAILERING EQUIPMENT PKG INCL: 770.00 677.60 WFP-S QTR OPT-1
 AUTO LOCKING REAR DIFFERENTIAL BANK: BRANCH BANK
 CHG-TO 16-780

SHIP WT: 4800
 HP: 36.8
 GVWR: 6900
 GAWR.FT: 3950
 GAWR.RR: 3950
 EMPLOY: 30180.42
 SUPPLR: 31379.81
 NTR: 1/2
 DAN: COM6
 EMPINC: 1795.84
 SUPINC: 596.44

INVOICE 31,649.00
 - H/B 200.00
 - CAP AMOUNT 5,500.00

 25,949.00

KY TAX -
 TAG FEES 1,904.00

 \$27,853.00

PO# 201788
 Bill# 345101
 KY Cost Center 866100

TOTAL MODEL & OPTIONS	31315.00	29984.81	ACT 237	30240.36
DESTINATION CHARGE	1195.00	1195.00	H/B 261	939.45
DEALER IMR CONTRIBUTION		156.58	ADV 261	156.58
LMA GROUP CONTRIBUTION		313.15	EXP 65A	313.15

TOTAL 32510.00 31649.54 PAY 310 31649.54

MEMO: TOTAL LESS HOLDBACK AND APPROX WHOLESALE FINANCE CREDIT 30254.91

 INVOICE DOES NOT REFLECT DEALER'S ULTIMATE COST BECAUSE OF MANUFACTURER
 REBATES, ALLOWANCES, INCENTIVES, HOLDBACK, FINANCE CREDIT AND RETURN TO
 DEALER OF ADVERTISING MONIES, ALL OF WHICH MAY APPLY TO VEHICLE.



Vehicle Locator

Detail Report for Customer

PARKS CHEVROLET
 6441 N TRYON ST. CHARLOTTE, NC. 28213
 704-598-4000

Customer/Company: CAROLINA WATER SERVICE Sales Consultant:
 Address:

Vehicle #1: 2015 Chevrolet 1500 Silverado	VIN/Order #	MSRP	Stock #
	1GCNKPEH1FZ235065	\$32,510.00	235065X

Additional Vehicle Information

Body Style: CK15903-LWB, 4WD, Reg Cab Pickup
 PEG: 1WT-1WT Work Truck Preferred Equipment Group
 Primary Color: GAZ-Summit White
 Trim: H2Q-Vinyl, Jet Black / Dark Ash, Interior Trim
 Engine: LV3-Engine: 4.3L, V-6, Alum, Flex Fuel, SIDI, V V T
 Transmission: MYC-6-Speed Automatic

Options: 1WT-1WT Work Truck Preferred Equipment Group
 A60-Tailgate Lock
 AE7-Seat: 40/20/40/ Split Front Bench
 AU3-Power Door Locks
 AY0-Airbags- Head Curtain, Side Impact
 BG9-Floor Covering: Rubberized Vinyl, Black
 C5H-GVV Rating 6900 Lbs.
 C67-Air Conditioning, Manual
 E63-Body: Pick Up Box
 FE9-Federal Emissions
 FHS-E85 Flex Fuel Capable
 G80-Locking Differential, Rear
 GAZ-Summit White
 GU6-Rear Axle, 3.42 Ratio
 H2Q-Vinyl, Jet Black / Dark Ash, Interior Trim
 IO3-Base Radio, 4.2" Color Screen, w/ USB Port
 K34-Cruise Control
 KC4-Cooler, Engine Oil
 KG4-Alternator, 150 AMP
 LV3-Engine: 4.3L, V-6, Alum, Flex Fuel, SIDI, V V T
 MYC-6-Speed Automatic
 RC3-Tires: P265/70 R17 All Terrain, Blackwall ←
 RD6-Wheels: 17" Steel
 SAF-Spare Tire Lock
 U2J-SiriusXM Satellite Radio, Delete
 UE0-OnStar Delete
 UQ5-Speaker System, 4 Standard
 V76-Recovery Hooks
 VH6-Bumper, Front, Black
 VJG-Bumper, Rear, Black
 Z82-Trailer Package
 ZY1-Paint, Solid

Disclaimer:

GM has tried to make the pricing information provided in this summary accurate. Please refer to actual vehicle invoice, however, for complete pricing information. GM will not make any sales or policy adjustments in the case of inaccurate pricing information in this summary.

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

21. Staff's Second Request, Item 31.a., required that for each net increase shown in the comparison of gross plant in service balances reported by WSKY in its annual reports for the three previous years and in its Application, WSKY provide a list of each plant addition project and each plant retirement project and include a description of each project and state each project's total cost. Provide invoices and any other source documentation to support the amounts of plant additions for each of the increases in the years requested. Separate this information by the categories requested in Item 31.b.

Response: Please refer to the tab labeled "PSC DR 3.21" on the attached file labeled "*Staff DR 3.21 – 2.31 Breakdown*" for a summary of the capital additions for each of the increases in the years requested in Staff DR 2.31.a. The grand total on the summary tab in Row 30 Column W, \$1,171,744, is equal to the sum of the yearly addition totals of \$281,406 plus \$500,663 plus \$389,675, for the years 2013, 2014, and January through June 2015, respectively. Details and support of the requested information is described below:

Captive Support:

Please refer to the tab labeled "PSC DR 3.21 GL Captive" on the file labeled "*Staff DR 3.21 – 2.31 Breakdown*" for the breakout of capitalized time, by employee, for the periods requested in Staff DR 2.31.a. The grand total is the sum of all wages, FICA, Medicare, FUTA, SUTA, Medical, Life Insurance, 401k, Disability, Retirement, Workers Compensation, and Transportation costs that are used to calculate the individual employee's capitalized time. This grand total is the amount of capitalized time that was booked in the periods requested in Staff DR 2.31.a.

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Invoice Support:

Please refer to the attached file labeled “*Staff DR 3.21 – Invoices*” for copies of all the invoices that support the increases in each of the years requested in Staff DR 2.31.a. These invoices are separated by the categories requested in Staff DR 2.31.b. On the tab labeled “Invoices” located in the file labeled “*Staff DR 3.21 – 2.31 Breakdown*” is a listing of all the invoices and the categories that they fall in. The total amount of invoiced additions can be found in Column W, Rows 20 through 25, on the tab labeled “PSC DR 3.21” and are separated by amounts for each category. General Ledger invoices are totaled in Column C, while individual capital projects are totaled in Columns H, M, and R, for the projects “Middlesboro Replace 552 ft. of 4” HDPE Pipe”, “Middlesboro Replace 1,176 ft. of 6” PVC Pipe”, and “Plate Settlers”, respectively.

Witness: Brian Halloran

Staff DR 3.21-3.31

Breakdown

(see attached Excel file)

Staff DR 3.21

Invoices

ADDITIONAL INFORMATION - IF APPLICABLE

**REFUND OF LIEN RECORDING FEE ON COURTESY DELIVERY ON 2014 CHEVY SILVER
ADO VIN# 1GCVKPEH4EZ196941**

CHECK	VENDOR	VENDOR NAME			CHECK DATE
36526	UTIL001	UTILITIES INC.			1/16/2014
INVOICE	INVOICE DATE	INVOICE AMOUNT	DISCOUNT	AMOUNT PAID	MEMO INFORMATION
EZ196941	1/16/2014	22.00	.00	22.00	REFUND OF REGISTRATION FEES
		860.1555			
		INVOICE TOTAL	DISCOUNT TOTAL	PAID TOTAL	CUSTOMER NUMBER
REMITTANCE ADVICE		22.00	.00	22.00	

(C) 2003 ARKONA, Inc. - Dealership Application Group (800)945-1028

SHELBY AUTOMOTIVE LLC
207 State Route 48 N
PO BOX 740
Mayfield, KY 42068



PO BOX 740
2007 SR 45 N
Mayfield, KY 42066

Phone: (270) 247-4111 Fax: (270) 247-8590
Toll Free: (800) 391-1144

1st Kentucky Bank
223 SOUTH SIXTH STREET
MAYFIELD, KY 42066
73-111/838

DATE	CHECK
1/16/2014	36526

AMOUNT
\$ 22.00

Pay Twenty-Two Dollars and no/Cents

THE ORDER OF
**UTILITIES INC.
972 TOWN CENTER BLVD.
SANFORD, FL 32771**

Bonnie Kuby

0000036526 00839011130206 967 300



3058580

Account Number 809343

Invoice Date 1/23/2015

PO Number CLINTON KY

Due Date 2/22/2015

Billing Inquiries 678-762-6820

Pay Online <https://billpay.nextraq.com>

Website NexTraq.com

INVOICE

Invoice Number: HWI029980

Bill To:
 Water Services Corp KY - Business Unit
 Kendra Rose
 2335 Sanders Rd
 Northbrook IL 60662

866100.6230

Ship To:
 Water Services Corp KY - Busines
 James Leonard
 100 East Jackson St
 Clinton KY 42031

Dealer ID		Sales Rep		Shipping Method	Payment Terms	Ship Date	Order #
800036		DFLORES		FED EX GROUND	NET 30	1/22/2015	HW031928
Ordered	Shipped	B/C	Item Number	Description	Unit Price	Ext. Price	
3	3	0	DW-00-VT4262-3 INT	VT4262-3 INT STD Kit	\$ 149.00	\$ 447.00	
3	3	0	DW-00-A0011	LMU-2620, HSPA(3g) Built-in Antena			
			4661253079	1			
			4661253098	1			
			4661251442	1			
3	3	0	DW-00-M0044	Power Cable, LMU-2610			
3	3	0	DW-00-M0001	INSTALLATION KIT ASSY			
3	3	0	HW-00-INSTAL	Installation Fees	\$ 75.00	\$ 225.00	

Batch 201964
 Doc 666026

Please put entire Invoice Number and Account Number on your check
 We accept VISA, Mastercard, or AMEX. Federal Tax ID#: 58-2545554
 We must receive any billing questions/disputes within 30 days of Invoice Date.
 Past Due Accounts subject to Service Interruption & Deactivation
 Shipping Address: 1200 Lake Hearn Rd. Suite 500
 Atlanta, GA 30319

Subtotal	\$ 672.00
Misc	\$ 0.00
Tax	\$ 0.00
Freight	\$ 14.00
Prior Balance	\$ 0.00
Invoice Total	\$ 686.00



BU-

3058580

Account Number 809343

Invoice Date 1/23/2015

PO Number MIDDLESBORO KY

Due Date 2/22/2015

Billing Inquiries 678-762-6820

Pay Online <https://billpay.nextraq.com>

Website NexTraq.com

860100.6230

INVOICE

Invoice Number: HWI029981

Bill To:
 Water Services Corp KY - Business Unit
 Kendra Rose
 2335 Sanders Rd
 Northbrook IL 60662

Ship To:
 Water Services Corp KY - Busines
 James Leonard
 102 Water Plant Rd.
 Middlesboro KY 40965

Dealer ID		Sales Rep		Shipping Method	Payment Terms	Ship Date	Order #
800036		DFLORES		FED EX GROUND	NET 30	1/22/2015	HW031929
Ordered	Shipped	B/O	Item Number	Description	Unit Price	Ext. Price	
12	12	0	DW-00-VT4262-3 INT	VT4262-3 INT STD Kit	\$ 149.00	\$ 1,788.00	
12	12	0	DW-00-A0011	LMU-2620, HSPA(3g) Built-in Antena			
			4661252629	1			
			4661252646	1			
			4661255910	1			
			4661252680	1			
			4661254011	1			
			4661252667	1			
			4661267093	1			
			4661267088	1			
			4661252607	1			
			4661252619	1			
			4661253077	1			
			4661253094	1			
12	12	0	DW-00-M0044	Power Cable, LMU-2610			
12	12	0	DW-00-M0001	INSTALLATION KIT ASSY			
12	12	0	HW-00-INSTAL	Installation Fees	\$ 75.00	\$ 900.00	

Batch 200508
 Doc 661195

Please put entire Invoice Number and Account Number on your check
 We accept VISA, Mastercard, or AMEX. Federal Tax ID#: 58-2545554
 We must receive any billing questions/disputes within 30 days of Invoice Date.
 Past Due Accounts subject to Service Interruption & Deactivation
 Shipping Address: 1200 Lake Hearn Rd. Suite 500
 Atlanta, GA 30319

Subtotal	\$ 2,688.00
Misc	\$ 0.00
Tax	\$ 0.00
Freight	\$ 57.00
Prior Balance	\$ 0.00
Invoice Total	\$ 2,745.00

Batch 172467

REQUEST FOR MANUAL/ COMPUTER CHECK

Doc 57491

PAYABLE TO: Falls Chevrolet

VENDOR # 3062247

INVOICE NO.: _____

\$ AMOUNT: \$1,791.21

one thousand seven hundred ninety one dollars

and twenty one cents

(AMOUNT WRITTEN OUT)

MAIL TO; Kendra Rose

INV. DATE: _____

CODES: _____ AMOUNTS: _____

PURPOSE: Tax, tag, title for 1444

860100 1556225

REQUESTED Kendra Ro DATE NEEDED 1/15/2014

ACCTG. DIV. APPROVAL: _____

**Kendra
Rose**

Digitally signed by Kendra
Rose
DN: cn=Kendra Rose, o,
ou=Utilities Inc,
email=keroserose@uiwater.com,
c=US
Date: 2014.01.15 09:18:54
-06'00'

RECEIVED

JAN 15 2014

Phyllis Luppino

From: Sanfilippo, Michael <MSanfilippo@vtaig.com>
Sent: Friday, January 10, 2014 8:14 AM
To: Kendra E. Rose
Subject: CVN 1444

Follow Up Flag: Follow up
Flag Status: Flagged

Kendra,

The Tax, Tag, Title and Vehicle Inspection fees for CVN 1444 (EZ197566) are as follows:

Tax	\$1752.21
Registration	\$ 25.00
Title Fee	\$ 9.00
Inspection Fee	<u>\$ 5.00</u>
Total	\$1791.21

I have requested a W9 from Falls Chevrolet so you can set them up in you're A/P system.

When the check is cut and ready to go out please send to:

Falls Chevrolet
13307 North US Highway 25
Corbin, Kentucky 40701
Attention: David Barton

Thank you Kendra,

Michael

Michael SanFilippo
Fleet Director
DMC/Van Tuyl Group
972 Towne Center Blvd.
Sanford, Florida 32771
Direct: 407-547-2587



Batch 171006

Doc 570318

REQUEST FOR MANUAL/COMPUTER CHECK

PAYABLE TO: Shelby Chevrolet
2007 State Road 45N
Mayfield, KY 42006

VENDOR # 3061881
INVOICE NO: _____
\$ AMOUNT \$ 1855.57

MAIL TO: DALumb

One thousand Eight Hundred Fifty Five and 57/100
(AMOUNT WRITTEN OUT)

PURPOSE: Tag, Title + Tax
1439

INV. DATE: _____
CODES: _____ AMOUNTS: _____
860100

REQUESTED BY: _____ DATE NEEDED: _____

ACCTG. DIV. APPROVAL: _____

DALumb 12/27/13

RECEIVED
DEC 27 2014

Bruce

NEW

Debra A. Plumb

From: Sanfilippo, Michael [MSanfilippo@vtaig.com]
Sent: Thursday, December 26, 2013 3:01 PM
To: Debra A. Plumb
Subject: RE: VM re KY vehicle title

Debbie,

Thank you for the EIN number.

I have tax, tag and title numbers for CVN 1439 (last eight of VIN EZ196941), as follows:

Sales Tax:	\$1794.57
Plate Fee:	\$ 25.00
Title Fee:	\$ 9.00
Inspection Fee:	\$ 5.00
Total Cost:	\$1855.57

Please overnight the check to:

Shelby Chevrolet
2007 State Road 45 N.
Mayfield, Kentucky 42006
Attention: Amber Crider

Thank you,

Michael

Michael SanFilippo
Fleet Director
DMC/Van Tuij Group
972 Towne Center Blvd.
Sanford, Florida 32771
Direct: 407-547-2587



From: Debra A. Plumb [mailto:DAPlumb@uiwater.com]
Sent: Thursday, December 26, 2013 3:34 PM
To: Sanfilippo, Michael
Cc: Kendra E. Rose
Subject: VM re KY vehicle title

Michael, the FEIN for Water Service Corporation of Kentucky is 61-1421099.

Debbie

3049310

RECEIVED

SEP 3 0 2013

Commercial Buyers Invoice

David Maus Chevrolet

Sanford, Florida

Michael SanFilippo - Fleet Director

Phone: 407-547-2600

Email: msanfilippo@vtaig.com

CVN # & Driver
CVN#1444
Bryan Sandefur

Vehicle VIN #

Customer: Water Service Corporation of Kentucky Date: Sept. 18, 2013
 Street: 102 Water Plant Road Phone: _____
 City: Middlesboro State: KY Reg. Dir. Bruce Haas
 GM FAN#: 814015 Zip: 40965

Model Year: 2014 Model #: CK15753 4WD Double Cab WT

Vehicle Description: White 4.3L V6 EcoTec w/ 6 Speed Transmission, A/T Tires, Cloth Seats,

Vehicle Description Cont: Trailer Equip. Pkg., Tr. Brake Controller, 110 Outlet, Xtra Keys, Deep Gullwing

Diamond Plate Cross Box, Spray In Bed Liner, 4 Corner Strobes, Regular Bed Work Truck

GM Contract Account Selling Price	\$28,303.00
Option: Diam. Plate Gullwing Cross Box Installed	\$500.00
Option: Spray In Bed Liner	\$500.00
Option: 4 Corner Flashing Strobes Installed	\$600.00
Option:	
Option	
Back out Dealer Fee	(\$699.50)
Less Trade In Allowance	
Cash Difference	\$29,203.50
Dealer Fee	\$699.50
Plus Waste Tire Fee (State Fee)	\$5.00
Plus Battery Fee (State Fee)	\$1.50
Plus Electronic Filing Fee	\$0.00
Total Taxable Amount	\$29,909.50
Plus Florida State Sales Tax	\$0.00
Plus County Sales Tax @ <input type="text" value="0.00%"/>	\$0.00
Plus State Tag, Title & Registration Fee	\$0.00
Plus Pre-Owned Vehicle Balance Owed	
Total Charges	\$29,909.50
Less Factory Rebates	
Less Down Payment	
Less Cash on Delivery	
Total Balance Due	\$29,909.50

P.O. #143401
Charge to: 860100

SC Sales Tax and Tag & Title work to be paid COD

Batch 165077
 Doc 590906

Annette Zavilla

From: James Leonard
Sent: Tuesday, October 01, 2013 10:06 AM
To: Annette Zavilla
Subject: RE: Vehicle Purchase for WSCK - Middlesboro KY- Bryan Sandefur

David Maus Chevrolet
972 Towne Center Blvd.
Sanford, FL. 32771

And don't forget to tell them to send James Leonard a 2014 Corvette! I going back to my childhood and need to find a new girlfriend.

James Leonard

From: Annette Zavilla
Sent: Tuesday, October 01, 2013 11:02 AM
To: James Leonard
Subject: RE: Vehicle Purchase for WSCK - Middlesboro KY- Bryan Sandefur

Do you know the mailing address?

From: James Leonard
Sent: Tuesday, October 01, 2013 9:37 AM
To: Annette Zavilla
Subject: RE: Vehicle Purchase for WSCK - Middlesboro KY- Bryan Sandefur

Same place,

The dealership, Attention Michael Sanfilippo.

Thanks,
James Leonard

From: Annette Zavilla
Sent: Tuesday, October 01, 2013 10:10 AM
To: James Leonard
Subject: FW: Vehicle Purchase for WSCK - Middlesboro KY- Bryan Sandefur

Where would you like this check sent also?

From: James Leonard
Sent: Monday, September 30, 2013 1:27 PM
To: Annette Zavilla
Cc: Bryan K. Sandefur; Bruce Haas; Helen C. Lupton; Stephen R. Vaughn; MSanfilippo@vtaig.com
Subject: Vehicle Purchase for WSCK - Middlesboro KY- Bryan Sandefur

Hi Annette,

Please process the attached invoice from David Maus Chevrolet, Sanford Florida for the New 2014 Chevy truck to be delivered to :

Bryan Sandefur- WSCK
102 Water Plant Road
Middlesboro, KY 40965

Michael; I changed the ship to address on the Invoice to the correct location where the vehicle is to be delivered.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp. of KY

RECEIVED

SEP 30 2013

Commercial Buyers Invoice

David Maus Chevrolet

Sanford, Florida

Michael SanFilippo - Fleet Director

Phone: 407-547-2600

Email: msanfilippo@vtaig.com

CVN # & Driver

CVN#1439

John turner

Vehicle VIN #

Customer: Water Service Corporation of Kentucky

Date: Sept. 18, 2013

Street: 100 East Jackson

Phone: _____

City: Clinton

State: KY

Reg. Dir. Bruce Haas

GM FAN#: 814015

Zip: 42031

Model Year: 2014

Model #: CK15753 4WD Double Cab WT

Vehicle Description: White 4.3L V6 EcoTec w/ 6 Speed Transmission, A/T Tires, Cloth Seats,

Vehicle Description Cont: Trailer Equip. Pkg., Tr. Brake Controller, 110 Outlet, Xtra Keys, Deep Gullwing

Diamond Plate Cross Box, Spray In Bed Liner, 4 Corner Strobes, Regular Bed Work Truck

GM Contract Account Selling Price
Option: Diam. Plate Gullwing Cross Box Installed
Option: Spray In Bed Liner
Option: 4 Corner Flashing Strobes Installed
Option:
Option:
Back out Dealer Fee
Less Trade In Allowance
Cash Difference
Dealer Fee
Plus Waste Tire Fee (State Fee)
Plus Battery Fee (State Fee)
Plus Electronic Filing Fee

\$28,303.00
\$500.00
\$500.00
\$600.00
(\$699.50)
\$29,203.50
\$699.50
\$5.00
\$1.50
\$0.00
\$29,909.50
\$0.00
\$0.00
\$0.00
\$29,909.50
\$29,909.50

Total Taxable Amount
Plus Florida State Sales Tax
Plus County Sales Tax @ 0.00%
Plus State Tag, Title & Registration Fee

Plus Pre-Owned Vehicle Balance Owed

Total Charges

Less Factory Rebates
Less Down Payment
Less Cash on Delivery

Total Balance Due

P.O. #143398
Charge to: 860100

KY Sales Tax and Tag & Title work to be paid COD

Batch 165077
Doc 550905

David Maus Chevrolet
972 Towne Center Blvd.
Sanford, FL. 32771

From: Annette Zavilla
Sent: Tuesday, October 01, 2013 11:02 AM
To: James Leonard
Subject: RE: Vehicle Purchase for WSCK - Middlesboro KY- Bryan Sandefur

Do you know the mailing address?

Annette Zavilla

From: James Leonard
Sent: Tuesday, October 01, 2013 9:36 AM
To: Annette Zavilla
Subject: RE: Vehicle Purchase for WSCK - John Turner- Clinton KY

To the dealership. Attention Michael Sanfilippo.

Thank you,
James Leonard

From: Annette Zavilla
Sent: Tuesday, October 01, 2013 10:10 AM
To: James Leonard
Subject: FW: Vehicle Purchase for WSCK - John Turner- Clinton KY

Mornin' James,

Where should the check be sent?

Annette

From: James Leonard
Sent: Monday, September 30, 2013 1:16 PM
To: Annette Zavilla
Cc: Bruce Haas; Helen C. Lupton; John Turner; Stephen R. Vaughn; MSanfilippo@vtaig.com
Subject: Vehicle Purchase for WSCK - John Turner- Clinton KY

Hi Annette,

Please process the attached invoice from David Maus Chevrolet in Sanford Florida, for a New 2014 Chevy truck to be delivered to;

John Turner
100 East Jackson Street
Clinton, KY 42031

David, you can see I changed the address on the invoice where the vehicle needs to be delivered.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.

Please process the attached invoice from David Maus Chevrolet, Sanford Florida for the New 2014 Chevy truck to be delivered to :

Bryan Sandefur- WSCK
102 Water Plant Road
Middlesboro, KY 40965

Michael; I changed the ship to address on the Invoice to the correct location where the vehicle is to be delivered.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp. of KY

GRAINGER

ORIGINAL INVOICE

1200 S. WOLF RD
WHEELING, IL 60090-6442
www.grainger.com

RECEIVED

MAR 16 2015

GRAINGER ACCOUNT NUMBER 814884623
INVOICE NUMBER 9688502450
INVOICE DATE 03/12/2015
DUE DATE 04/11/2015
AMOUNT DUE 430.54

3007188
Ship to information is listed below
in the description section

BILL TO
MDG2015 00003452 1 AT 0406

UTILITIES INC
2335 SANDERS RD
NORTHBROOK, IL 60062-6196



PO NUMBER: 181025
PO RELEASE: 345102 1120
DEPARTMENT: 345102
PROJECT/JOB: 345102
CALLER: GARY MILLS
CUSTOMER PHONE: (606) 248-2306
ORDER NUMBER: 1230128563
INCO TERMS: FOB ORIGIN

Interested in receiving invoices via email?
Sign up for paperless invoicing at:
www.grainger.com/paperlessinvoicing

THANK YOU!

FEI NUMBER 36-1150280

FOR ANY QUESTIONS ABOUT THIS INVOICE OR ACCOUNT CALL 1-800-472-4643

PO LINE #	ITEM #	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
000020	44198983	The following items were shipped to: UTILITIES INC 2335 SANDERS RD NORTHBROOK IL 60062-6196 VACUUM BREAKER, 1/2 IN, FNPT, POLYPROPYLENE CUST PART # FCVB50V THIS ITEM IS NON-CANCELABLE AND NON-RETU MANUFACTURER # FCVB50V	2	210.16	420.32
Batch					
Doc					690569
INVOICE SUB TOTAL					420.32
SHIPPING CHARGE					10.22

**

These items are sold for domestic consumption. If exported, purchaser assumes full responsibility for compliance with US export controls. Diversion contrary to US law prohibited.

PAYMENT TERMS NET 30 DAYS. PAY THIS INVOICE NO STATEMENT SENT. PAYABLE IN U.S. DOLLARS.

AMOUNT DUE 430.54

PLEASE DETACH THIS PORTION AND RETURN WITH YOUR PAYMENT.

BILL TO:
UTILITIES INC
2335 SANDERS RD
NORTHBROOK, IL 60062-6196

REMIT TO:
GRAINGER
DEPT. 865496251
PALATINE, IL 60038-0001

8654962519688502450100004305410000001000000100000015041100

X

ACCOUNT NUMBER
814884623

DATE
03/12/2015

INVOICE NUMBER
9688502450

AMOUNT DUE
430.54

FOR COMMENTS OR CHANGE OF ADDRESS, ENTER INFORMATION ON REVERSE SIDE.

3069726

RECEIVED

JUN 09 2015

Herrick Company, Inc.

(502) 839-0939 fax

1385 Tracy Road

Lawrenceburg, KY 40342

Invoice

Date	Invoice #
5/27/2015	1170

Bill To
Water Service Corporation of KY Attn: James R. Leonard P.O. Box 818 Middlesboro, KY 40965

Batch _____

Doc 689543

Description	Amount
<p>Completion of Contract 614-14-01 dated January 12, 2015. Total Amount of Contract \$325,510.00. Summary of work included:</p> <ul style="list-style-type: none"> - Remove existing tube settlers and supports. - Remove one 3-foot walkway on east end of each settling basin. - Remove sludge suction piping. - Remove effluent piping and collection troughs to inside basin walls. - Remove influent piping as shown in Drawings and abandon remaining influent piping in place. - Perform influent and effluent piping modifications as shown on Drawings. - Install plate settler equipment as shown on Drawings. <p>1st installment (Invoice # 1129 dated December 30, 2014) in amount of \$25,000.00</p> <p>Total Amount Remaining on Contract</p> <p><i>Capital Project # 2014140</i> <i>B.u.# 345102</i> <i>P.O.# 187600</i></p>	<p>300,510.00</p>
Total	\$300,510.00

Annette Zavilla

From: James Leonard
Sent: Tuesday, June 09, 2015 4:33 PM
To: Annette Zavilla
Cc: Stephen R. Vaughn; Bruce Haas; Gary Mills
Subject: HCI- Invoice for Plate Settler Project # 2014140
Attachments: Herrick Company Invoice 5-27-15.pdf

Hi Annette,

Would you please process the attached Invoice for Capitol Project # 2014140? The P.O. was approved and receipted today.

Thank you kindly,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp of KY

Employee Travel and Business Expense Reimbursement Form



Employee Name:	Bruce T Haas
Business Unit:	Proj 2014140

ACCOUNTING USE		
	Object Code	Amount
1.	2014140.6185 16676	\$ 115.75
2.	2014140.6200 00107	91.55
3.		
4.		
5.		
6.		
7.		
8.		
9.		
10.		
11.		
12.		
13.		
14.		
15.		
16.		
17.		
18.		
19.		
20.		
		\$ 207.30

EMPLOYEE USE	
EXPENSE SUMMARY	
Total expenses	\$ 207.30
Less cash advances	-
Less amounts charged on corporate credit card	-
Net amount due employee	\$ 207.30
MILEAGE REIMBURSEMENT CALCULATOR	
Miles driven	-
IRS mileage rate	\$ 0.575
Mileage reimbursement	\$ -
<i>Note that the mileage reimbursement calculated above must be manually entered on page two of this form.</i>	
PURPOSE OF EMPLOYEE TRAVEL	
Lodging/Meals - Plate Settler Project WSKY. #2014140	

Bruce T. Haas

Digitally signed by Bruce T. Haas
 DN: cn=Bruce T. Haas, o=Utilities, Inc.,
 ou=Vice President of Operations,
 email=BTHaas@uiwater.com, c=US
 Date: 2015.06.01 23:01:33 -04'00'

Employee Signature	Date	Approved By	Date
			6/2/15

Bruce - Hotel
 WSC-KY Plate Settles Project
 Proj. # 2014140



05-13-15

Bruce Haas 5 heritage hills crt Columbia SC 29203 United States	Folio No. :	Cashier No. : 104	Room No. : 317
	A/R Number :		Arrival : 05-12-15
	Group Code :		Departure : 05-13-15
	Company :		Conf. No. : 66610991
	Membership No. : PC 102461090		Rate Code : IGCOR
	Invoice No. :		Page No. : 1 of 1

Date	Description	Charges	Credits
05-12-15	*Accommodation	105.00	
05-12-15	State Tax	6.55	
05-12-15	City Tax	1.05	
05-12-15	Occupancy Tax	3.15	
05-13-15	MasterCard		115.75
Thank you for staying at Holiday Inn Express Middlesboro. Qualifying points for this stay will automatically be credited to your account.		Total	115.75
		Balance	0.00

Guest Signature: _____

I have received the goods and / or services in the amount shown heron. I agree that my liability for this bill is not waived and agree to be held personally liable in the event that the indicated person, company, or associate fails to pay for any part or the full amount of these charges. If a credit card charge, I further agree to perform the obligations set forth in the cardholder's agreement with the issuer.

Holiday Inn Express Middlesboro
 1252 N. 12th Street
 Middlesboro, Kentucky 40965
 Telephone: (606) 248-6860 Fax: (606) 248-6978

* Open to legal US & DC *
* residents, 18 and older. *
* Void where prohibited. *



Cracker Barrel Store #706
Middlesboro, KY
1369291 MICHAELA P 1

TBL 112/1 3440 GST 2
MAY12'15 6:44PM

1 ICED TEA UNSWEET	2.19
1 FF CKN & DUMPLIN	8.99
1 ICED TEA SWEET	2.19
1 FF TROUT LEM GR	9.99
1 ICED TEA SWEET	2.19
1 FF CFC	9.79
Subtotal	35.34
Tip	8.00
State&Local Tax	2.12
Total	45.46

REF:344129

AUTHCODE:06194J

XXXXXXXXXXXX7088

MASTER CARD 45.46

--1538432 CLOSED MAY12 7:45PM--

Thank You
Please Come Back

www.CrackerBarrel.com

Dinner - BTH/James L./Bob Johnson
WSC-KY Plate Settler Project
Proj. #2014140

LUNCH - James...
Plate Settler Project - WSC - KY
Project ID 2014140

PIZZA HUT OF MIDDLESBORO
#006460
725 US Hwy. 25E
MIDDLESBORO, KY 40965
606-248-7338

Ticket # 30
5/13/2015 12:27 pm

(601...
LEON RD

LG	15.49
Thin	
Meal Lovers	
S Classic	
LG	5.49
Thin	
Supreme	
S Classic	
Subtotal	30.98
Sales Tax	1.86
Total	32.84

Ticket # 30

Thank You!

Gather Round the Good Stuff!

Driver's License #
Employee's Initials

TIP 5.69
\$38.53

FLIP OVER FOR A CHANGE TO WIN!

12:15 - Lunch
Middlesboro, Ky - Plate Settler Project
Proj. ID # 2014140

BUY ONE GET ONE FREE QUARTER POUNDER
W/CHEESE OR EGG MCMUFFIN
Go to www.mcdvoice.com within 7 days
and tell us about your visit.

Validation Code: _____
Expires 30 days after receipt date.
Valid at participating US McDonald's.
5290 TWIN SPIRES LANE

MORRISTOWN
TN
37814

!!! THANK YOU !!!

TEL# 423-586-3749 Store# 36297

KS# 13 May.12'15 (Tue) 12:41

MFY SIDE 1 KVS Order 63

QTY ITEM	TOTAL
1 20 McNuggets	5.00
2 Hot Mustard Sauce	
1 BBQ Sauce	
1 BBQ Sauce	0.00
1 L Coke	1.89
Subtotal	6.89
Tax	0.67
Take-Out Total	7.56
Cashless	7.56
Change	0.00

MER# 26507601
CARD ISSUER ACCOUNT#
Master SALE *****7088
AUTHORIZATION CODE - 06790J SEQ# 203626

McDonald's Restaurant

3007381

RECEIVED

JUN 08 2015

NEW REMITTANCE

Layne Christensen Company

PO Box 677801

Dallas TX 75267-7801

Layne Christensen Company

Remit to: P.O. Box 677801 Dallas, TX 75267-7801

Southeast Region ~ Baton Rouge, LA *** Jackson, MS *** Memphis, TN *** Rayne, LA *** Pensacola, FL
PH: 262-246-4646 ~ FAX: 262-246-4784

INVOICE #: 89073463

SOLD TO: Water Service Corp Of Kentucky
ATTN: Accounts Payable
2335 Sanders Road
Northbrook, IL 60062
Client Phone: 847-498-6440

INVOICE DATE: 06/04/2015

PO#: 185895 *345*

LAYNE ORDER#: 36086

CLIENT#: 10570523

Engineer: Ryan McMurry

Additional Customer Notes:

Contact: James Leonard
270-207-0135

TERMS: NET 30 DAYS

Batch _____

Doc 688790

QUANTITY	DESCRIPTION	PRICE	TOTAL
WORK DONE FOR BUSINESS UNIT 345101			
2	EA Preventative Maintenance and Testing on (2) wells and pumps as per quote dated 1/16/15.	\$500.00	\$1,000.00
1	LS Labor and materials to pull and replace 20HP motor as per quote dated 5/6/15.	\$3,035.00	\$3,035.00

Invoice Sub Total: \$4,035.00

Tax: \$0.00

Invoice Total: \$4,035.00

Layne Christensen Company will institute a late payment charge at a rate of 18% per annum (unless a lower rate is required under applicable law, in which case the lower rate shall apply) for all payments not made on or before the due date. It is the policy of Layne Christensen to preserve all lien and payment bond rights where available. All notifications are sent strictly for this purpose.

Thank you for your business
Layne Christensen is an Equal Opportunity Employer

**** ORIGINAL ****

3009296

RECEIVED

JUN 08 2015

INVOICE



WATER, SEWER & GAS DIVISION
 SIGNS & SAFETY DIVISION
 P.O. Drawer 459—1105 Hwy 77
 Atwood, TN 38220
 (731)662-7193 or (800)238-3836
 Fax: (731)662-7219

INVOICE	
6577896	
Invoice Date	Page
6/3/2015 10:24:21	1 of 1
ORDER NUMBER	
1598611	

Bill To:

WATER SERVICE CORP OF KENTUCKY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS ROAD
 NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
 100 EAST JACKSON ST.
 NO TRUCK CHARGE
 CLINTON, KY 42031

Batch _____

Doc 688788

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
186758 BU 345101	Net 30	7/3/2015	7/3/2015	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
5/20/2015 11:02:35	3604599	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: OUR TRUCK

Tracking #: T.HUDGINS 5-28-15

6	6	0		VBR-1 1 VALVE BOX RISER	EA	9.0500	54.30
6	6	0		VBR-2 2 VALVE BOX RISER	EA	11.6500	69.90
6	6	0		VBL-W 51/4 VALVE BOX LID MARKED WATER	EA	12.0000	72.00
500	500	0		PE200B-500 3/4CTS CLASS 200 WATER TUBING 500' ROLL	FT	0.2700	135.00
4	4	0		BA13-232W-NL 5/8X3/4 FORD ANGLE BALL VALVE W/L.W. **NO LEAD**	EA	37.8300	151.32

Total Lines: 5

SUB-TOTAL: 482.52
KENTUCKY STATE TAX: 28.95
AMOUNT DUE: 511.47

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

3006446



RECEIVED

JUN 01 2015

INVOICE	
Date	05/26/15
Document	RN 25301274
Page No.	1 / 1

Bill to customer 977151
 ATTN: ACCOUNTING DEPARTMENT
 Water Service Corporation of Kentucky
 2335 Sanders Road
 Northbrook IL 60062
 United States

Batch _____
 Doc 687378

Please be advised that your account has been debited or back-charged as follows:

Customer VAT Number :

Line	Type	Due Date	Remark	Amount
------	------	----------	--------	--------

001	Non-trade Invoice	06/25/15	PO Number 183904 Unit #345102	658.19
-----	-------------------	----------	-------------------------------	--------

Gear Reducer \$ 658.19
 Part #207-1426, Red 15:1 1.75 CD SM 56C 25MMB C
 Job No. NAI-14061
 Middlesboro, KY
 Standard mail
 Cabot Corporation
 P.O. Box 809018
 Chicago, IL 60680-9018
 Expedited mail
 U.S. Bank
 Attn: Lockbox # 809018
 5300 S. Cicero Avenue
 Chicago, IL 60638
 Electronic Payment
 Beneficiary Bank U.S. Bank
 800 Nicollet Mall, BC-MN-H201
 Minneapolis, MN 55402
 ABA Routing Number 123000848
 SWIFT Code USBKUS44IMT
 Beneficiary Account Name Cabot Corporation
 2 Seaport Lane, Suite 1300
 Boston, MA 02210
 Beneficiary Account Number 153910839759
 Currency USD

Total Amount Invoiced 658.19 USD

Tax Amount

Balance Due

658.19 USD



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

INVOICE DATE
4/30/2015

RECEIVED
MAY 04 2015

Z2150398

INVOICE NUMBER 2250693-001-000	
PAGE 1 OF 1	

3000307

SOLD TO:

Account No.
220148

Original Invoice

SHIP TO: CPS SOMERSET
95 BRIANS WAY

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK

IL 60062

SOMERSET

KY 42501

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Batch _____
Doc 684660

Customer Order No.				Terms of Sale NET 30			Ship Via UPS		
Freight PREPAID		F.O.B. DESTINATION			Ship Date 4/30/2015		Ship From CPS-MADISON		
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	10	10			B-2404 R N METER YOKE F/5/8 METER W/ 7" RISE & 360 VLV 1Z2121XA0392066417	74.75	EA	747.50	
					STATE SALES TAX - KENTUCKY			44.85	
P.O.#186534 B.U.#345102									
								Invoice Amount	792.35

SERVICE CHARGES BASED ON LEGAL RATE. OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
D-22-0430/21

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE

USABlueBook®

Get the Best Treatment™

Remit To:
 P.O. Box 9004
 Gurnee, IL 60031-9004
 TEL: (847) 689-3000
 FAX: (847) 689-3001
 TOLL FREE: 1-800-493-9876
 F.E.I.N.: 52-2418852

RECEIVED

MAY 11 2015

INVOICE

INVOICE NO.	PAGE NO.
637225	1 of 1
CUSTOMER NO.	DATE
911268	05/05/15

View online at: <http://usabluebook.billtrust.com>
 Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
 167 1 SP 0.480 E0167 I0270 D1328708622 P2580597 0002:0002

SHIP TO: 3

Batch _____
 Doc 683593



UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
 102 WATER PLANT RD
 MIDDLESBORO KY 40965
 USA

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA		
185704	05/05/15	JOP	1%/10 NET 30	KY	475222	01	FXD/PPD	UPS		
USA STOCK NO.	DESCRIPTION			ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
61111	Motor 1/20hp -115V-wired			1	1	0	EA	242.20	EA	242.20
75283	1/2 HP Mixer 1750 RPM Single Prop/32'Shaft/Clamp Mt.			1	1	0	EA	664.95	EA	664.95

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
 Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
907.15	0.00	0.00	56.90	41.26	1,005.31

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook®

Get the Best Treatment™

******IMPORTANT******

Please include this customer #
 on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
637225	911268	05/05/15	1,005.31

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

USABlueBook
 P.O. Box 9004
 Gurnee, IL 60031-9004

INVOICE



4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414) 371-5952

INVOICE NUMBER	DATE
1042258	04/30/15
D-U-N-S 00-606-9710	
NET 30 DAYS	

FED I.D. #39-0143280
 GST# 123746141

Mail all remittances to:

Box 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER: 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK, IL 60662-6108

RECEIVED
 MAY 04 2015

SHIP TO CUSTOMER: 402
 WATER SERVICE CORP OF KENTUCKY
 JAMES LEONARD
 102 WATERPLANK ROAD
 MIDDLESBORO, KY 40965

Batch _____
 Doc 683051

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
184712 BU345102	FREIGHT PREPAID/ADD TO INVOICE	Saia
ORDER DATE	INCO TERMS	TRACKING NUMBER
04/24/15	FCA FACTORY	007904515702
PROPOSAL #	FINAL DESTINATION	WAREHOUSE / ORDER#
	UNITED STATES	MM 182228

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
1	UM1-0001-3977 B25-LL -AC -NN Ordered: 100.000 Shipped: 100.000 5739 KIMBERLY SWINFORD METER MODEL 25 LL (NSF 61-G MTR) METER TYPE MODEL 25 REGISTRATION LOCAL REGISTER METER READING SYSTEM NONE SIZE 5/8" (1/2 x 7 1/2) SPECIAL PART NONE PRODUCTION METHOD STANDARD CERTIFIED OUTPUT NONE CONNECTIONS NONE WASHERS-GASKETS NONE LABEL NONE WATER APPLICATION POTABLE BOTTOM MATERIAL CAST IRON BOTTOM BOLT MATERIAL 430 STAINLESS STEEL BOLTS SEAL BOLT QUANTITY 1 (ONE) THRUST ROLLER PLASTIC TESTING BADGER STANDARD (TS-135) PACKAGING SIX PACK MOUNTING POSITION SIDEWALK READ HOW TO SEAL NONE UNIT OF MEASURE GALLON REGISTRATION FACE STANDARD REGISTER LID / SHROUD PLASTIC SHROUD / PLASTIC LID (BLACK) SHROUD SERIALIZATION NONE	45.1500	4515.00

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>
 Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

ORIGINAL INVOICE

INVOICE



Mail all remittances to:
 Box 88223
 Milwaukee, WI 53288-0223

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414) 371-5952

INVOICE NUMBER	DATE
1042258	04/30/15
D-U-N-S 00-606-9710	
NET 30 DAYS	

FED I.D. #39-0143280
 GST# 123746141

SOLD TO CUSTOMER: 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK, IL 60662-6108

SHIP TO CUSTOMER: 402
 WATER SERVICE CORP OF KENTUCKY
 JAMES LEONARD
 102 WATERPLANK ROAD
 MIDDLESBORO, KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
184712 BU345102	FREIGHT PRÉPAID/ADD TO INVOICE	Saia
ORDER DATE	INCO TERMS	TRACKING NUMBER
04/24/15	FCA FACTORY	007904515702
PROPOSAL #	FINAL DESTINATION	WAREHOUSE / ORDER#
	UNITED STATES	MM 182228

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
	REGISTER LID S/N OUTSIDE YEAR OF MFG 8 DIGIT S/N		
	REGISTER LID S/N INSIDE NONE		
	METER S/N SECONDARY (SID) NONE		
	METER S/N PRIMARY OUTLET YEAR OF MFG 8 DIGIT S/N		
	SEAL SCREW SLOTTED SEAL SCREW		
	PALLETIZING STANDARD		
	Sub Total		4515.00
	Freight		203.48
	Total Tax		283.11
	Total		5001.59

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>
 Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

3008346

HDSUPPLY

WATERWORKS

Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	D874251
INVOICE DATE	5/07/15
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due	\$1,054.49
------------------	-------------------

RECEIVED

MAY 11 2015

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

923 1 MB 0.435 E0454X I0696 D1331196124 P2583154 0001:0001



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:

102 PLANT RD
MIDDLESBORO, KY

Batch _____

Doc 683022

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
5/04/15	5/06/15	PO# 185461	BUS#345102			OUR TRUCK	D874251
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
	Ord by: STEVE VAUGHN						
0807S060K	3/4X60' (K) SOFT COPPER TUBING BID SEQ# 10	180	180		3.8500	FT	693.00
0810S060K	1X60' (K) SOFT COPPER TUBING BID SEQ# 20	60	60		5.0300	FT	301.80

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	994.80

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$1,054.49
					59.69		

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE:	D874251
----------	---------

RECEIVED

APR 24 2015

Batch _____

Doc 681249



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

INVOICE DATE
4/15/2015

RECEIVED

Z2150398
INVOICE NUMBER 2250693-000-000
PAGE 1 of 1

Original Invoice

APR 24 2015

Account No.
220148

SHIP TO: CPS SOMERSET
95 BRIANS WAY

SOLD TO

UTILITIES INC. SRV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062

SOMERSET KY 42501

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Customer Order No.				Terms of Sale			Ship Via		
PREPAID				NET 30			UPS		
Freight				F.O.B. DESTINATION			Ship From		
4/14/2015				CPS-MADISON					
Line No	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	25	15	10		B-2404 R N METER YOKE F/5/8 METER W/ 7" RISE & 360 VLV	74.75	EA	1121.25	
2	50	50			3/4 H-15428 MALE ADPT 1Z2121XA0392066417	12.58	EA	629.00	
								STATE SALES TAX - KENTUCKY	105.02
								Invoice Amount	1,855.27

P.O.#184813
B.u.#345102

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
D-22-0416/21

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE



Be Right™

RECEIVED

APR 20 2015

INVOICE NUMBER 9325999

DATE: 04/10/2015

Page: 1

Batch

TOTAL: \$1,601.01

Doc 678388

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

Have you ordered online?
Order at WWW.HACH.COM

93259992 000468140 00000160101 041015

Sort Seg: 475

Tray: 10

DETACH HERE

Original

SOLD TO



WATER SERVICE CORP OF KENTUCKY
2335 Sanders Rd
Northbrook, IL 60062-6108
United States

SHIP TO

WATER SERVICE CORP OF KENTUCKY
100 E JACKSON ST
CLINTON, KY 42031-1419
United States

Table with invoice details: INVOICE NO, PURCHASE ORDER NUMBER, TERMS, FREIGHT, CARRIER, ACCOUNT, REF. NO.

Remit to:
Hach Company
2207 Collections Center Dr
Chicago, IL 60693
Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

Table with columns: LN#, PRODUCT DESCRIPTION, ITEM NO., QUANTITY, UNIT PRIC, EXT. PRICE

ORDER CONTACT:

GARY MILLS
6062482306

Notes:

Summary table: SUBTOTAL, FREIGHT CHARGES, TAX, INVOICE TOTAL

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE, PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



Other brands from Hach

GRAINGER®

1200 S. WOLF RD
WHEELING, IL 60090-6442
www.grainger.com

RECEIVED

APR 20 2015

ORIGINAL INVOICE

GRAINGER ACCOUNT NUMBER 814884623
INVOICE NUMBER 9717693221
INVOICE DATE 04/16/2015
DUE DATE 05/16/2015
AMOUNT DUE 472.59

Ship to information is listed below
in the description section

3007288

BILL TO
MDG2015 00003057 1 AT 0406

UTILITIES INC
2335 SANDERS RD
NORTHBROOK, IL 60062-6196



PO NUMBER: 184061
CALLER: GARY MILLS
CUSTOMER PHONE: (606) 248-2306
ORDER NUMBER: 1233002771
INCO TERMS: FOB ORIGIN

Batch _____
Doc **677950**

Interested in receiving invoices via email?
Sign up for paperless invoicing at:
www.grainger.com/paperlessinvoicing

THANK YOU!

FEI NUMBER 36-1150280

FOR ANY QUESTIONS ABOUT THIS INVOICE OR ACCOUNT CALL 1-800-472-4643

PO LINE #	ITEM #	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
		The following items were shipped to: UTILITIES INC 102 WATER PLANT RD MIDDLESBORO KY 40965-0000			
	1BLH6	EXHAUST FAN,10 IN,115 V,524 CFM MANUFACTURER # 1BLH6 Delivery # 6289078748 Date shipped: 04/16/2015 Carrier: UPS GROUND No. of pkgs: 0 Wt: 16.44 Trk #: 1Z3018W70305205198	1	458.58	458.58
INVOICE SUB TOTAL					458.58
SHIPPING CHARGE					14.01

These items are sold for domestic consumption. If exported, purchaser assumes full responsibility for compliance with US export controls. Diversion contrary to US law prohibited.

PAYMENT TERMS NET 30 DAYS. PAY THIS INVOICE NO STATEMENT SENT. PAYABLE IN U.S. DOLLARS.

AMOUNT DUE 472.59

PLEASE DETACH THIS PORTION AND RETURN WITH YOUR PAYMENT.

BILL TO:
UTILITIES INC
2335 SANDERS RD
NORTHBROOK, IL 60062-6196

REMIT TO:
GRAINGER
DEPT. 865496251
PALATINE, IL 60038-0001

86549625197176932211000047259100000010001401100000015051604

X

ACCOUNT NUMBER
814884623

DATE
04/16/2015

INVOICE NUMBER
9717693221

AMOUNT DUE
472.59

FOR COMMENTS OR CHANGE OF ADDRESS, ENTER INFORMATION ON REVERSE SIDE.

3030643

RECEIVED

APR 13 2015

Batch _____

Doc 676550

606-337-3339

M.A. BUELL FENCE LLC
P.O. BOX 537
PINEVILLE, KY. 40977

800-582-3671

FED ID 61-1252002

606-269-5222 CELL
606-269-1121 "
606-269-1171 "

m.a.buellfence@andybuell.com.

APRIL 13, 2015

WATER SERVICE CORP. OF KY.

INVOICE NO.
04-011

MIDDLESBORO, KY. 40965

P.O. NO. 183734

REPAIR FENCE AT BEANS FORK TANK SITE DAMAGED BY TREE.

TOTAL PRICE \$461.50

THANKS, WE APPRECIATE THE OPPORTUNITY TO BE OF SERVICE.

SINCERELY,



ANDREW BUELL JR. PLS, PE
PRESIDENT

3006413

American Development Corporation (ADC)
821 William D. Jones Blvd.
P.O. Box 620
Fayetteville TN 37334

RECEIVED

APR 10 2015

Invoice
Invoice Number: 86092
Invoice Date: Apr 8, 2015

Voice: 888-542-8561
Fax: 931-438-2673

Batch _____

Doc 675972

Bill to:

Utilities, Inc.
Attn: Accounts Payable
2335 Sanders Road
Northbrook, IL 60062

Ship to:

Utilities, Inc. (Clinton Water Service)
Business Unit # 345101
414 Short Street
Clinton, KY 42031

Customer ID		Customer PO		Payment Terms	
CLINTON		183439		Net 30 Days	
Sales Rep ID		Shipping Method		Ship Date	Due Date
KY		ADC Truck		4/7/15	5/8/15
Quantity	Line Item ID	Description		Unit Price	Extension
4.00	STEN45	Stenner Model 45 Pump		375.00	1,500.00

Subtotal	1,500.00
Sales Tax	
Total Invoice Amount	1,500.00
Payment Received	
TOTAL	1,500.00

We will add finance charges on invoices more than 30 days overdue.

3007288

1200 S. WOLF RD
WHEELING, IL 60090-6442
www.grainger.com

RECEIVED

APR 08 2015

GRAINGER ACCOUNT NUMBER	814884623
INVOICE NUMBER	9707135472
INVOICE DATE	04/03/2015
DUE DATE	05/03/2015
AMOUNT DUE	502.82

Ship to information is listed below in the description section

BILL TO
MDG2015 00000797 1 AT 0406

UTILITIES INC
2335 SANDERS RD
NORTHBROOK, IL 60062-6196



PO NUMBER: 181025
CALLER: GARY MILLS
CUSTOMER PHONE: (606) 248-2306
ORDER NUMBER: 1231935975
INCO TERMS: FOB ORIGIN

Batch _____

Doc **675771**

Interested in receiving invoices via email?
Sign up for paperless invoicing at:
www.grainger.com/paperlessinvoicing

THANK YOU!

FEI NUMBER 36-1150280

FOR ANY QUESTIONS ABOUT THIS INVOICE OR ACCOUNT **CALL 1-800-472-4643**

PO LINE #	ITEM #	DESCRIPTION	QUANTITY	UNIT PRICE	TOTAL
		The following items were shipped to: GARY MILLS UTILITIES INC GARY MILLS 102 WATER PLANT ROAD MIDDLESBORO KY 40965-0000			
000010	44247989	VACUUM BREAKER, 1/2 IN, FNPT, POLYPROPYLENE CUST PART # FCVB50V THIS ITEM IS NON-CANCELABLE AND NON-RETU MANUFACTURER # FC-PUB-50	2	210.16	420.32

INVOICE SUB TOTAL 420.32
SHIPPING CHARGE 82.50

These items are sold for domestic consumption. If exported, purchaser assumes full responsibility for compliance with US export controls. Diversion contrary to US law prohibited.

PAYMENT TERMS NET 30 DAYS. PAY THIS INVOICE NO STATEMENT SENT. PAYABLE IN U.S. DOLLARS.

AMOUNT DUE 502.82

▲ **PLEASE DETACH THIS PORTION AND RETURN WITH YOUR PAYMENT.** ▲

BILL TO:
UTILITIES INC
2335 SANDERS RD
NORTHBROOK, IL 60062-6196

REMIT TO:
GRAINGER
DEPT. 865496251
PALATINE, IL 60038-0001

865496251970713547210000502821000000010000000100000015050374

X

ACCOUNT NUMBER
814884623

DATE
04/03/2015

INVOICE NUMBER
9707135472

AMOUNT DUE
502.82

3006468

RECEIVED Invoice

APR 02 2015

BNR, INC.
4740 B INTERSTATE DRIVE
CINCINNATI, OH 45246
(513) 860-1600

Invoice Number: 0021660
Invoice Date: 3/25/2015

Order Number: 0028346
Order Date: 3/24/2015
Salesperson: F17
Customer Number: WATE05

Sold To:
UTILITIES, INC.
WATER SERVICE CORP. OF KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062
Confirm To:

Ship To:
WATER SERVICE CORP. OF KY
102 WATER PLANT ROAD
MIDDLESBORO, KY 40965

Batch _____
Doc 674813

Customer P.O.	Ship VIA	F.O.B.	Terms			
182169	01		NET 30			

Orig. Item No.	New Item No.	Unit	Ordered	Shipped	Back Ordered	Price	Amount
AAB5924		EACH	1.00	1.00	0.00	2,031.96	2,031.96
SCR CONTROLLER			Whse: 000				

**REMIT TO: OLDE COURTHOUSE BLDG, SUITE 210
CANFIELD, OH 44406**

Net Invoice: 2,031.96
Less Discount: 0.00
Freight: 25.00
Sales Tax: 121.92
Invoice Total: 2,178.88

RECEIVED

APR 06 2015

Layne Christensen Company

Remit to: 25666 Network Place Chicago, IL 60673-1256

Southeast Region ~ Baton Rouge, LA *** Jackson, MS *** Memphis, TN *** Rayne, LA *** Pensacola, FL
PH: 262-246-4646 ~ FAX: 262-246-4784

INVOICE #: 89071383

SOLD TO: Water Service Corp Of Kentucky
ATTN: Accounts Payable
2335 Sanders Road
Northbrook, IL 60062
Client Phone: 847-498-6440

INVOICE DATE: 04/01/2015

PO#: 183021

LAYNE ORDER#: 35162

CLIENT#: 10570523

Engineer: Ryan McMurry

Additional Customer Notes:

Contact: James Leonard
270-207-0135

TERMS: NET 30 DAYS

Batch _____

Doc 674797

QUANTITY	DESCRIPTION	PRICE	TOTAL
1	LS Labor to pull and install new motor (2 trips).	\$3,920.00	\$3,920.00
1	EA 20HP US Motor	\$2,150.00	\$2,150.00
1	LS Misc. oil, tape, etc.	\$75.00	\$75.00

Invoice Sub Total:	\$6,145.00
Tax:	\$0.00

Invoice Total: \$6,145.00

Layne Christensen Company will institute a late payment charge at a rate of 18% per annum (unless a lower rate is required under applicable law, in which case the lower rate shall apply) for all payments not made on or before the due date. It is the policy of Layne Christensen to preserve all lien and payment bond rights where available. All notifications are sent strictly for this purpose.

Thank you for your business
Layne Christensen is an Equal Opportunity Employer

**** ORIGINAL ****

3008346



WATERWORKS

Local Service, Nationwide

P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

859/253-3464

INVOICE #	D686845
INVOICE DATE	3/26/15
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114
Total Amount Due	\$1,020.55

RECEIVED

MAR 30 2015

Remit To:

HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

385 1 MB 0.435 E0372X I0572 D1284674391 P2499781 0001:0001



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:

102 PLANT RD
MIDDLESBORO, KY

Batch

Doc

673704

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
3/20/15	3/25/15	PO# 182025	BUS# 345102			UPS	D686845
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
	Ord by: EMAIL JAMES LEONARD						
3907747582255	74758-22-55 3/4 CPLG PJ CTSXIP CTSXIPTS 3-PART UNION NO LEAD BID SEQ# 10	10	10		23.4900	EA	234.90
390507H15428N	H15428N 1/2X3/4 ADPT CTSXMIP NO LEAD BID SEQ# 20	10	10		14.3900	EA	143.90
3910H15403N	H15403N 1 CPLG 110 CTSXCTS NO LEAD IN LIEU OF 3910H15403 BID SEQ# 30	10	10		14.7800	EA	147.80
3907H15381N	H15381N 3/4 COMP TEE CTSXCTS NO LEAD BID SEQ# 40	10	10		39.8600	EA	398.60

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	925.20

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$1,020.55
37.58					57.77		

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE:	D686845
----------	---------



INVOICE

JOHNCO

RECEIVED

MAR 23 2015

204 N 19TH STREET
 MIDDLESBORO KY 40965

INVOICE NUMBER	64796
INVOICE DATE	03/19/15
ACCOUNT NUMBER	485730
DEPT NUMBER	

BILLTO ADDRESS		SHIPTO ADDRESS			
UTILITIES, INC. ATTENTION: ACCOUNTS PAYAB 2335 SANDERS ROAD NORTHBROOK IL 60062 606-248-5730		WSCK P.O. BOX 818 MIDDLESBORO KY 40965			
CUSTOMER PURCHASE ORDER	SALESPERSON	TERMS	ROUTE	PAYCODE	ORDER TAKER
JAMES Leonard	HOUSE ACCOUNT			CHARGE	CASH

BU# 345102.1180

ITEM NUMBER	MFG	ITEM DESCRIPTION	UM	ORD QTY	B/O QTY	SHIP QTY	SELL PRICE	EXTEND PRICE
62621	LLR	CHAIR, EXEC, MGR, BNDD	EA	1		1	235.37	235.37
							Batch	
							Doc	671898

James Leonard

Subtotal	235.37
Tax	14.12
Total Due	249.49

3008346

HDSUPPLY

WATERWORKS

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
 LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	D560692
INVOICE DATE	2/23/15
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

RECEIVED

FEB 27 2015

Total Amount Due	\$1,383.25
------------------	-------------------

Remit To:

HD SUPPLY WATERWORKS, LTD.
 PO BOX 277838
 ATLANTA, GA 30384 7838

657 1 MB 0.435 E0161X I0221 D1245165545 P2439179 0001:0001



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Shipped to:

102 PLANT RD
 MIDDLESBORO, KY

Batch _____

Doc 666967

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
2/12/15	2/20/15	PO# 179524	BUS# 345102			UPS	D560692
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
4606B24047N	Ord by: EMAIL STEPHEN VAUGHN B2404N 5/8X7 MTR SETTER NO LEAD D BID SEQ# 10	10	10		97.7600	EA	977.60
3907H14227N	H14227N 5/8X3/4X3/4 MPXCTS CON -NECTOR NO LEAD BID SEQ# 20	20	20		14.2100	EA	284.20

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	1,261.80

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$1,383.25
43.15					78.30		

LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED

INVOICE:	D560692
----------	---------



Be Right™

RECEIVED

JAN 26 2015

INVOICE NUMBER 9198957

DATE: 01/15/2015

Page: 1 Batch

TOTAL: \$1,359.33

Doc 665734

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

Have you ordered online?
Order at WWW.HACH.COM

91989574 000468140 00000135933 011515

Sort Seg: 1243 Tray: 10 DETACH HERE Original

SOLD



WATER SERVICE CORP OF KENTUCKY

2335 Sanders Rd
Northbrook, IL 60062-6108
United States

SHIP TO

WATER SERVICE CORP OF KENTUCKY

100 E JACKSON ST
CLINTON, KY 42031-1419
United States

Table with invoice details: INVOICE NO, PURCHASE ORDER NUMBER, TERMS, FREIGHT, CARRIER, ACCOUNT, REF. NO.

Remit to:
Hach Company
2207 Collections Center Dr
Chicago, IL 60693
Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

Table with columns: LN#, PRODUCT DESCRIPTION, ITEM NO., QUANTITY, UNIT PRIC, EXT. PRICE. Contains 5 line items.

ORDER CONTACT:

SUBTOTAL 1,335.42

TAX 23.91

INVOICE TOTAL 1,359.33

Notes:

*JAMES LEONARD

SERVICE NOTES: SR:4093446. I cleaned and inspected the colorimeter, replaced tubing and stir bar, tested unit operation and accuracy using a certified DR890. Result of the verification was within 5% of CL17 measured reading. As found reading of sample stream was 1.38 before PM service, unit reading 1.43 after service was completed. I also changed out the pinch plates.

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE, PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



Other brands from Hach

Annette Zavilla

From: Annette Zavilla
Sent: Friday, February 20, 2015 3:25 PM
To: 'dom4@hach.com'
Subject: FW: Water Service Corp of Kentucky, Account # 046814
Attachments: 9198957.pdf

Hi Ada,

Payment will be mailed next Friday February 27, 2015.

Annette Zavilla
Accounts Payable
Utilities, Inc.
Tel: 847-897-6489
Fax: 847-498-9596
Email: azavilla@uiwater.com

From: HachLov Domestic 4 [mailto:dom4@hach.com]
Sent: Friday, February 20, 2015 2:50 PM
To: Annette Zavilla
Subject: Water Service Corp of Kentucky, Account # 046814

Hello,

I am checking on the payment status of invoice 9198957. Please advise as soon as possible so I can note your account.

Thank you,
ADA PIOTROWSKI | CREDIT DEPARTMENT
P 970-669-3050 ext 6322 | M 800-227-4224 ext 6322
Hach Company | www.hach.com | dom4@hach.com

Annette Zavilla

From: Stephen R. Vaughn
Sent: Thursday, February 19, 2015 12:31 PM
To: Annette Zavilla
Cc: James Leonard
Subject: RE: Hach Invoice # 9198957
Attachments: COL - Hach - Expires 7-1-2015.pdf

Good Afternoon Annette,

Attached is the current COL for Hach.

Stephen Vaughn
Operations Administrative Assistant
Utilites, Inc.
102 Water Plant Road
Middlesboro, KY 40965
P 606-248-2306
F 606-248-0180
M 606-269-1533
srvaughn@uiwater.com

From: Annette Zavilla
Sent: Thursday, February 19, 2015 11:07 AM
To: Stephen R. Vaughn
Cc: James Leonard
Subject: RE: Hach Invoice # 9198957

Great Thanks

From: Stephen R. Vaughn
Sent: Thursday, February 19, 2015 10:02 AM
To: Annette Zavilla
Cc: James Leonard
Subject: RE: Hach Invoice # 9198957

Annette,

I fixed the PO, and will get a updated COL as soon as I can.

Steve

From: James Leonard
Sent: Thursday, February 19, 2015 10:48 AM
To: Stephen R. Vaughn
Subject: FW: Hach Invoice # 9198957

Annette Zavilla

From: Annette Zavilla
Sent: Thursday, February 19, 2015 9:59 AM
To: Stephen R. Vaughn
Subject: RE: Hach Invoice # 9198957

Sorry Steve I don't have a copy but can I help you in some way on this?

Annette

From: Stephen R. Vaughn
Sent: Thursday, February 19, 2015 9:49 AM
To: Annette Zavilla
Subject: RE: Hach Invoice # 9198957

Hey Annette,

Do you have a copy of the expired COL? I will get an updated one.

Steve

From: James Leonard
Sent: Thursday, February 19, 2015 10:48 AM
To: Stephen R. Vaughn
Subject: FW: Hach Invoice # 9198957

From: Annette Zavilla
Sent: Thursday, February 19, 2015 10:17 AM
To: James Leonard
Subject: Hach Invoice # 9198957

Hey James,

The attached Hach Invoice cannot be paid at this time for 2 reasons:

The Certificate of Liability Insurance expired so the account is on "Hold".

There is a difference in the amount of \$828.67 between this Invoice and PO # 177253 and we are only allowed a \$250.00 variance.

Thanks,
Annette



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
02/19/2015

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER MARSH USA INC. 1050 CONNECTICUT AVENUE, SUITE 700 WASHINGTON, DC 20036-5386 Attn: Danaher.certrequest@marsh.com Fax (212) 948-0503 040108-ALL-7/1-14-15 HACH NO	CONTACT NAME: PHONE (A/C, No, Ext): FAX (A/C, No): E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE NAIC # INSURER A : ACE American Insurance Company 22667 INSURER B : Indemnity Ins Co Of North America 43575 INSURER C : ACE Fire Underwriters Insurance Company 20702 INSURER D : INSURER E : INSURER F :	
INSURED HACH COMPANY 5600 LINDBERGH DRIVE LOVELAND, CO 80538		

COVERAGES **CERTIFICATE NUMBER:** CLE-004218046-01 **REVISION NUMBER:** 4

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR <input checked="" type="checkbox"/> Contractual Liability <input checked="" type="checkbox"/> Broad Form PD GEN'L AGGREGATE LIMIT APPLIES PER: <input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC			HDOG27334118	07/01/2014	07/01/2015	EACH OCCURRENCE \$ 2,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 2,000,000 MED EXP (Any one person) \$ 10,000 PERSONAL & ADV INJURY \$ 2,000,000 GENERAL AGGREGATE \$ 5,000,000 PRODUCTS - COMP/OP AGG \$ 5,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS <input type="checkbox"/> UMBRELLA LIAB <input type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE <input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$			ISAH0882096A	07/01/2014	07/01/2015	COMBINED SINGLE LIMIT (Ea accident) \$ 3,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ EACH OCCURRENCE \$ AGGREGATE \$
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY <input type="checkbox"/> ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below			WLRC4788875A (AOS) WLRC47888773 (AZ, CA, MA) SCFC47888761 (WI)	07/01/2014	07/01/2015	<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER E.L. EACH ACCIDENT \$ 2,000,000 E.L. DISEASE - EA EMPLOYEE \$ 2,000,000 E.L. DISEASE - POLICY LIMIT \$ 2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER WATER SERVICE CORPORATION OF KENTUCKY 100 E. JACKSON ST. CLINTON, KY 42031	CANCELLATION SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. AUTHORIZED REPRESENTATIVE of Marsh USA Inc. Manashi Mukherjee <i>Manashi Mukherjee</i>
---	---

300738

RECEIVED

FEB 17 2015

Layne Christensen

Remit to: 25666 Network Place Chicago, IL 60673-1256

Water Resource Division ~ Louisville, KY - Indianapolis, IN - Middletown, OH

PH: 262-246-4646 ~ FAX: 262-246-4784

Batch _____

INVOICE #: 89069776

Doc 664363

SOLD TO: Utilities, Inc. - Northbrook, IL
ATTN: Accounts Payable
2335 Sanders Road
Northbrook, IL 60062
Client Phone: 606-248--2306

INVOICE DATE: 02/11/2015

PO#: 177833 *345*

LAYNE ORDER#: 34335

CLIENT#: 47852884

TERMS: NET 30 DAYS

QUANTITY	DESCRIPTION	PRICE	TOTAL
DATE COMPLETED: 01/28/2015			
1	EA Furnish one (1) packing gland as per verbal quote.	\$250.00	\$250.00
1	LS Freight	\$46.94	\$46.94

Invoice Sub Total: \$296.94

Tax: \$0.00

Invoice Total: \$296.94

Layne Christensen Company will institute a late payment charge at a rate of 18% per annum (unless a lower rate is required under applicable law, in which case the lower rate shall apply) for all payments not made on or before the due date. It is the policy of Layne Christensen to preserve all lien and payment bond rights where available. All notifications are sent strictly for this purpose.

Thank you for your business
Layne Christensen is an Equal Opportunity Employer

**** Original ****

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED

FEB 09 2015

INVOICE

INVOICE	
6566226	
Invoice Date	Page
2/4/2015 11:18:23	1 of 1
ORDER NUMBER	
1587224	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch _____
Doc 663671

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
178792	Net 30	3/6/2015	3/6/2015	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
2/3/2015 07:56:14	3592794	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID Item Description	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production				

Carrier: UPS GROUND

Tracking #: 1ZX373190343507769

6	6	0		BA13-232W-NL 5/8X3/4 FORD ANGLE BALL VALVE W/L.W. **NO LEAD**	EA	37.8300	226.98
3	3	0		L44-33-NL 3/4 FORD 90 ELL BRASS COUPLING PJ CTS X PJ CTS **NO LEAD**	EA	23.6000	70.80

Total Lines: 2

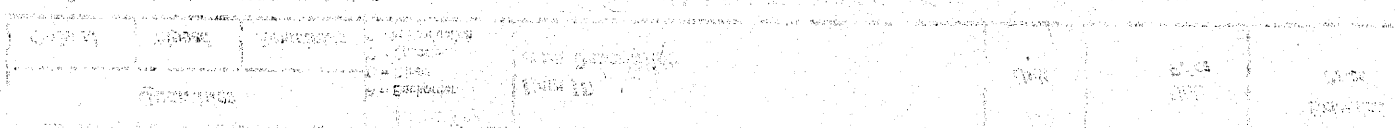
Total Freight In: 0.00

Total Freight Out: 17.24

SUB-TOTAL: 297.78
TOTAL FREIGHT: 17.24
KENTUCKY STATE TAX: 17.87
AMOUNT DUE: 332.89

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards



All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

Annette Zavilla

From: Gary Mills
Sent: Wednesday, January 28, 2015 7:20 AM
To: Annette Zavilla
Subject: Invoice
Attachments: Service Specialties Invoice 1-26-15.pdf; COL - Service Specialties - Expires 3-1-2015.pdf

Hello Annette,
I have attached for your processing an invoice for work we had done on water plant meter.

Thanks,

Gary Mills
Water Service Corporation of Kentucky
102 Water Plant Road
P.O. Box 818
Middlesboro, Ky. 40935
Phone # 606-248-2306
Cell # 606-269-4249
Fax # 606-248-0180



CERTIFICATE OF LIABILITY INSURANCE

SERVI-6

OP ID: J6

DATE (MM/DD/YYYY)

02/28/14

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

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PRODUCER Roeding Group Companies, Inc PO Box 17900 Crestview Hills, KY 41017 Rob Hoenscheid		859-341-0202 859-341-3709	CONTACT NAME: PHONE (A/C, No, Ext): E-MAIL ADDRESS:	FAX (A/C, No):
INSURED SERVICE SPECIALTIES, LLC 315 SALEM AVE. WINCHESTER, KY 40391		INSURER(S) AFFORDING COVERAGE		NAIC #
		INSURER A: WESTFIELD INSURANCE CO.		24112
		INSURER B: Bridgefield Casualty		10335
		INSURER C:		
		INSURER D:		
		INSURER E:		
		INSURER F:		

COVERAGES**CERTIFICATE NUMBER:****REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC			TRA 5887238	03/01/14	03/01/15	EACH OCCURRENCE \$ 1,000,000 DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 500,000 MED EXP (Any one person) \$ 15,000 PERSONAL & ADV INJURY \$ 1,000,000 GENERAL AGGREGATE \$ 2,000,000 PRODUCTS - COMP/OP AGG \$ 2,000,000
A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input type="checkbox"/> HIRED AUTOS <input type="checkbox"/> NON-OWNED AUTOS			TRA 5887238	03/01/14	03/01/15	COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$
A	<input checked="" type="checkbox"/> UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE DED <input checked="" type="checkbox"/> RETENTION \$ 0			TRA 5887238	03/01/14	03/01/15	EACH OCCURRENCE \$ 1,000,000 AGGREGATE \$ 1,000,000
B	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below		N/A	0196-33617	12/05/13	12/05/14	WC STATUTORY LIMITS OTH-ER E.L. EACH ACCIDENT \$ 1,000,000 E.L. DISEASE - EA EMPLOYEE \$ 1,000,000 E.L. DISEASE - POLICY LIMIT \$ 1,000,000
A	Equipment Floater			TRA 5887238	03/01/14	03/01/15	

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

CERTIFICATE HOLDER

WATERSE

WATER SERVICE CORPORATION
OF KY
102 WATER PLANT ROAD
MIDDLESBORO, KY 40965

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

© 1988-2010 ACORD CORPORATION. All rights reserved.

3069726

RECEIVED

DEC 30 2014

Herrick Company, Inc.

1385 Tracy Road
Lawrenceburg, KY 40342
(502) 839-3484
(502) 839-0939 fax

Invoice

Date	Invoice #
12/30/2014	1129

Bill To
Water Service Corporation of KY Attn: James R. Leonard P.O. Box 818 Middlesboro, KY 40965

Batch _____
Doc 654199

Description	Amount
Furnish initial proposals; review preliminary design specifications and prepare Purchase Order WSC-100 to initiate equipment submittals; obtain Performance & Payment bonds for project; obtain insurance coverage (E&O) to adequately cover construction services excluded in general liability policy; preparation of project schedule	
Total Amount Due	25,000.00
<i>P.O. # 176443 B.U. # 345102 C.P. # 2014140</i>	
Total	\$25,000.00

Annette Zavilla

From: James Leonard
Sent: Tuesday, December 30, 2014 1:58 PM
To: Annette Zavilla
Cc: Bruce Haas; Stephen R. Vaughn; Justin P. Kersey; Gary Mills; Donna Herrick
Subject: Herrick Company, Inc. Invoice- 12-30-2014
Attachments: Herrick Company, Inc. Invoice- 12-30-2014.pdf

Hi Annette,

Please process the attached invoice from Herrick Company, Lawrenceburg, KY. This invoice is for Capitol Project # 2014140. (Middlesboro KY Plate Settler project) Business Unit # 345102.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp of KY

3030643

RECEIVED
DEC 31 2014

Batch _____
Doc 654188

606-337-3339

M.A. BUELL FENCE LLC
P.O. BOX 537
PINEVILLE, KY. 40977

800-582-3671

FED ID 61-1252002

606-269-5222 CELL
606-269-1121 "
606-269-1171 "

m.a.buellfence@andybuell.com

DECEMBER 23, 2014

INVOICE#110


WATER SERV. CORP. OF KY.
MIDDLESBORO, KY., 40965

P.O. #175543

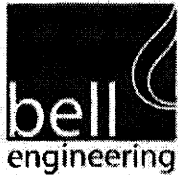
REPAIR FENCE AT PLANT DAMAGED BY TREE.

TOTAL PRICE \$500.00

THANK, WE APPRECIATE THE OPPORTUNITY TO BE OF SERVICE.

SINCERELY

ANDREW BUELL JR. PLS, PE.
PRESIDENT

PO# 175543
Business Unit # 345102



2480 Fortune Drive
 Suite 350
 Lexington, KY 40509

RECEIVED

DEC 30 2014

INVOICE

Phone (859) 278-5412
 Fax (859) 278-2911

In Account With

Date: 12/29/2014

WATER SERVICE CORP OF KENTUCKY
 ATTN: JAMES LEONARD, REGIONAL MANAGER
 102 WATER PLANT RD
 MIDDLESBORO KY 40965

Batch _____
 Doc 653570

Invoice No. 140848

Account No. 614-003

For Engineering Services In Connection With:

Design Build Project
 Additional Services Through Proposal Stage

PO#176298
 BU#345102
 CP#2014140

Lump Sum Fee for Additional Services Through Proposal Stage	\$2,000.00
Percent Complete to Date	<u>100%</u>
Fee Earned to Date	\$2,000.00
Less: Amount Previously Invoiced	<u>0.00</u>
TOTAL AMOUNT DUE THIS INVOICE:	\$2,000.00

Note: Additional services includes changes in scope, revisions due to changes in regulatory approval process, delays and services during out-of-town travel, all beyond the consultant's control.

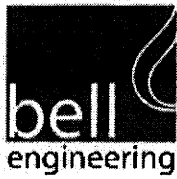
Annette Zavilla

From: James Leonard
Sent: Tuesday, December 30, 2014 7:48 AM
To: Annette Zavilla
Cc: Bruce Haas; Justin P. Kersey; Stephen R. Vaughn; Gary Mills; Pat Sampsell
Subject: Bell Engineering Invoices and Statement- 12-29-14
Attachments: Bell Engineering Invoice- 12-29-14.pdf

Hi Annette,

Please process the attached invoices from Bell Engineering, Lexington KY. This is for engineering work on the Middlesboro KY Approved Capitol Project # 2014140.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp of KY



2480 Fortune Drive
 Suite 350
 Lexington, KY 40509

RECEIVED

DEC 30 2014

INVOICE

Phone (859) 278-5412
 Fax (859) 278-2911

In Account With

Date: 12/29/2014

WATER SERVICE CORP OF KENTUCKY
 ATTN: JAMES LEONARD, REGIONAL MANAGER
 102 WATER PLANT RD
 MIDDLESBORO KY 40965

Batch _____

Doc 653569

Invoice No. 140847

Account No. 614-002

For Engineering Services In Connection With:

Design Build Project

PO#176298
 BU#345102
 CP#2014140

Lump Sum Fee for Design Services Through Proposal Stage	\$13,500.00
Reimbursement for Kentucky State Treasurer Review Fee	<u>800.00</u>
Total Lump Sum Fee	\$14,300.00
Percent Complete to Date	<u>100%</u>
Fee Earned to Date	\$14,300.00
Less: Amount Previously Invoiced	<u>0.00</u>
TOTAL AMOUNT DUE THIS INVOICE:	\$14,300.00

Annette Zavilla

From: James Leonard
Sent: Tuesday, December 30, 2014 7:48 AM
To: Annette Zavilla
Cc: Bruce Haas; Justin P. Kersey; Stephen R. Vaughn; Gary Mills; Pat Sampsell
Subject: Bell Engineering Invoices and Statement- 12-29-14
Attachments: Bell Engineering Invoice- 12-29-14.pdf

Hi Annette,

Please process the attached invoices from Bell Engineering, Lexington KY. This is for engineering work on the Middlesboro KY Approved Capitol Project # 2014140.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp of KY



INVOICE
LAYNE CHRISTENSEN COMPANY

RECEIVED

DEC 19 2014

WATER · MINERAL · ENERGY

S
O Utilities, Inc.
L 2335 Sanders Road
D Northbrook, IL 60062
Attn: Accounts Payable

Invoice No. 89067798
Work Order No. 33421
Invoice Date 11/25/2014
Customer Order No. Verbal
Date Completed 11/11/2014

T
O
S Water Service Corp of KY
H 102 Water Plant Road
I Middlesboro, KY 40965
P
T Attn: James Leonard
O

REMIT TO:
Layne Christensen Company
25666 Network Place
Chicago, IL 60673-1256

Batch _____

Doc 652130

QUANTITY	DESCRIPTION	AMOUNT
	Labor, equipment and material to replace packing gland on Raw Water Pump #1 and replace 3" pipe with cap on 10" discharge line.	
	Labor & Equipment	\$3,651.00
	Material	\$277.00
	1 - 3" thread o let	
	1 - 3" weld o let	
	4 - 3" nipples	
	1 - 3" cap	
	Credit for Labor & Equipment as per discussions with Emily Miesner	-\$1,825.50
	P.O. # 175849	
	B.U.# 345102	
	Net 30 days	
	A service charge of 1-1/2% per month will be added to all past due accounts.	
	TOTAL	\$2,102.50

HDSUPPLY CREDIT MEMO

WATERWORKS

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

BRANCH ADDRESS
 LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	D149966
INVOICE DATE	10/29/14
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114
Total Amount Due	-\$565.25

RECEIVED

NOV 07 2014

Remit To:
 HD SUPPLY WATERWORKS, LTD.
 PO BOX 277838
 ATLANTA, GA 30384 7838

2814 1 AB 0.406 E0070X I0121 D1125818528 P2240323 0001:0001



Shipped to:

CUSTOMER PICK-UP -

Batch _____

Doc 651407



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
10/22/14	10/22/14	CREDIT	D038869			WILL CALL	D149966
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
3707B24265R3N	Reference Invoice No.D038869 B24265R3N 3/4 ANG BMV FIPXMN FIPXSN W/LW 5/8X3/4X3/4 360 LL	15	15		35.5500	EA	-533.25

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	-533.25
Freight	INVOICE TOTAL
	-\$565.25

Freight	Delivery	Handling	Restock	Misc.	Tax
					-32.00

LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED

INVOICE: D149966



WATERWORKS

Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	D052889
INVOICE DATE	10/02/14
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due	\$584.33
------------------	-----------------

RECEIVED

OCT 06 2014

572 1 MB 0.435 E0081X 10116 D1099350971 P2196344 0001:0001



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:

102 PLANT RD
MIDDLESBORO, KY

Batch _____

Doc 651405

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
10/01/14	10/01/14	PO# 16985	345102			UPS	D052889
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
3707B24265R3N	B24265R3N 3/4 ANG BMV FIPXMN	15	15		36.7500	EA	551.25

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	551.25

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$584.33
					33.08		

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE:	D052889
----------	---------



Be Right™

RECEIVED

DEC 16 2014

INVOICE NUMBER 9155984

DATE: 12/11/2014

Page: 1

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

TOTAL: \$455.68

Have you ordered online?
Order at WWW.HACH.COM

91559849 000468140 00000045568 121114

Batch

Sort Seg: 602

Tray: 9

DETACH HERE

Original

Doc 650665

SOLD TO



WATER SERVICE CORP OF KENTUCKY

2335 Sanders Rd
Northbrook, IL 60062-6108
United States

SHIP TO

WATER SERVICE CORP OF KENTUCKY

102 WATER PLANT RD
MIDDLESBORO, KY 40965
United States

Table with invoice details: INVOICE NO, PURCHASE ORDER NUMBER, TERMS, FREIGHT, CARRIER, ACCOUNT, REF. NO.

Remit to:
Hach Company
2207 Collections Center Dr
Chicago, IL 60693
Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

Table with columns: LN#, PRODUCT DESCRIPTION, ITEM NO., QUANTITY, UNIT PRIC, EXT. PRICE

*TRACKING NUMBERS: 1Z8A89V00316953928

ORDER CONTACT:

GARY MILLS
6062482306

Notes:

Summary table: SUBTOTAL, FREIGHT CHARGES, TAX, INVOICE TOTAL

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE, PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



Other brands from Hach



Be Right™

RECEIVED

NOV 24 2014

CREDIT MEMO 2109257

DATE: 11/20/2014

Page: 1

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

TOTAL: \$-241.19

21092572 000468140 00000024119 112014

Have you ordered online?
Order at WWW.HACH.COM

Batch

649765

Sort Seg: 586

Tray: 9

DETACH HERE

Original

Doc

SOLD TO



WATER SERVICE CORP OF KENTUCKY

2335 Sanders Rd
Northbrook, IL 60062-6108
United States

SHIP TO

WATER SERVICE CORP OF KENTUCKY

2335 SANDERS RD
NORTHBROOK, IL 60062
United States

Table with 4 columns: CREDIT NO, PURCHASE ORDER NUMBER, TERMS, FREIGHT, CARRIER, ACCOUNT, REF. NO. Values include 2109257, 170918-RTN, ***CREDIT MEMO***, 046814, 313406123-1.

Remit to:

Hach Company
2207 Collections Center Dr
Chicago, IL 60693
Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

Table with 6 columns: LN#, PRODUCT DESCRIPTION, ITEM NO., QUANTITY, UNIT PRIC, EXT. PRICE. Row 1: 1, HALOGEN LAMP, A23778, -1, 227.00, -227.00

ORDER CONTACT:

GARY MILLS
6062482306

Notes:

Summary table with 2 columns: Description, Amount. Rows: SUBTOTAL (-227.00), TAX (-14.19), CREDIT TOTAL (-241.19)

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE, PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



Other brands from Hach

Annette Zavilla

From: Gary Mills
Sent: Monday, December 08, 2014 12:33 PM
To: Annette Zavilla
Subject: RE: Hach Invoice #'s 9072939 & 9076856 & PO # 170918

Hey Annette, I spoke with Hach this morning and I have this issue resolved. Invoice # 9072939 we shouldn't have paid. It was returned to Hach because of being shipped to the wrong address. The invoice we actually paid was invoice #9076856, which has taxes of \$15.47. This is the right tax amount for the invoice. PO #170918 was for the amount of 272.08, the invoice was for 273.36.

I hope this helps. Let me know if I need to provide any more info.

Have a Good Day,

From: Annette Zavilla
Sent: Friday, December 05, 2014 3:41 PM
To: Gary Mills
Cc: James Leonard
Subject: RE: Hach Invoice #'s 9072939 & 9076856 & PO # 170918

Hi Gary,

Per your message below I received the attached Hach Credit Memo # 2109257 to offset the attached Hach Invoice # 9072939 however they did not credit us enough tax. They charged us \$16.12 tax but only credited us \$14.19 tax. Seems to me that they should have credited us \$16.12 tax to cancel the duplicate Invoice # 9072939. Would you please call your contact at Hach and check this out?

Thanks,
Annette

From: Gary Mills
Sent: Tuesday, October 21, 2014 7:28 AM
To: Annette Zavilla
Subject: RE: Hach Invoice #'s 9072939 & 9076856 & PO # 170918

The last one with address of 102 Water Plant Road, Middlesboro, Ky. 40965.

From: Annette Zavilla
Sent: Tuesday, October 21, 2014 8:17 AM
To: Gary Mills
Cc: James Leonard
Subject: RE: Hach Invoice #'s 9072939 & 9076856 & PO # 170918

Okay which one?

From: Gary Mills
Sent: Tuesday, October 21, 2014 7:06 AM

To: Annette Zavilla

Subject: RE: Hach Invoice #'s 9072939 & 9076856 & PO # 170918

Annette, I only ordered 1 they sent one to the wrong address. We are supposed to get credit on it, so 1 is all we should pay for.

Thanks,

From: Annette Zavilla

Sent: Monday, October 20, 2014 4:31 PM

To: Gary Mills

Cc: James Leonard

Subject: Hach Invoice #'s 9072939 & 9076856 & PO # 170918

Hi Gary,

How many Halogen Lamps did you order and receive because I see only one on PO # 170918 but they are billing us for 2. Do you know why the Tax is different on the 2 attached Invoices?

Thanks,

Annette



Be Right™

RECEIVED

OCT 20 2014

INVOICE NUMBER 9072939

DATE: 10/14/2014

Page: 1

Batch

TOTAL: \$274.01

Doc

649154

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

Have you ordered online?
Order at WWW.HACH.COM

90729393 000468140 00000027401 101414

Sort Seg: 537

Tray: 9

DETACH HERE

Original

SOLD TO



WATER SERVICE CORP OF KENTUCKY
2335 Sanders Rd
Northbrook, IL 60062-6108
United States

SHIP TO

WATER SERVICE CORP OF KENTUCKY
2335 SANDERS RD
NORTHBROOK, IL 60062
United States

Table with invoice details: INVOICE NO, PURCHASE ORDER NUMBER, TERMS, FREIGHT, CARRIER, ACCOUNT, REF. NO.

Remit to:
Hach Company
2207 Collections Center Dr
Chicago, IL 60693
Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

Table with columns: LN#, PRODUCT DESCRIPTION, ITEM NO., QUANTITY, UNIT PRIC, EXT. PRICE

ORDER CONTACT:

GARY MILLS
6062482306

Notes:

Summary table: SUBTOTAL, FREIGHT CHARGES, TAX, INVOICE TOTAL

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE, PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



Other brands from Hach

3008346

HDSUPPLY CREDIT MEMO

WATERWORKS

Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

BRANCH ADDRESS
LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	D288928
INVOICE DATE	11/25/14
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due	-\$19.08
------------------	-----------------

RECEIVED
DEC 02 2014

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

895 1 MB 0.435 E0406X I0582 D1158494549 P2284321 0001:0001



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:
CUSTOMER PICK-UP -

Batch _____
Doc 649264

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
11/21/14	11/24/14	D038869 <i>345102.1130</i>	D038869			WILL CALL	D288928

Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
	3706B24265R3N B24265R3N 5/8X3/4 ANG 18.00 DUE FOR S/O D038869 FOR CREDIT MEMO D149966						

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	.00

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	
				-18.00	-1.08		-\$19.08

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE:	D288928
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HDSUPPLY®

WATERWORKS

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
 LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	D226123
INVOICE DATE	11/18/14
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114
Total Amount Due	\$389.55

RECEIVED

NOV 21 2014

Remit To:
 HD SUPPLY WATERWORKS, LTD.
 PO BOX 277838
 ATLANTA, GA 30384 7838

751 1 MB 0.435 E0254X I0393 D1149543563 P2271380 0001:0001



Shipped to:

102 PLANT RD
 MIDDLESBORO, KY

Batch _____

Doc 649263



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
11/07/14	11/17/14	PO# 172778	BUS# 345102			OUR TRUCK	D226123
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
3706B24265R3N	B24265R3N 5/8X3/4 ANG BMV FIPX DIAPHRAM F/ WARREN RUPP BID SEQ# 10	10	10		36.7500	EA	367.50

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	367.50
Freight	INVOICE TOTAL
	\$389.55

Delivery	Handling	Restock	Misc.	Tax
				22.05

LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED

INVOICE: D226123

3068613



RECEIVED

NOV 24 2014

Page: 1

Invoice Number:

23814

Order Number:

Invoice Date:

Nov 13, 2014

Chemtrac, Inc.
6991 Peachtree Industrial Blvd
Bldg 600
Norcross, GA 30092
USA

Voice: 770-449-6233 Fax: 770-447-0889

Invoice

Bill To: WATER SERVICES CORP OF KY
ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship to: WATER SERVICES CORP. OF KY
ATTN: GARY MILLS
102 WATER PLANT ROAD
MIDDLESBORO, KY 40965

Batch _____
Doc 645983

Customer ID	Customer PO	Payment Terms
WATERSER	172626	Net 30 Days
Sales Rep ID	Shipping Method	Ship Date
	UPS	11/13/14

Quantity	Item	Description	Unit Price	Extension
		*** BUSINESS UNIT# 345101 ***		
1.00	8601	DURA-TRAC PROBE CARTRIDGE	495.00	495.00
1.00	1705	DELTRIN PISTON - CUT DOWN	125.00	125.00

Subtotal	620.00
Freight	12.00
Sales Tax	
Total Invoice Amount	632.00
TOTAL	632.00

3009296

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS SUPPLIES
SIGN & SAFETY SUPPLIES

P.O. Drawer 459 - 1105 State Route 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836

RECEIVED

NOV 17 2014

INVOICE

INVOICE	
6558275	
Invoice Date	Page
11/11/2014 11:10:51	1 of 1
ORDER NUMBER	
1579253	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch _____
Doc 644432

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
172903 <i>345</i>	Net 30	12/11/2014	12/11/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
11/10/2014 09:24:55	3584365	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID Item Description	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production				

Carrier: UPS GROUND

Tracking #: 1ZX373190344535781

4	4	0		313-045007 4X3/4CC DOUBLE STRAP SADDLE FOR PVC OR 3 CI	EA	29.5100	118.04
1	1	0		APB14125 14" X 1" TIGER TOOTH PREMIUM DIAMOND BLADE. FOR STEEL PIPE, CONCRETE PIPE, DUCTILE IRON, CAST IRON, PVC, & HDPE	EA	209.0000	209.00

Total Lines: 2

SUB-TOTAL: 327.04

Total Freight In: 0.00

Total Freight Out: 28.08

TOTAL FREIGHT: 28.08

KENTUCKY STATE TAX: 19.62

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

AMOUNT DUE: 374.74

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

3005160

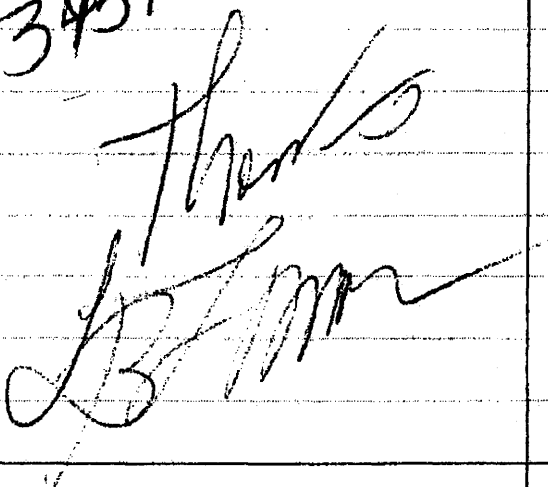
LEMONS ENTERPRISES

1265 State Route 123 E.
CLINTON, KENTUCKY 42031
(270) 653-8235 or 3422

RECEIVED

OCT 7 8 2014

1½% Service Charge added after 30 days

CUSTOMER'S ORDER NO.		PHONE		DATE: 10-28-14		
NAME: W. S. C. K.						
ADDRESS:						
Batch: _____						
Doc: 639631						
SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RETD.	PAID OUT
QTY.	DESCRIPTION				PRICE	AMOUNT
	Flag in labor					360.00
	Cut low place in road Repair with 6" Concrete 4000 lb					
	Labor, Equipment & Material					1,710.00
P.O.# 171877 Bu.# 345101 Thanks 						
RECEIVED BY					TAX	
					TOTAL	2,070.00

All claims and returned goods MUST be accompanied by this bill!

6937

Thank You

Annette Zavilla

From: James Leonard
Sent: Tuesday, October 28, 2014 7:08 AM
To: Annette Zavilla
Cc: John Turner; Stephen R. Vaughn
Subject: Invoice- Lemons Enterprises- 10-28-14
Attachments: Invoice for Lemons Enterprises 10-28-2014.pdf

Morning Annette,

Please process the attached invoice for Lemons Enterprises, Clinton KY.

Thank you,
James Leonard, WSCK



Be Right™

RECEIVED

OCT 20 2014

INVOICE NUMBER 9076856

DATE: 10/16/2014

Page: 1 Batch

TOTAL: \$273.38 Doc

638170

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

Have you ordered online?
Order at WWW.HACH.COM

90768565 000468140 00000027336 101614

Sort Seg: 543

Tray: 8

DETACH HERE

Original

SOLD TO



WATER SERVICE CORP OF KENTUCKY

2335 Sanders Rd
Northbrook, IL 60062-6108
United States

SHIPTO

WATER SERVICE CORP OF KENTUCKY

102 WATER PLANT RD
MIDDLESBORO, KY 40965
United States

Table with invoice details: INVOICE NO, PURCHASE ORDER NUMBER, TERMS, FREIGHT, CARRIER, ACCOUNT, REF. NO.

Remit to:
Hach Company
2207 Collections Center Dr
Chicago, IL 60693
Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

Table with columns: LN#, PRODUCT DESCRIPTION, ITEM NO., QUANTITY, UNIT PRIC, EXT. PRICE

ORDER CONTACT:

GARY MILLS
6062482306

Summary table: SUBTOTAL, FREIGHT CHARGES, TAX, INVOICE TOTAL

Notes:

*THIS ORDER IS REPLACEMENT FOR ORDER SENT TO INCORRECT ADDRESS. SHOOVER 101514

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE, PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



Environmental Test Systems



Hydromet



Flow Products & Services



A Hach Company Brand

Other brands from Hach

USABlueBook®

Get the Best Treatment™

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004

TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

RECEIVED

SEP 26 2014

Notice of Past Due Account

CUSTOMER NO.	DATE
911268	09/22/2014

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

Page 1 of 1

BILL TO:

718 1 AT 0.406 E0154X I0260 D1086503795 P2174561 0001:0001



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

The invoice(s) listed are 42 days or more past due. To prevent further action remit payment immediately.

Batch

Doc

638156

INVOICE	DATE	REFERENCE #	AMOUNT
364836	06/06/2014	159469	973.30
373084	06/17/2014	606-248-2306	-832.84
421872	08/12/2014	166202	-2.16
421892	08/12/2014	345102	-76

THANK YOU

Accounts Receivable
TOLL FREE 1-800-493-9876
email: ar@usabluebook.com

TOTAL BALANCE	TOTAL PAST DUE
589.48	137.54

A 1.5% MONTHLY FINANCE CHARGE has been applied on all invoices 30 days or more past due and is indicated by "SC". If you have contacted us with status of invoice(s), disregard this notice.

REMIT TO:
USABlueBook
PO Box 9004
Gurnee, IL 60031-9004

USABlueBook
Get the Best Treatment™

USABlueBook®

Get the Best Treatment™

INVOICE

RECEIVED

AUG 21 2014

INVOICE NO.	PAGE NO.
421892	1 of 1
CUSTOMER NO.	DATE
911268	08/12/14

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
1366 1 MB 0.435 E0336 I0378 D1050808669 P2116396 0002:0002

SHIP TO: 3



Batch _____



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Doc 626040

Attention: 0005 STEVE VAUGHN

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA	
345102, <u>6285</u>	08/12/14	LAS	1%/10 NET 30	KY	922331	01	PREPAID	UPS	
USA STOCK NO.	DESCRIPTION		ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
37379	3/4 Inch Stand Brass Nipple Pack Close to 6 Inch		2	2	0	EA	37.95	EA	75.90

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
75.90	0.00	0.00	5.81	20.99	102.70

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook®

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
421892	911268	08/12/14	102.70

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

INVOICE DATE
10/07/2014

PO# 170103

INVOICE NUMBER
2242380-000-000

RECEIVED
OCT 14 2014

PAGE
1 OF 1

3000307

Original Invoice

Account No.
220148

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

NORTHBROOK IL 60062

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Batch _____

Doc *636247*

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062

Customer Order No.				Terms of Sale			Ship Via		
PO# 170103 <i>345</i>				NET 30			OUR TRUCK 5831		
Freight		F.O.B.		Ship Date		Ship From			
PREPAID		SHIPPING POINT		10/03/2014		CPS-SOMERSET			
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	56	56		235190	LC225 CI LID W/CI RDR	18.60	EA	1041.60	
					PO# 170103 BU# 345102				
					STATE SALES TAX - ILLINOIS			65.10	
							Invoice Amount	1,106.70	

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
S-22-1008/22

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE

HD SUPPLY

WATERWORKS

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
 LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	D038869
INVOICE DATE	10/01/14
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due	\$610.98
------------------	-----------------

RECEIVED

OCT 06 2014

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

4554 1 MB 0.435 E0217X I0367 D1098072035 P2193651 0001:0001



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Shipped to:

102 PLANT RD
 MIDDLESBORO, KY

Batch _____
 Doc **635967**

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
9/29/14	9/30/14	PO# 169815	BUS# 345102			UPS	D038869
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
3706B24265R3N	B24265R3N 5/8X3/4 ANG BMV FIPX BID SEQ# 10	15	15		36.7500	EA	551.25

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	551.25

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$610.98
25.15					34.58		

LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED

INVOICE:	D038869
----------	---------

3009296

RECEIVED

OCT 09 2014

INVOICE

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE	
6554296	
Invoice Date	Page
10/6/2014 13:32:34	1 of 2
ORDER NUMBER	
1574279	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch

Doc

635794

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
169820	Net 30	11/5/2014	11/5/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
9/29/2014 11:05:39	3579335	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: SALESMEN

Tracking #:

1	1	0		LA104-33S-NL 3/4 FORD 45 CORP STOP COUPLING FEMALE COUPLING THREAD SWIVEL X PJCTS **NO LEAD**	EA	23.0300	23.03
6	6	0		B44-233W-NL 3/4 FORD BALL VALVE PJCTS X PJCTS W/L.W. **NO LEAD**	EA	43.0800	258.48
4	4	0		C44-33-NL 3/4 FORD BRASS COUPLING PJCTS X PJCTS **NO LEAD**	EA	18.2700	73.08
4	4	0		C38-23-2-5-NL 3/4 FORD METER COUPLING MC X MIPT 2.5" LONG **NO LEAD**	EA	9.7500	39.00
4	4	0		C14-33-NL 3/4 FORD FEMALE ADAPTER FIPT X PJCTS **NO LEAD**	EA	15.7700	63.08
4	4	0		L44-33-NL 3/4 FORD 90 ELL BRASS COUPLING PJCTS X PJCTS **NO LEAD**	EA	23.6000	94.40
500	500	0		TW-14B-500 14GAX500 TRACER WIRE BLUE	FT	0.1200	60.00
6	6	0		BA13-232W-NL 5/8X3/4 FORD ANGLE BALL VALVE	EA	37.8300	226.98

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

*** REPRINT ***

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
 SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
 Atwood, TN 38220
 (731)662-7193 or (800)238-3836
 Fax: (731)662-7219

INVOICE

INVOICE	
6554296	
Invoice Date	Page
10/6/2014 13:32:34	2 of 2
ORDER NUMBER	
1574279	

Quantities			Status Key B = Backorder D = Direct C = Canceled P = In Production	Item ID Item Description	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining					
				W/L.W. **NO LEAD**			
3	3	0		B43-232W-NL 5/8X3/4 FORD BALL VALVE PJCTS X MC	EA	45.0500	135.15
				W/L.W. **NO LEAD**			

Total Lines: 9

SUB-TOTAL: 973.20
KENTUCKY STATE TAX: 58.38
AMOUNT DUE: 1,031.58

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

*** REPRINT ***

3030643

RECEIVED

OCT 06 2014

606-337-3339

M.A. BUELL FENCE LLC
P.O. BOX 537
PINEVILLE, KY. 40977

800-582-3671

FED ID 61-1252002

606-269-5222 CELL
606-269-1121 "
606-269-1171 "

m.a.buellfence@andybuell.com

OCTOBER 06, 2014

MR. GARY MILLS
KY-AMERICAN WATER CO.
MIDDLESBORO, KY. 40965

P.O.# 169085

REPAIR FENCE AT PLANT DAMAGED BY TREE.

Batch _____

Doc 633636

TOTAL PRICE \$675.00

THANKS, WE APPRECIATE THE OPPORTUNITY TO BE OF SERVICE.

SINCERELY,



ANDREW BUELL JR. PLS, PE.
PRESIDENT

PO# 169085
Business Unit# 345102

3006618



9030 MONROE ROAD
HOUSTON, TEXAS 77061-5229
(713) 844-1300
(713) 844-1309 FAX

INVOICE DATE	INVOICE NUMBER	PAGE
09/18/14	PB228146	1 of 1

Customer	Your Authorization / P.O.#	Date Shipped	Terms
794300	168984	09/18/14	NET 30

BILL TO:
794300
WATER SERVICE CORPORATION
OF KENTUCKY
100 E JACKSON ST.
P.O. BOX 178
CLINTON KY 42031

RECEIVED
OCT 02 2014

SHIP TO:
WATER SERVICE CORPORATION
OF KENTUCKY
100 E JACKSON ST.
ATTN: STEVEN V. [redacted]
CLINTON KY 42031

Batch
Doc 632894

Heath Order No	Ship Via	Shipping Document
266098	UPS 2 DAY AIR 10:30 AM DEL	1

Line No	Stock Number and Description	Qty Ord	Qty Shipped	Qty B.O.	Unit Price	Total Amount
1	Shipper Waybill/Tracking #: 1Z7263660760249484 2911352 HEADSET, AQUASCOPE P.O.#168984 B.U.#345101	1	1 EA	0	275.0000	275.00

UNPAID BALANCES SUBJECT TO 1.5% PER MONTH SERVICE CHARGE	SUBTOTAL	275.00
REMIT TO: HEATH CONSULTANTS INCORPORATED 9030 MONROE ROAD HOUSTON, TX 77061-5229	TAX	19.45
	SHIPPING/INS	49.17
	AMOUNT DUE	343.62

FEDERAL E.I. 704-2141731

Please reference Invoice Number PB228146 on your payment.

Annette Zavilla

From: Stephen R. Vaughn
Sent: Thursday, October 02, 2014 10:07 AM
To: Annette Zavilla
Cc: James Leonard; John Turner
Subject: Heath Consultants Invoice
Attachments: Heath Consultants Invoice.pdf

Good Morning Annette,

Attached is an invoice for Heath Consultants.

Thank you,

Stephen Vaughn
Operations Administrative Assistant
Utilites, Inc.
102 Water Plant Road
Middlesboro, KY 40965
P 606-248-2306
F 606-248-0180
M 606-269-1533
srvaughn@uiwater.com

HDSUPPLY

WATERWORKS

Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

RECEIVED

SEP 30 2014

INVOICE #	C922274
INVOICE DATE	9/26/14
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114
Total Amount Due	\$953.95

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

1910 1 MB 0.435 E0343X I0514 D1091485522 P2181378 0001:0002



Shipped to:

102 PLANT RD
MIDDLESBORO, KY

Batch _____

Doc 631887



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
9/04/14	9/24/14	PO# 168008	B.U.# 345102			OUR TRUCK	C922274
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
0807S060K	3/4X60' (K) SOFT COPPER TUBING BID SEQ# 10	120	120		3.6200	FT	434.40
4606B24047N	B2404N 5/8X7 MTR SETTER NO LEA BID SEQ# 20	10		10	81.7600	EA	.00
3907H14227N	H14227N 5/8X3/4X3/4 MPXCTS CON BID SEQ# 30	20	20		14.2100	EA	284.20
3907H15403N	H15403N 3/4 CPLG 110 CTSXCTS BID SEQ# 40	5	5		17.3400	EA	86.70
3910H15403N	H15403N 1 CPLG 110 CTSXCTS BID SEQ# 50	5	5		18.9300	EA	94.65

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	899.95

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$953.95
					54.00		

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE: C922274

3008346

HDSUPPLY

WATERWORKS

Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	D018330
INVOICE DATE	9/26/14
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due	\$1,036.26
-------------------------	-------------------

RECEIVED
SEP 30 2014

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

1910 1 MB 0.435 E0343 I0515 D1091485524 P2181378 0002:0002



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:
102 PLANT RD
MIDDLESBORO, KY

Backordered from:
9/26/14 C922274

Batch _____
Doc 631888

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
9/04/14	9/24/14	PO# 168008	B.U.# 345102			UPS	D018330
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
4606B24047N	B2404N 5/8X7 MTR SETTER NO LEA BID SEQ# 20	10	10		97.7600	EA	977.60

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	977.60

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$1,036.26
					58.66		

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE:	D018330
-----------------	---------

3005160

LEMONS ENTERPRISES

1265 State Route 123 E.
CLINTON, KENTUCKY 42031
(270) 653-8235 or 3422

RECEIVED

SEP 18 2014

1 1/2% Service Charge added after 30 days

CUSTOMER'S ORDER NO.		PHONE		DATE <i>9-18-14</i>		
NAME <i>W.S.E.K.</i>						
ADDRESS					Batch	
					Doc <i>630095</i>	
SOLD BY	CASH	G.O.D.	CHARGE	ON ACCT.	MOSE. RETD.	PAID OUT
QTY.		DESCRIPTION			PRICE	AMOUNT
		<i>Concrete 2 places on Hwy 58 W.</i>			<i>1,470</i>	<i>00</i>
<i>Thank You</i>						
<i>[Signature]</i>						
RECEIVED BY					TAX	
					TOTAL	<i>1470 00</i>

All claims and returned goods MUST be accompanied by this bill.

6924

Thank You

P.O. # 169074
B.u. # 345101

Annette Zavilla

From: James Leonard
Sent: Thursday, September 18, 2014 12:23 PM
To: Annette Zavilla
Cc: John Turner; Stephen R. Vaughn
Subject: Lemons Enterprises Invoice # 6924
Attachments: Lemons Enterprises invoice # 6924- 9-18-14.pdf

Hi Annette,

Please process the attached invoice for Lemons Enterprises, Clinton, KY.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp of KY

RECEIVED Invoice

SEP 22 2014

BNR, INC.
4740 B INTERSTATE DRIVE
CINCINNATI, OH 45246
(513) 860-1600

Invoice Number: 0021045
Invoice Date: 9/12/2014

Order Number: 0027611
Order Date: 9/5/2014
Salesperson: F76
Customer Number: WATE05

Sold To:
WATER SERVICE CORP. OF KY
102 WATER PLANT ROAD
P.O. BOX 818
MIDDLESBORO, KY 409653
Confirm To:

Ship To:
WATER SERVICE CORP. OF KY
102 WATER PLANT ROAD
MIDDLESBORO, KY 40965

Batch _____
Doc 630088

Customer P.O. 168107 Ship VIA 01 F.O.B. Terms NET 30

Orig. Item No.	New Item No.	Unit	Ordered	Shipped	Back Ordered	Price	Amount
P49938	W2T385198	EACH	1.00	1.00	0.00	213.21	213.21
BLOCK. SLIDE			Whse: 000				
P49871	W2T384582	EACH	1.00	1.00	0.00	127.72	127.72
ECCENTRIC..188.BZ			Whse: 000				
P42854	W2T383464	EACH	1.00	1.00	0.00	1.55	1.55
DOW PIN			Whse: 000				
P52699	W2T384296	EACH	1.00	1.00	0.00	1.03	1.03
PIN.DOWEL..25*1.75.ALYST			Whse: 000				
G1269	W3T73911	EACH	1.00	0.00	0.00	728.94	0.00
SCREW DRIVE			Whse: 000				

PO# 168107
Business Unit# 345102

Net Invoice: 343.51
Less Discount: 0.00
Freight: 12.68
Sales Tax: 20.61
Invoice Total: 376.80

**REMIT TO: OLDE COURTHOUSE BLDG, SUITE 210
CANFIELD, OH 44406**

Annette Zavilla

From: Gary Mills
Sent: Monday, September 22, 2014 8:27 AM
To: Annette Zavilla
Cc: Stephen R. Vaughn; James Leonard
Subject: Invoice
Attachments: BNR Invoice 9-22-14.pdf

Hello Annette,

Attached are a couple invoices for parts to repair our Lime feeder. I made one scan since they are for one vendor. Part of the order was shipped before the other due to the vendor not having some of the parts on the shelf. Could you Please process?

Thanks,

Gary Mills
Water Service Corporation of Kentucky
102 Water Plant Road
P.O. Box 818
Middlesboro, Ky. 40935
Phone # 606-248-2306
Cell # 606-269-4249
Fax # 606-248-0180

3006468

RECEIVED

Invoice

SEP 22 2014

BNR, INC.
4740 B INTERSTATE DRIVE
CINCINNATI, OH 45246
(513) 860-1600

Invoice Number: 0021055
Invoice Date: 9/16/2014

Order Number: 0027655
Order Date: 9/16/2014
Salesperson: F76
Customer Number: WATE05

Sold To:
WATER SERVICE CORP. OF KY
102 WATER PLANT ROAD
P.O. BOX 818
MIDDLESBORO, KY 40965
Confirm To:

Ship To:
WATER SERVICE CORP. OF KY
102 WATER PLANT ROAD
MIDDLESBORO, KY 40965

Batch _____
Doc 630089

Customer P.O.	Ship VIA	F.O.B.	Terms				
168107	01		NET 30				
Orig. Item No.	New Item No.	Unit	Ordered	Shipped	Back Ordered	Price	Amount
G1269	W3T73911	EACH	1.00	1.00	0.00	728.94	728.94
SCREW DRIVE			Whse: 000				

PO# 168107
Business Unit # 345102

REMIT TO: OLDE COURTHOUSE BLDG, SUITE 210
CANFIELD, OH 44406

Net Invoice: 728.94
Less Discount: 0.00
Freight: 12.50
Sales Tax: 0.00
Invoice Total: 741.44

Annette Zavilla

From: Gary Mills
Sent: Monday, September 22, 2014 8:27 AM
To: Annette Zavilla
Cc: Stephen R. Vaughn; James Leonard
Subject: Invoice
Attachments: BNR Invoice 9-22-14.pdf

Hello Annette,

Attached are a couple invoices for parts to repair our Lime feeder. I made one scan since they are for one vendor. Part of the order was shipped before the other due to the vendor not having some of the parts on the shelf. Could you Please process?

Thanks,

Gary Mills
Water Service Corporation of Kentucky
102 Water Plant Road
P.O. Box 818
Middlesboro, Ky. 40935
Phone # 606-248-2306
Cell # 606-269-4249
Fax # 606-248-0180

3006637

RECEIVED
SEP 11 2014

Invoice



3495 State Route 45 S
Mayfield, KY 42066
270-247-9338

Date	Invoice #
9/10/2014	12261

Bill To
UTILITIES, INC. ATT: ACCOUNTS PAYABLE 2335 SANDERS ROAD NORTHBROOK, IL 60062

Batch _____
Doc 627933

Project	Date of Service	P.O. No.	Terms	Due Date
	9/10/2014		Net 30	10/10/2014

Quantity	Description	Rate	Amount
	Flagging Traffic- 8.5 hrs.	552.50	552.50
<p><i>P.O.# 168481</i> <i>B.C.# 345101</i></p>			

Payments not received by due date will be subject to 2.0% or \$5.00 finance charge (whichever is greater) unless payment arrangements are made. Thank you.

Total **\$552.50**

Annette Zavilla

From: James Leonard
Sent: Thursday, September 11, 2014 8:18 AM
To: Annette Zavilla
Cc: Champion Plumbing (championplumbing@mewsbb.com); John Turner; Stephen R. Vaughn
Subject: Champion Plumbing Invoice # 12261- 9-11-14
Attachments: Champion Plumbing invoice # 12261- 9-11-14.pdf

Morning Annette,

Please process the attached invoice for Champion Plumbing, Mayfield, KY.

Thank you,
James Leonard, WSCK

RECEIVED

SEP 09 2014

627593

Register



North 15th Street
Middlesboro, KY 40965

Phone 368335
248-1495

COMPLETE LINE OF FASTENERS, AUTOMOTIVE & SMALL ENGINE PARTS

NAME		W S C K					DATE		8/18/14	
ADDRESS							P.O. #		166725	
CASH	CHARGE	RET'D. MOSE.	RETAIL	WHOLESALE	CODE	SALESMAN				
						W				
COST	REBATE	QTY.	PART NO.	DESCRIPTION	LIST	NET	AMOUNT			
		1	FC9012	ST.W			32900			
				296597489						
<h1>Thank You!</h1>										
<i>[Signature]</i>										

NO REFUND WITHOUT THIS INVOICE

RECEIVED BY

TAX	1924
TOTAL	34824

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
 SIGNS & SAFETY DIVISION
 P.O. Drawer 459—1105 Hwy 77
 Atwood, TN 38220
 (731)862-7193 or (800)238-3836
 Fax: (731)862-7219

RECEIVED

SEP 02 2014

INVOICE

INVOICE	
6550125	
Invoice Date	Page
8/29/2014 09:26:51	1 of 1
ORDER NUMBER	
1564148	

Bill To:
 WATER SERVICE CORP OF KENTUCKY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS ROAD
 NORTHBROOK, IL 60062

Ship To:
 WATER SERVICE CORP OF KENTUCKY
 100 EAST JACKSON ST.
 NO TRUCK CHARGE
 CLINTON, KY 42031

Batch _____
 Doc 625803

Customer ID: 1351

PO Number		Term Description	Net Due Date	Disc Due Date	Discount Amount		
163314		Net 30	9/28/2014	9/28/2014	0.00		
Order Date	Pick Ticket No	Primary Salesrep Name		Taker			
7/7/2014 07:16:44	3573948	Jeff Wallace		NBRYANT			
Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B - Backorder D - Direct C - Canceled P - in Production	Item Description			
Carrier: SALESMEN			Tracking #:				
12	12	0		93210142 1 1/2 EXTRA LONG LOCKSEAL STUD	EA	2.5000	30.00

Total Lines: 1

SUB-TOTAL: 30.00
KENTUCKY STATE TAX: 1.80
AMOUNT DUE: 31.80

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993
 To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

USABlueBook[®]

Get the Best Treatment™

Remit To:
 P.O. Box 9004
 Gurnee, IL 60031-9004
 TEL: (847) 689-3000
 FAX: (847) 689-3001
 TOLL FREE: 1-800-493-9876
 F.E.I.N.: 52-2418852



RECEIVED

AUG 21 2014

INVOICE

INVOICE NO.	PAGE NO.
421872	1 of 1
CUSTOMER NO.	DATE
911268	08/12/14

View online at: <http://usabluebook.billtrust.com>
 Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
 1366 1 MB 0.435 E0336X I0377 D1050808620 P2116396 0001:0002

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
 102 WATER PLANT RD
 MIDDLESBORO KY 40965
 USA

Batch _____

Doc 624667

Attention: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
166202	08/12/14	SAJ	1%/10 NET 30	KY	922299	01	FXD/PPD	UPS
USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
19528	3/4" AWWA/CC No Lead Brass Corp Stop x 3/8" CPVC Quill	1	1	0	EA	215.60	EA	215.60

THANK YOU for your business!
 1.5% MONTHLY FINANCE CHARGE
 ON AMOUNTS 30 DAYS PAST DUE
 Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
215.60	0.00	0.00	14.01	17.92	247.53

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook[®]

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
 on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
421872	911268	08/12/14	247.53

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

3009296

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED

AUG 21 2014

INVOICE

INVOICE	
6548379	
Invoice Date	Page
8/18/2014 09:38:26	1 of 1
ORDER NUMBER	
1564148	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch _____

Doc 624196

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
163314	Net 30	9/17/2014	9/17/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
7/7/2014 07:16:44	3573134	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: SALESMEN

Tracking #:

1	1	0		TUBE-FGG TUBE FOOD GRADE GREASE	EA	11.4500	11.45
5	2	0		C32 TYPE C FORD RING WITH 11 1/2 LID W/LOCK TO FIT 18TILE LOCK"	EA	63.4500	126.90

Total Lines: 2

SUB-TOTAL: 138.35
KENTUCKY STATE TAX: 8.30

AMOUNT DUE: 146.65

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

Annette Zavilla

From: James Leonard
Sent: Monday, August 25, 2014 9:47 AM
To: Annette Zavilla
Cc: Stephen R. Vaughn; Gary Mills
Subject: L&M Electrical Invoice 8-25-14
Attachments: L&M Electrical Invoice # 202.pdf

Hi Annette,

Please process the attached invoice for L&M Electrical.

The P.O. has been receipted.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp of KY

USABlueBook®

Get the Best Treatment™

RECEIVED

INVOICE

AUG 15 2014

INVOICE NO.	PAGE NO.
417509	1 of 1
CUSTOMER NO.	DATE
911268	08/06/14

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
733 1 MB 0.435 E0240X I0308 D1046118001 P2108899 0001:0001

SHIP TO: 2



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INCORPORATED
100 E JACKSON
CLINTON KY 42031
USA

Batch _____
Doc 623196

Attention: 0005 STEVE VAUGHN

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
165854 BU345101	08/06/14	CRJ	1%/10 NET 30	KY	919517	01	FXD/PPD	UPS
USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
32125	Chlorine Pocket Colorimeter II 0-8 mg/L Hach 5870000 IN STOCK	1	1	0	EA	379.05	EA	379.05
32123	Secondary Standards Chlorine Spec Check Hach (2635300) IN STOCK	1	1	0	EA	146.30	EA	146.30

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
525.35	0.00	0.00	32.85	22.21	580.41

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook®

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
417509	911268	08/06/14	580.41

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

UTILITIES INCORPORATED
100 E JACKSON
CLINTON KY 42031
USA



RECEIVED

AUG 14 2014

INVOICE

Runco Office Supply
 1655 Elmhurst Rd
 Elk Grove Village, IL 60007

Phone:847-437-4300 Fax:847-437-4455
 Email runco@runcoonline.com www.runcoofficesupply.com

INVOICE NUMBER 584719-0

INVOICE DATE 08/08/14

ACCOUNT NUMBER 96303

DEPT NUMBER 0087

BILL TO ADDRESS		SHIP TO ADDRESS			
UTILITIES, INC. 2335 SANDERS RD. NORTHBROOK IL 60062 606-248-2306		WATER SERVICE CORP. KENTUCKY <i>Batch</i> ATTN: STEPHEN 102 WATER PLANT RD. MIDDLESBORO KY 40965 <i>Doc 623172</i>			
CUSTOMER PURCHASE ORDER	SALESPERSON	TERMS	ROUTE	PAYCODE	ORDER TAKER
345102-1180	MATT BERARDI	NET 30	9	CHARGE	120

ITEM NUMBER	MFG	ITEM DESCRIPTION	UM	ORD QTY	B/O QTY	SHIP QTY	SELL PRICE	EXTEND PRICE
FAX2840	BRT	FAX, HIGH-SPEED, LASER	EA	1		1	209.99	209.99

Please remit to: Runco Office Supply P.O. Box 2673 Des Plaines, IL 60017-2673	Subtotal	209.99
	Tax	
	Total Due	209.99

3005160

LEMONS ENTERPRISES

1265 State Route 123 E.
CLINTON, KENTUCKY 42031
(270) 653-8235 or 3422

RECEIVED

AUG 20 2014

1 1/2% Service Charge added after 30 days

Batch _____

Doc 623092

CUSTOMER'S ORDER NO.		PHONE		DATE		
				8-18-14		
NAME						
W. S. C. K						
ADDRESS						
SOLD BY	CASH	C.O.D.	CHARGE	ON ACCT.	MDSE. RETD.	PAID OUT
QTY.	DESCRIPTION				PRICE	AMOUNT
2	Concrete 2 pieces Hwy 58					2000.00
1	" " Hwy 51					
<p><i>Thanks</i></p> <p><i>AG Simpson</i></p> <p>P.O. # 166853</p> <p>B.u. # 345101</p>						
RECEIVED BY					TAX	
					TOTAL	2000.00

All claims and returned goods MUST be accompanied by this bill.

6898

Thank You

Annette Zavilla

From: James Leonard
Sent: Wednesday, August 20, 2014 7:20 AM
To: Annette Zavilla
Cc: John Turner; Stephen R. Vaughn
Subject: Invoice, Lemons Enterprises- 8-18-14
Attachments: Lemons Enterprises Invoice 8-18-14.pdf

Morning Annette,

Please process the attached Invoice from Lemons Enterprises, Clinton KY.

Thank you kindly,
James Leonard, WSCK

8006637

RECEIVED

Invoice

AUG 15 2014

3495 State Route 45 S
Mayfield, KY 42066
270-247-9338

Date	Invoice #
8/11/2014	12175

Bill To
UTILITIES, INC. ATT: ACCOUNTS PAYABLE 2335 SANDERS ROAD NORTHBROOK, IL 60062

Batch _____
Doc 622246

Project	Date of Service	P.O. No.	Terms	Due Date
	8/11/2014	Clinton, KY	Net 30	9/10/2014

Quantity	Description	Rate	Amount
	Flag Traffic- 8/11/14, Clinton, KY= 6 1/2 hrs	422.50	422.50
	P.O.#166597 B.U.#345101		

Payments not received by due date will be subject to 2.0% or \$5.00 finance charge (whichever is greater) unless payment arrangements are made. Thank you.	Total	\$422.50
--	--------------	-----------------



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

INVOICE DATE
8/04/2014

RECEIVED

PO#164037

INVOICE NUMBER
2241624-000-000

PAGE
1 OF 1

Original Invoice

AUG 11 2014

Account No.
220148

SOLD TO:

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062

NORTHBROOK

IL 60062

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Batch _____

Doc 621326

Customer Order No.				Terms of Sale			Ship Via		
PO#164037				NET 30			BEST WAY		
Freight		F.O.B.		Ship Date		Ship From			
PREPAID		SHIPPING POINT		7/18/2014		CPS-SOMERSET			
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	10	10			1" VLV BX RISER FOR 5-1/4	7.00	EA	70.00	
2	10	10			2" VLV BX RISER FOR 5-1/4	15.00	EA	150.00	
					STATE SALES TAX - ILLINOIS			13.75	
							Invoice Amount	233.75	

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
D-22-0805/22

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

INVOICE DATE
8/04/2014

RECEIVED
AUG 11 2014

PO#164037

INVOICE NUMBER
2241625-000-000

PAGE
1 OF 1

Original Invoice

Account No.
220148

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

Batch _____

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062

NORTHBROOK IL 60062

Doc 621327

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Customer Order No.				Terms of Sale			Ship Via		
PO#164037				NET 30			BEST WAY		
Freight		F.O.B.			Ship Date		Ship From		
PREPAID		SHIPPING POINT			7/18/2014		CPS-SOMERSET		
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	10	10		240114	3 SIGMA 3VBR VAL BX RISER	18.20	EA	182.00	
2	10	10		200161	5-1/4 WTR LID F/VAL BX	12.35	EA	123.50	
					STATE SALES TAX - ILLINOIS			19.09	
							Invoice Amount	324.59	

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
S-22-0805/22

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE

3008346

HDSUPPLY

WATERWORKS

Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	C768414
INVOICE DATE	8/07/14
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due \$1,162.89

RECEIVED

AUG 11 2014

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

788 1 MB 0.435 E0295X I0414 D1047205829 P2103387 0001:0001



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:

102 PLANT RD
MIDDLESBORO, KY

Batch _____
Doc 621314

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
8/01/14	8/06/14	PO#164632	BUS# 345102			UPS	C768414
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
61MU145703	145703 A-8 BONNET BSR OL 75 TO BID SEQ# 10	1	1		299.3900	EA	299.39
61MUA1	A-1 PENT OPER NUT 1-1/2" O/L BID SEQ# 20	1	1		189.3900	EA	189.39
61MU280355	280355 BONNET REPAIR KIT BID SEQ# 40	1	1		68.7600	EA	68.76
61MU281951	281951 A-4 HD NUT OL W/AFW 87< BID SEQ# 50	1	1		60.1700	EA	60.17
61MU142818	142818 A-2 WEATHER CAP O/L BID SEQ# 60	1	1		28.9800	EA	28.98
61MUA300	A300 4-1/2 SAFETY FLG KIT BID SEQ# 70	2	2		197.0300	EA	394.06

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	1,040.75

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$1,162.89
56.32					65.82		

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE: C768414

3009296

RECEIVED

JUL 18 2014

INVOICE



SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE	
6544367	
Invoice Date	Page
7/14/2014 10:19:43	1 of 2
ORDER NUMBER	
1564148	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch

Doc

615849

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
163314 345	Net 30	8/13/2014	8/13/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
7/7/2014 07:16:44	3568767	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: OUR TRUCK

Tracking #:

12	12	0		93280148 LOCKSEAL HEAD W/ ALUM SEAL	EA	1.3500	16.20
5	5	0		FRATCO-1824 18 X 24 ROUND CORRUGATED METER BOX WITH NOTCHES	EA	26.5000	132.50
5	3	2	B	C32 TYPE C FORD RING WITH 11 1/2 LID W/LOCK TO FIT 18TILE LOCK"	EA	63.4500	190.35
4	4	0		VB72-7W-41-33-NL 5/8X3/4 FORD COPPERSETTER PJCTS X DP W/L.W. BALL VALVE 7" TALL **NO LEAD**	EA	101.3500	405.40
2	2	0		313-076007 6X3/4CC DOUBLE STRAP SADDLE FOR CI, AC	EA	36.7500	73.50
6	6	0		562-S 24X36 CI VALVE BOX W/WATER LID	EA	42.0000	252.00
6	6	0		F1000-3-NL 3/4 FORD CORP. STOP PJCTS X CC **NO LEAD**	EA	32.7200	196.32

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL



SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE

INVOICE	
6544367	
Invoice Date	Page
7/14/2014 10:19:43	2 of 2
ORDER NUMBER	
1564148	

Quantities			Status Key	Item ID Item Description	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production				

Total Lines: 7

Total Freight In: 0.00

Total Freight Out: 30.00

SUB-TOTAL: 1,266.27

TOTAL FREIGHT: 30.00

KENTUCKY STATE TAX: 77.77

AMOUNT DUE: 1,374.04

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

3005160

LEMONS ENTERPRISES

1265 State Route 123 E.
CLINTON, KENTUCKY 42031
(270) 653-8235 or 3422

RECEIVED

JUL 02 2014

1 1/2% Service Charge added after 30 days

Batch _____

Doc 612132

CUSTOMER'S ORDER NO.		PHONE		DATE <u>7-2-14</u>															
NAME <u>W. S. C. K.</u>																			
ADDRESS _____																			
<table border="1"> <tr> <td>SOLD BY</td> <td>CASH</td> <td>G.O.D.</td> <td>CHARGE</td> <td>ON ACCT.</td> <td>MOSE. RETD.</td> <td>PAID OUT</td> </tr> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </table>						SOLD BY	CASH	G.O.D.	CHARGE	ON ACCT.	MOSE. RETD.	PAID OUT							
SOLD BY	CASH	G.O.D.	CHARGE	ON ACCT.	MOSE. RETD.	PAID OUT													
QTY.	DESCRIPTION				PRICE	AMOUNT													
	<u>Cancel 5 spots 51 Hwy 2</u>																		
	<u>Hwy 58-2 MORE ST 1</u>																		
<i>[Handwritten Signature]</i>																			
RECEIVED BY _____					TAX														
					TOTAL	<u>3000</u>													

All claims and returned goods MUST be accompanied by this bill.

6892

Thank You

P.O.# 163055
B.u.# 345101

Annette Zavilla

From: Stephen R. Vaughn
Sent: Wednesday, July 02, 2014 10:43 AM
To: Annette Zavilla
Cc: James Leonard; John Turner
Subject: Lemons Enterprises Invoice
Attachments: Leomns Enterprises Invoice 7-2-14 Clinton KY.pdf

Good Morning Annette,

Attached is an invoice for Lemons Enterprises. Please use BU#345101 and PO#163055 for this invoice.

Thank you,

Stephen Vaughn
Operations Administrative Assistant
Utilites, Inc.
102 Water Plant Road
Middlesboro, KY 40965
P 606-248-2306
F 606-248-0180
M 606-269-1533
srvaughn@uiwater.com

300 CPS Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

RECEIVED

PO#161279

INVOICE DATE
6/24/2014 JUN 30 2014

INVOICE NUMBER
2241278-000-000

PAGE
1 OF 1

Original Invoice

Account No.
220148

SOLD TO:

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062
JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Batch _____
Doc **611927**

Customer Order No.				Terms of Sale			Ship Via		
PO#161279 345				NET 30			OUR TRUCK 5037		
Freight		F.O.B.		Ship Date			Ship From		
PREPAID		SHIPPING POINT		6/24/2014			CPS-SOMERSET		
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	1	1		239820	AVK POST HYD 3 MJS 3 BY 6710-0390 0400 0-01	753.00	EA	753.00	
2	1	1		200464	3 MUL A2360-23 MJ GV OL NT L/ACC	350.00	EA	350.00	
3	2	2		228670	3 SIP EZGRP REST EZDP03 DI W/ACC FOR VALVE	40.29	EA	80.58	
4	2	2		228670	3 SIP EZGRP REST EZDP03 DI W/ACC	26.85	EA	53.70	
5	1	1		205797	4X3 CDI 06 MJ RED L/ACC	34.17	EA	34.17	
6	1	1		244983	4 SIGMA SLDP4 DI ONE-LOK ACC SET	33.49	EA	33.49	
7	1	1		228392	4 SIP EZGRP EZDP03 DI REST W/ACC	27.53	EA	27.53	
8	18.0	18.0		206426	4 CL/TC CL350/51 DI SJ PIPE	1527.00	CFT	274.86	
9	18.0	18.0		206425	3 CL/TC CL350/51 DI SJ PIPE	2897.00	CFT	521.46	
10	1	1		206273	5-1/4 CI VAL BX 2PC SCR 24-36	45.00	EA	45.00	
11	4	4		256743	INVENTORY PURPOSES	.00	EA	.00	
								STATE SALES TAX - ILLINOIS	135.86
SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS. S-22-0625/22							Invoice Amount	2,309.65	

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE

3010378

RECEIVED

JUL 01 2014

Batch _____

Doc 611828

INVOICE # 1553 Date 7-1-14				CONTRACT NO.	
914007-3 Water Improvements				PARTIAL PAYMENT INVOICE NO.: 1-FINAL	
Water Service Corp. Of Kentucky Clinton, KY				Page 1 OF 2	
Owner: Attn: Toni Federico Utilities, Inc. 2335 Sanders Road Northbrook, IL 60062-6196		CONTRACTOR: Revell Construction Co., Inc. 1111 Section Line Road Union City, TN 38261		PERIOD OF ESTIMATE: 6/1/2014 to 6/30/14	
CONTRACT CHANGE ORDER SUMMARY			ESTIMATE		
No.	Approval Date	Amount			
		Additions	Deductions		
1				1. Original Contract..... 22,165.00	
2				2. Change Orders..... 0.00	
3				3. Revised Contract (1 + 2)..... 22,165.00	
4				4. Work Completed..... 24,655.00	
				5. Stored Materials..... 0.00	
				6. Subtotal (4 + 5)..... 24,655.00	
				7. Retainage.....0%..... 0.00	
TOTALS		0.00	0.00	8. Previous Payments..... 0.00	
NET CHANGE		0.00		9. Amount Due..... \$24,655.00	
CONTRACT TIME					
Original (days) _____		Yes		Starting date _____	
Revised _____		On Schedule		Projected Completion _____	
Remaining _____		No			
CONTRACTOR'S CERTIFICATION:			ARCHITECT OR ENGINEER'S CERTIFICATION		
The undersigned Contractor certifies that to the best of their knowledge, information and belief the work covered by this payment estimate has been completed in accordance with the contract documents, that all amounts have been paid by the contractor for work for which previous payment estimates were issued and payments received from the owner, and that current payment shown herein is now due.			The undersigned certifies that the work has been carefully inspected and to the best of their knowledge and belief, the quantities shown in this estimate are correct and the work has been performed in accordance with the contract documents.		
Contractor: <u>Revell Construction Co., Inc.</u>			Architect or Engineer _____		
By <u><i>Jim Revell</i></u>			By _____		
Date <u>7/1/14</u>			Date _____		
APPROVED BY OWNER:			ACCEPTED BY AGENCY:		
Owner _____			The review and acceptance of this estimate does not attest to the correctness of the quantities shown or that the work has been performed in accordance with the contract documents.		
By _____			By _____		
Date _____			Title _____		
			Date _____		

P.O. # 162974
B.u. # 345101

UNIT PRICE BREAKDOWN									
Item	Description	CONTRACT				Estimate # 1		Total to Date	
		Qty	Unit	Unit Price	Amount	Qty	Amount	Qty	Amount
Sublet Street									
1	1" CTS Tubing with Tracer Wire	300	LF	9.00	2,700.00	300	2,700.00	300	2,700.00
2	Connection to Existing Service Line	1	LF	270.00	270.00	1	270.00	1	270.00
3	Connection to Existing Meters	2	EA	185.00	370.00	2	370.00	2	370.00
4	Seed and Straw	1	LS	70.00	70.00	1	70.00	1	70.00
Section Price					3,410.00				
Angular Street									
1	Service Bore for Road	6	EA	450.00	2,700.00	6	2,700.00	6	2,700.00
2	3/4" CTS Tubing	240	LF	9.00	2,160.00	240	2,160.00	240	2,160.00
3	Connection to Existing Water Line	6	EA	315.00	1,890.00	6	1,890.00	6	1,890.00
4	Connection to Existing Meters	6	EA	175.00	1,050.00	6	1,050.00	6	1,050.00
5	Meter Relocation	2	LS	450.00	900.00	2	900.00	2	900.00
6	Seed and Straw	1	LS	550	550.00	1	550.00	1	550.00
<i>Kill of Existing Is included along with concrete patch</i>									
Section Price					9,250.00				
Blair Street									
1	1" CTS Tubing	250	LF	9.00	2,250.00	250	2,250.00	250	2,250.00
2	Connection to Existing Water Line	1	EA	340.00	340.00	1	340.00	1	340.00
3	Connection to Existing Meter	1	EA	190.00	190.00	1	190.00	1	190.00
4	Seed and Straw	1	LS	50.00	50.00	1	50.00	1	50.00
<i>Includes Kill of Existing Service</i>					2,830.00				
Section Price									
Dunlora Street									
1	Service Bore	3	EA	450.00	1,350.00	3	1,350.00	3	1,350.00
2	1" CTS Tubing	385	LF	9.00	3,465.00	385	3,465.00	385	3,465.00
3	3/4" CTS Tubing	60	LF	9.00	540.00	60	540.00	60	540.00
4	Connection to Existing Water Line	2	EA	285.00	570.00	2	570.00	2	570.00
5	Connection to Existing Meters	2	EA	250.00	500.00	2	500.00	2	500.00
6	Seed and Straw	1	LS	250.00	250.00	1	250.00	1	250.00
Section Price					6,675.00				
Original Total					22,165.00		22,165.00		22,165.00
1	Hwy 51 Bore Appr. 35 LF with 3/4" HDPE Provided by others	1	LS	875.00	875.00	1	875.00	1	875.00
Angular Street							0.00		0.00
2	1" CTS Tubing	240	LF	6.00	1,440.00	240	1,440.00	240	1,440.00
3	Connection to Existing Meters	1	EA	175.00	175.00	1	175.00	1	175.00
<i>Kill of Existing Is included along with concrete patch</i>									
Added Items							2,490.00		2,490.00
Grand Totals							24,655.00		24,655.00

3007629

RECEIVED

2014-06-24 09:59

HAROLD

6063372344 >>

16062480180

JUN 24 2014

P 1/1

Federal Id - 61116 8042

Gibbons Construction, Inc.

JOB INVOICE

P.O. BOX 6
CALVIN, KY 40813
PHONE: 606-337-2344 or 337-7450
Cell - 269-0647

Batch _____
Doc 609892

Invoice Number 557
Date of Invoice 6-24-14
RE: Estimate Number _____
 Day Work Contract Extra
Explanation _____
Job Name/Number _____
Job Location _____
Job Phone _____ Ext. _____
Start Date _____ End Date _____

Middlesboro WATER
Middlesboro Ky

#	LOCATION	QTY	MATERIAL			SQ. FT.	RATE	TOTAL AMOUNT
			SPK	CONC	OTHR			
1	Oran wood	3	✓			80 Sq/ft.	240	
2								
3								
4								
5								
6								
7								
8								
9								
10								
11								
12								
13								
14								
15								
16								
17								
18								
19								
20								
21								

PO # 162423
B. # 345102

Your Order # 162423 Your Order Date 6-24-14
Work Ordered By [Signature]
Terms _____

TOTAL MATERIALS	
TOTAL ABOVE	600
TOTAL DUE	600



DEPARTMENT OF THE ARMY
NASHVILLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX 1070
NASHVILLE, TENNESSEE 37202-1070

JUN 17 2014

Real Estate Division

Water Services Corporation of Kentucky
ATTN: Mr. James Leonard
1217 East Cumberland Avenue
Suite 4
Middlesboro, Kentucky 40965

Dear Mr. Leonard:

Enclosed in triplicates are draft copies of Easement No. DACW62-2-14-0411 and Consent to Easement No. DACW62-9-14-0412, which are designed to give you permission for the continued operation and maintenance of a six-inch (6") water main, across and upon portions of Tract Nos. 1, 17, & 25, Middlesboro Flood Control Project, Bell County, Kentucky. The easement will be granted for a period of twenty (20) years beginning on February 1, 2014 and ending on January 31, 2034.

The fair market rental for the twenty (20) year term, as determined by an appraisal, is \$300.00. There is also an administrative fee of \$610.00 for the preparation of the real estate instruments. The total for the easement is \$910.00, payable in advance. Please make your check or money order payable in the amount of \$910.00 to FAO, USAED, Nashville District

Upon receipt of the signed easement, the consent to easement, and your fee of \$910.00, the easement and consent to easement will be executed on behalf of the Secretary of the Army. A fully executed copy of the easement will be mailed to you for your records.

It is also required by PL 104-134, dated April 26, 1996 that you include your Social Security number or a Federal Tax ID number with your rental payment. The following is an excerpt of the law:

(i)(1) IN GENERAL.-Section 7701 of title 31, United States Code, is amended by adding at the end the following new subsections: “(1) The head of each Federal agency shall require each person doing business with that agency to furnish to that agency such person’s taxpayer identifying number. “(2) For purposes of this subsection, a person shall be considered to be doing business with a Federal agency if the person is- “(A) a lender or servicer in a Federal guaranteed or insured loan program administered by the agency; “(B) an applicant for, or recipient of, a Federal license, permit, right-of-way, grant, or benefit payment administered by the agency or insurance administered by the agency; “(C) a

contractor of the agency; "(D) assessed a fine, fee, royalty or penalty by the agency.

This easement and consent to easement are subject to the right of the United States to flood the areas as may be necessary for the operation and maintenance of Middlesboro Flood Control Project.

If you have any questions please contact Ms. Kelly Wanamaker at (615) 736-7725. Your cooperation is appreciated.

Sincerely,

A handwritten signature in black ink, appearing to read "Ashley N. Klimaszewski". The signature is fluid and cursive, with a large initial "A" and "K".

Ashley N. Klimaszewski
Chief, Management & Disposal Branch
Real Estate Contracting Officer

Enclosures

3006637

Invoice



3495 State Route 45 S
Mayfield, KY 42066
270-247-9338

Date	Invoice #
6/9/2014	6/16

RECEIVED
JUN 13 2014

Bill To

UTILITIES, INC.
ATT: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Batch 183815
Doc 607945

Project	P.O. No.	Rep	Terms	Due Date
		KC	Net 30	7/9/2014

Quantity	Description	Rate	Amount
	Flagged Traffic 6/9/14, Clinton, KY	390.00	390.00
<p>P.O.#161686 B.U.#345101</p>			

Payments not received by the due date will be subject to a 2% PER MONTH or \$5.00 finance charge (whichever is greater) unless payment arrangements are made. Thank you.

Total **\$390.00**

WE NOW ACCEPT CREDIT CARDS!

ORIGINAL INVOICE



2008024

Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
14696801	5/19/14
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	

FED I.D. # 39-0143280
 GST # 12374614

RECEIVED

MAY 23 2014

Mail all remittances to:
 BOX 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

Batch 181904
 Doc 603/03

SHIP TO CUSTOMER 0404
 WATER SERVICE CORP OF KY
 501 N 19 ST
 MIDDLESBORO KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
158806 345102BU	QUOTED FREIGHT	Dayton Freight
ORDER DATE	INCO TERMS	TRACKING NUMBER
5/09/14	FCA FACTORY	16870477
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
1	UM1-0003-7051 B25-LL -AC -NN Ordered: 100.000 Shipped: 100.000 8331 TINDALL-CEN METER MODEL 25 LL (NSF 61-G MTR) METER TYPE MODEL 25 REGISTRATION LOCAL REGISTER SIZE 5/8" (1/2 X 7 1/2) PRODUCTION METHOD STANDARD WATER APPLICATION POTABLE BOTTOM MATERIAL CAST IRON BOTTOM BOLT MATERIAL 430 STAINLESS STEEL BOLTS SEAL BOLT QUANTITY 1 (ONE) THRUST ROLLER PLASTIC TESTING BADGER STANDARD (TS-135) PACKAGING SIX PACK MOUNTING POSITION SIDEWALK READ UNIT OF MEASURE GALLON REGISTRATION FACE STANDARD REGISTER LID / SHROUD PLASTIC SHROUD / PLASTIC LID (BLACK) REGISTER LID S/N OUTSIDE BMI 8 DIGIT S/N METER S/N PRIMARY OUTLET BMI 8 DIGIT S/N SEAL SCREW SLOTTED SEAL SCREW PALLETIZING STANDARD Serial Number: B 46158776 THRU 46158875	42.780	4,278.00
	Sub Total		4,278.00
	Freight		99.11

This invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
14696801	5/19/14
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	

FED I.D. # 39-0143280
 GST # 123746141

Mail all remittances to:
 BOX 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

SHIP TO CUSTOMER 0404
 WATER SERVICE CORP OF KY
 501 N 19 ST
 MIDDLESBORO KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
158806 345102BU	QUOTED FREIGHT	Dayton Freight
ORDER DATE	INCO TERMS	TRACKING NUMBER
5/09/14	FCA FACTORY	16870477
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
	Total Tax		262.63
	Total		4,639.74

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

J. R. Hoe & Sons, Inc.
 P. O. Box 1737
 Middlesboro KY 40965

3665031

Invoice	INV00000000138543
Date	5/19/2014
Page	1

Toll Free: (800) 245-5521
 Fax: (606) 248-6308

RECEIVED

MAY 20 2014

Batch 181648

Doc 602092

Bill To:

Water Service Corp.
 P.O. Box 818
 Attn: James Leonard
 Middlesboro KY 40965

Ship To:

Water Service Corp.
 Customer Pick Up

Purchase Order No.		Customer ID		Salesperson ID		Shipping Method		Payment Terms		Req. Ship Date		Master No.	
158622		WATER06				PICKUP				5/1/2014		44,801	
Ordered	Shipped	B/O	Item Number	Description				Discount	Unit Price	Ext. Price			
1	1	0	BUSINESS UNIT 345102					\$0.00	\$0.00	\$0.00			
1	1	0	EJ # H36361001	36" Pedestrian Rated Alum. Hatch				\$0.00	\$818.00	\$818.00			

P.O.# 158622
 B.U.# 345102

Subtotal	\$818.00
Misc	\$0.00
Tax	\$49.08
Freight	\$0.00
Trade Discount	\$0.00
Total	\$867.08

3066637

Invoice



3495 State Route 45 S
Mayfield, KY 42066
270-247-9338

Date	Invoice #
5/14/2014	11845

Bill To

UTILITIES, INC.
ATT: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Batch 181271 RECEIVED
Doc 601316 MAY 15 2014

P.O. No.	Rep	Terms	Due Date
<u>159526</u>		Net 30	6/13/2014

Quantity	Description	Rate	Amount
1	repair water leaks on HWY 58 E BU#345101	520.00	520.00

Payments not received by the due date will be subject to a 2% PER MONTH or \$5.00 finance charge (whichever is greater) unless payment arrangements are made. Thank you.

Total \$520.00

WE NOW ACCEPT CREDIT CARDS!

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

3009296

Batch 180893
Doc 600224

INVOICE

INVOICE	
6537283	
Invoice Date	Page
5/5/2014 09:44:23	1 of 1
ORDER NUMBER	
1555182	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

RECEIVED

MAY 12 2014

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
157106 - <u>345</u>	Net 30	6/4/2014	6/4/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
4/14/2014 09:31:23	3561012	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: OUR TRUCK

Tracking #:

6	6	0		BA13-231W-NL 3/4X1/2 FORD ANGLE BALL VALVE FIPT X MC W/L.W. **NO LEAD**	EA	36.0100	216.06
1	1	0		C45-77-NL 2 FORD BRASS COUPLING PICTS X GALV **NO LEAD**	EA	98.2400	98.24

Total Lines: 2

SUB-TOTAL: 314.30
KENTUCKY STATE TAX: 18.85
AMOUNT DUE: 333.15

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

3009296

RECEIVED
MAY 12 2014

INVOICE

INVOICE	
6537284	
Invoice Date	Page
5/5/2014 09:45:31	1 of 1
ORDER NUMBER	
1555182	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
157106 - 345	Net 30	6/4/2014	6/4/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
4/14/2014 09:31:23	3560928	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			
3	3	0		702-200	EA	22.5200	67.56
Carrier: OUR TRUCK W/OTHER				Tracking #:			
				2 GALVANIZED COMR. COUPLING			

Total Lines: 1

SUB-TOTAL: 67.56
KENTUCKY STATE TAX: 4.05
AMOUNT DUE: 71.61

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

Batch 180893
Doc 600225

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220

(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED

MAY 12 2014

RECEIVED

MAY 12 2014

INVOICE

INVOICE	
6537613	
Invoice Date	Page
5/7/2014 13:28:41	1 of 1
ORDER NUMBER	
1555182	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch 180946
Doc 600370

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
157106 - 345	Net 30	6/6/2014	6/6/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
4/14/2014 09:31:23	3560797	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: OUR TRUCK W/OTHER

Tracking #:

10	10	0		ME16156 12" X 20MM ABRASIVE BLADE FOR MASONRY	EA	7.9500	79.50
----	----	---	--	---	----	--------	-------

Total Lines: 1

SUB-TOTAL: 79.50
KENTUCKY STATE TAX: 4.77
AMOUNT DUE: 84.27

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

3009296

G & C **SUPPLY CO., Inc.**

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED

APR 24 2014

INVOICE

INVOICE	
6535741	
Invoice Date	Page
4/21/2014 09:41:07	1
ORDER NUMBER	
1555182	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch 181553

Doc 601963

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
157106 345	Net 30	5/21/2014	5/21/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
4/14/2014 09:31:23	3559524	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: OUR TRUCK

Tracking #:

4	4	0		FRATCO-1824 18 X 24 ROUND CORRUGATED METER BOX WITH NOTCHES	EA	26.5000	106.00
4	4	0		T444-333-NL 3/4 FORD BRASS TEE PICTS X PICTS X PICTS **NO LEAD**	EA	44.1900	176.76
6	6	0		CSUN-3 3/4 FORD D.P. UNION NUT ONLY	EA	3.7900	22.74
3	3	0		G1101-2 2 GALV. THREADED 90 ELL	EA	12.0500	36.15
6	6	0		C84-33-NL 3/4 FORD MALE ADAPTER MIPT X PICTS **NO LEAD**	EA	15.0000	90.00
4	4	0		C14-33-NL 3/4 FORD FEMALE ADAPTER FIPT X PICTS **NO LEAD**	EA	15.7700	63.08
6	6	0		C44-33-NL 3/4 FORD BRASS COUPLING PICTS X PICTS **NO LEAD**	EA	18.2700	109.62

Total Lines: 7

Total Freight In: 0.00

Total Freight Out: 30.00

SUB-TOTAL: 604.35

TOTAL FREIGHT: 30.00

KENTUCKY STATE TAX: 38.06

AMOUNT DUE: 672.41

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

JIM BROWN SUPPLY
 1701 NORTH 25TH ST
 P.O. BOX 865
 MIDDLESBORO, KY 40965

Batch 179993
 Doc 598125

JIM BROWN SUPPLY

STATEMENT - CLOSING DATE 4/25/2014

4/25/2014

Page: 1

Water Service Corp. of Kentucky
 2335 Sanders Road
 Northbrook, Illinois 60062

Water501

JIM BROWN SUPPLY
 1701 NORTH 25TH ST
 P.O. BOX 865
 MIDDLESBORO, KY 40965

Phone: 606-248-0164
 Fax: 606-248-0170

Customer Activity Since: 3/25/2014

Balance at the end of last Period: \$70.26

Date	Details	Amount	Applied	Signature	
Reference No.	Order No.				
4/1/2014	AR Invoice	403743	\$11.29	<i>Henry John</i>	
345102HJ					
Qty	Code	Description	Unit	RetailPrice	Extended Price
3.00	666489130020	DRY0030 AA ALKALINE BATTERY 4 Pack	CD	\$3.55	\$10.65
				Subtotal	\$10.65
				Tax	\$0.64
				TOTAL:	\$11.29
$345102.6310 = 96.17$ $345.1130 = 50.51$					
4/1/2014	AR Invoice	403808	\$12.55	<i>345102 Peggy Smith</i>	
Qty	Code	Description	Unit	RetailPrice	Extended Price
1.00	662545045269	3/4in IPS Full Port Ball Valve T-2000	EA	\$10.95	\$10.95
1.00	019442152970	301 34X2 3/4 X2 GALV NPL	EA	\$0.89	\$0.89
				Subtotal	\$11.84
				Tax	\$0.71
				TOTAL:	\$12.55
4/4/2014	AR Invoice	404339	\$29.49	<i>Joe Paul</i>	
Qty	Code	Description	Unit	RetailPrice	Extended Price
1.00	112IPSGV	1-1/2in IPS Gate Valve T-401	EA	\$27.82	\$27.82
				Subtotal	\$27.82
				Tax	\$1.67
				TOTAL:	\$29.49
4/7/2014	AR Receipt	294297	-\$70.26	-\$70.26	
4/11/2014	AR Invoice	405307	\$20.67	<i>345102 Gory Smith</i>	
Qty	Code	Description	Unit	RetailPrice	Extended Price
3.00	STRAW	Wheat Straw Square Bales	EA	\$6.50	\$19.50
				Subtotal	\$19.50
				Tax	\$1.17
				TOTAL:	\$20.67

RECEIVED
 MAY 01 2014

JIM BROWN SUPPLY
 1701 NORTH 25TH ST
 P.O. BOX 865
 MIDDLESBORO, KY 40965

JIM BROWN SUPPLY

STATEMENT - CLOSING DATE 4/25/2014

4/25/2014

Page: 2

Water Service Corp. of Kentucky
 2335 Sanders Road
 Northbrook, Illinois 60062

Water501

JIM BROWN SUPPLY
 1701 NORTH 25TH ST
 P.O. BOX 865
 MIDDLESBORO, KY 40965

Phone: 606-248-0164
 Fax: 606-248-0170

Date	Details	Amount	Applied	Signature	
Reference No.	Order No.				
4/21/2014	AR Invoice	406691	\$13.78	345102 <i>[Signature]</i>	
Qty	Code	Description	Unit	RetailPrice	Extended Price
2.00	STRAW	Wheat Straw Square Bales	EA	\$6.50	\$13.00
				Subtotal	\$13.00
				Tax	\$0.78
				TOTAL:	\$13.78
4/22/2014	AR Invoice	406780	\$50.43	<i>[Signature]</i>	
Qty	Code	Description	Unit	RetailPrice	Extended Price
2.00	1438	1438 Baccto Professional Mix 3.8cu ft (black cube) GSP	EA	\$23.79	\$47.58
				Subtotal	\$47.58
				Tax	\$2.85
				TOTAL:	\$50.43
4/23/2014	AR Invoice	406945	\$8.47	<i>[Signature]</i>	
345102					
Qty	Code	Description	Unit	RetailPrice	Extended Price
1.00	104-304	3/4in IPS Gate Valve T-401	EA	\$7.99	\$7.99
				Subtotal	\$7.99
				Tax	\$0.48
				TOTAL:	\$8.47

JIM BROWN SUPPLY
1701 NORTH 25TH ST
P.O. BOX 865
MIDDLESBORO, KY 40965

JIM BROWN SUPPLY

STATEMENT - CLOSING DATE 4/25/2014

4/25/2014

Page: 3

Water Service Corp. of Kentucky
2335 Sanders Road
Northbrook, Illinois 60062

Water501

JIM BROWN SUPPLY
1701 NORTH 25TH ST
P.O. BOX 865
MIDDLESBORO, KY 40965

Phone: 606-248-0164
Fax: 606-248-0170

RECEIVED

MAY 01 2014

PAYMENT DUE BY THE 10TH

CURRENT	30 DAYS	60 DAYS	90 DAYS	CREDITS	AMOUNT DUE
146.68	0.00	0.00	0.00	0.00	\$146.68

PAYMENT SLIP
STATEMENT - CLOSING DATE 4/25/2014

Water501

Water Service Corp. of Kentucky
2335 Sanders Road

Northbrook, Illinois 60062

JIM BROWN SUPPLY
1701 NORTH 25TH ST
P.O. BOX 865
MIDDLESBORO, KY 40965

AMOUNT DUE BY THE 10TH:

\$146.68

3654967



INVOICE

Akins Excavating Company, Inc.

INVOICE #4

DATE: APRIL 28, 2014

182 Busy Lane, Corbin, KY 40701
Phone 606-528-9144 Fax 606-528-9061
akinsexc@yahoo.com

Batch 179858

Doc 597977

TO James Leonard - Regional Manager
Utilities, Inc.
Water Service Corp. of KY
P. O. Box 818
Middlesboro, KY 40965

AKINS CONTACT PERSON	JOB	LOCATION OF WORK	WORK REQUESTED BY	DATE OF WORK	PAYMENT TERMS	DUE DATE
Terry Branson	24 th St Waterline Relocation	Middlesboro, KY	James Leonard	March 2014	30 Days	5/28/2014

QTY	ITEM #	DESCRIPTION	UNIT PRICE	DISCOUNT	LINE TOTAL
1	LS	Relocate waterline and reconnect services Business Unit # 345102 PO # 158157 Project ID # 2014-003	\$54,952.00		\$54,952.00
TOTAL DISCOUNT					
SUBTOTAL					\$54,952.00
SALES TAX					---
TOTAL					\$54,952.00

RECEIVED
APR 28 2014

Make all checks payable to Akins Excavating Company, Inc.
THANK YOU FOR YOUR BUSINESS!

3054967



INVOICE

Akins Excavating Company, Inc.

INVOICE #3

DATE: APRIL 28, 2014

182 Busy Lane, Corbin, KY 40701
Phone 606-528-9144 Fax 606-528-9061
akinsexc@yahoo.com

Batch 179858

TO James Leonard - Regional Manager
Utilities, Inc.
Water Service Corp. of KY
P. O. Box 818
Middlesboro, KY 40965

Doc 597973

AKINS CONTACT PERSON	JOB	LOCATION OF WORK	WORK REQUESTED BY	DATE OF WORK	PAYMENT TERMS	DUE DATE
Terry Branson	45 th St Waterline Relocation	Middlesboro, KY	James Leonard	March 2014	30 Days	5/28/2014

QTY	ITEM #	DESCRIPTION	UNIT PRICE	DISCOUNT	LINE TOTAL
1LS		Relocate Waterline and reconnect services Business Unit # 345102 Po #158163 Project ID #2014-004	\$86,379.00		\$86,379.00
TOTAL DISCOUNT					
				SUBTOTAL	\$86,379.00
				SALES TAX	---
				TOTAL	\$86,379.00

RECEIVED
APR 28 2014

Make all checks payable to Akins Excavating Company, Inc.
THANK YOU FOR YOUR BUSINESS!

3654967



INVOICE

Akins Excavating Company, Inc.

INVOICE #5

DATE: APRIL 29, 2014

182 Busy Lane, Corbin, KY 40701
 Phone 606-528-9144 Fax 606-528-9061
 akinsexc@yahoo.com

TO James Leonard - Regional Manager
 Utilities, Inc.
 Water Service Corp. of KY
 P. O. Box 818
 Middlesboro, KY 40965

Batch 179849

Doc 597842

RECEIVED

APR 28 2014

AKINS CONTACT PERSON	JOB	LOCATION OF WORK	WORK REQUESTED BY	DATE OF WORK	PAYMENT TERMS	DUE DATE
Terry Branson	Gibson Lane Directional Bore	Middlesboro, KY	James Leonard	March 2014	30 Days	5/29/2014

QTY	ITEM #	DESCRIPTION	UNIT PRICE	DISCOUNT	LINE TOTAL
1 LS		4 inch Directional Bore Creek Crossing Business Unit # 345102 PO # 158251			\$11,000.00
TOTAL DISCOUNT					
SUBTOTAL					\$11,000.00
SALES TAX					
TOTAL					\$11,000.00

Make all checks payable to Akins Excavating Company, Inc.
THANK YOU FOR YOUR BUSINESS!

3004629

Federal Id. 61-110

Gibbons Construction, Inc.

JOB INVOICE

P.O. BOX 6
CALVIN, KY 40813
PHONE: 606-337-2344 or 337-7450

RECEIVED

APR 22 2014

Cell: 269-0647

Invoice Number 555

Date of Invoice 4-22-2014

RE: Estimate Number _____

Day Work Contract Extra

Explanation _____

Job Name/Number _____

Job Location _____

Job Phone _____ Ext. 179180

Start Date _____ End/Back _____

Middleboro WATER
Middleboro, Ky

Doc 595809

(ASSET)

#	LOCATION	QTY	MATERIAL			#	SQ. FT.	RATE	TOTAL AMOUNT
			ASPHALT	CONCRETE	OTHER				
1	24 th Cumb. area		-			1	210 SQ. FT.	7 ⁵⁰	1575 ⁰⁰
2	5 24 th 603		-			2	20 SQ. FT.	7 ⁵⁰	150 ⁰⁰
3	Chester between 37 th + 39 th	2	-			3	32 SQ. FT.	7 ⁵⁰	240 ⁰⁰
4	Alley beside library		-			4	39 SQ. FT.	7 ⁵⁰	292 ⁵⁰
5	Xong wood.	2	-			5	143 SQ. FT.	7 ⁵⁰	1072 ⁵⁰
6	Cumb @ Hosp.		-			6	NO CHARGE		
7	Upper Miss.	2	-			7	89 SQ. FT.	7 ⁵⁰	667 ⁵⁰
8	5 23 rd St.		-			8	20 FT.	7 ⁵⁰	150 ⁰⁰
9						9			
10						10			
11						11			
12									
13						#	MISC. OTHER ITEMS		TOTAL AMOUNT
14						1			
15						2			
16						3			
17						4			
18						5			
19									
20									
21									

P.O. # 157697
B.U. # 345102

Your Order # 157697 Your Order Date 4-22-14
Work Ordered By Greg
Terms _____

TOTAL MATERIALS		50
TOTAL ABOVE	4147	
TAX _____ %		50
TOTAL DUE	4147	



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

RECEIVED

PO# 156596

INVOICE DATE
4/14/2014 APR 21 2014

INVOICE NUMBER
2240645-000-000

PAGE
1 OF 1

Original Invoice

Account No.
220148

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

NORTHBROOK

IL 60062

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Batch 179118
Doc 595360

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK

IL 60062

Customer Order No.				Terms of Sale				Ship Via	
PO# 156596 345				NET 30				UPS	
Freight		F.O.B.		Ship Date		Ship From			
PREPAID		SHIPPING POINT		4/14/2014		CPS-SOMERSET			
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	100.0	.0	100.0	207141	2 SDR21 PVC CL-200 IPS PRESS PIPE 20 GSKT	47.00	CFT	.00	
2	2	0	2	275912	2 CDI 06 MJ CAP W/ACC	37.62	EA	.00	
3	4	4		237980	2 STD 06 REG MJ ACC SET	13.18	EA	52.72	
4	2	2		254083	2 CDI 06 MJ PLUG L/ACC	22.04	EA	44.08	
5	2	0	2	229631	2 CDI 06 MJ LP SLV L/ACC	37.54	EA	.00	
6	2	0	2	228419	4 CDI 06 MJ CAP L/ACC	15.92	EA	.00	
7	4	0	4	261440	4 STD 06 REG MJ ACC SET	9.84	EA	.00	
8	2	0	2	224859	4 CDI MJ PLUG L/ACC	18.98	EA	.00	
9	4	0	4	247985	2 06 TRAN ACC SET	13.18	EA	.00	
					STATE SALES TAX - ILLINOIS			6.05	
SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS. S-22-0415/22							Invoice Amount	102.85	

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

INVOICE DATE
4/25/2014

PO# 156596

INVOICE NUMBER
2240645-001-000

PAGE
1 OF 1

Original Invoice

Account No.
220148

SOLD TO:

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062

NORTHBROOK IL 60062

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

345

Customer Order No. PO# 156596				Terms of Sale NET 30			Ship Via UPS		
Freight PREPAID			F.O.B. SHIPPING POINT		Ship Date 4/18/2014		Ship From CPS-SOMERSET		
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	100.0	100.0		207141	2 SDR21 PVC CL-200 IPS PRESS PIPE 20 GSKT	47.00	CFT	47.00	
2	2	2		275912	2 CDI 06 MJ CAP W/ACC	37.62	EA	75.24	
5	2	2		229631	2 CDI 06 MJ LP SLV L/ACC	37.54	EA	75.08	
6	2	2		228419	4 CDI 06 MJ CAP L/ACC	15.92	EA	31.84	
7	4	4		261440	4 STD 06 REG MJ ACC SET	9.84	EA	39.36	
8	2	2		224859	4 CDI MJ PLUG L/ACC	18.98	EA	37.96	
9	4	4		247985	2 06 TRAN ACC SET	13.18	EA	52.72	
STATE SALES TAX - ILLINOIS								22.45	
RECEIVED MAY 01 2014									
						Batch <u>180017</u>			
						Doc <u>598146</u>			
							Invoice Amount		381.65

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
S-22-0428/22

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
 SIGNS & SAFETY DIVISION
 P.O. Drawer 459—1105 Hwy 77
 Atwood, TN 38220
 (731)662-7193 or (800)238-3836
 Fax: (731)662-7219

RECEIVED

APR 11 2014

INVOICE

INVOICE	
6534132	
Invoice Date	Page
4/7/2014 13:39:33	1 of 1
ORDER NUMBER	
1553799	

Bill To:

WATER SERVICE CORP OF KENTUCKY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS ROAD
 NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
 100 EAST JACKSON ST.
 NO TRUCK CHARGE
 CLINTON, KY 42031

Batch 178751
 Doc 593961

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
BU345101	Net 30	5/7/2014	5/7/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
4/2/2014 10:07:03	3558101	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: UPS GROUND

Tracking #: 1ZX373190343534971

2	2	0		313-076007 6X3/4CC DOUBLE STRAP SADDLE FOR CI, AC	EA	36.7500	73.50
---	---	---	--	---	----	---------	-------

Total Lines: 1

SUB-TOTAL: 73.50

Total Freight In: 0.00

Total Freight Out: 14.56

TOTAL FREIGHT: 14.56

KENTUCKY STATE TAX: 4.41

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

AMOUNT DUE: 92.47

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
14196801	3/27/14
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	

FED I.D. # 39-0143280
 GST # 123746141

Mail all remittances to:
 BOX 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

RECEIVED
APR 01 2014

SHIP TO CUSTOMER 0402
 WATER SERVICE CORP OF KENTUCKY
 102 WATERPLANK ROAD
 MIDDLESBORO KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
153879 BU345102	QUOTED FREIGHT	UPS Ground
ORDER DATE	INCO TERMS	TRACKING NUMBER
3/21/14	FCA FACTORY	1Z8478860300066669
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
1	UM1-0003-9488 B55-LL -AI -NN Ordered: 6.000 Shipped: 6.000 8331 TINDALL-CEN METER MODEL 55 LL (NSF 61-G MTR) METER TYPE MODEL 55 REGISTRATION LOCAL REGISTER SIZE 1" (1 X 10 3/4) PRODUCTION METHOD STANDARD WATER APPLICATION POTABLE BOTTOM MATERIAL CAST IRON BOTTOM BOLT MATERIAL 430 STAINLESS STEEL BOLTS SEAL BOLT QUANTITY 1 (ONE) THRUST ROLLER PLASTIC TESTING BADGER STANDARD (TS-135) PACKAGING FOUR PACK MOUNTING POSITION SIDEWALK READ UNIT OF MEASURE GALLON REGISTRATION FACE STANDARD REGISTER LID / SHROUD PLASTIC SHROUD / PLASTIC LID (BLACK) REGISTER LID S/N OUTSIDE BMI 8 DIGIT S/N METER S/N PRIMARY OUTLET BMI 8 DIGIT S/N SEAL SCREW SLOTTED SEAL SCREW PALLETIZING STANDARD Serial Number: B 45997046 THRU 45997051 Sub Total Freight	112.340	674.04
		Batch	144700
		Doc	590962
			674.04
			25.20

This invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
14196801	3/27/14
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	

FED I.D. # 39-0143280
 GST # 123746141

Mail all remittances to:
 BOX 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

SHIP TO CUSTOMER 0402
 WATER SERVICE CORP OF KENTUCKY
 102 WATERPLANK ROAD
 MIDDLESBORO KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
153879 BU345102	QUOTED FREIGHT	UPS Ground
ORDER DATE	INCO TERMS	TRACKING NUMBER
3/21/14	FCA FACTORY	1Z8478860300066669
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
	Total Tax		41.95
	Total		741.19

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

3009296

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED

MAR 20 2014

INVOICE

INVOICE	
6531592	
Invoice Date	Page
3/17/2014 13:43:48	1 of 1
ORDER NUMBER	
1551471	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch 176934
Doc 588916

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
345101	Net 30	4/16/2014	4/16/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
3/14/2014 07:12:31	3555648	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: UPS GROUND

Tracking #: 1ZX373190345751483

2	2	0		48072	EA	32.0000	64.00
SIPHON KING PUMP W/6 FT HOSE							

Total Lines: 1

Total Freight In: 0.00

Total Freight Out: 12.58

SUB-TOTAL:	64.00
TOTAL FREIGHT:	12.58
KENTUCKY STATE TAX:	3.84
AMOUNT DUE:	80.42

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

J. R. Hoe & Sons, Inc.
 P. O. Box 1737
 Middlesboro KY 40965

RECEIVED

MAR 06 2014

Invoice	137833
Date	2/28/2014
Page	1

Toll Free: (800) 245-5521
 Fax: (606) 248-6308

Batch 176097

Doc 585870

Bill To:

Water Service Corp.
 P.O. Box 818
 Attn: James Leonard
 Middlesboro KY 40965

Ship To:

Customer Pick Up

Purchase Order No.		Customer ID	Salesperson ID	Shipping Method	Payment Terms	Req Ship Date	Master No.
PO 152852/BU 345102		WATER06		PICKUP		2/28/2014	44,298
Ordered	Shipped	B/O	Item Number	Description	Discount	Unit Price	Ext. Price
1	1	0	SO #26402		\$0.00	\$0.00	\$0.00
100	100	0	13" WATER METER COV		\$0.00	\$20.00	\$2,000.00
100	100	0	12 1/2" WATER METER (\$0.00	\$20.00	\$2,000.00

P.O. # 152852
 B.U. # 345102

Subtotal	\$4,000.00
Misc	\$0.00
Tax	\$240.00
Freight	\$0.00
Trade Discount	\$0.00
Total	\$4,240.00

Annette Zavilla

From: Stephen R. Vaughn
Sent: Thursday, March 06, 2014 9:43 AM
To: Annette Zavilla
Cc: James Leonard
Subject: JR Hoe and Sons Invoices
Attachments: JR Hoe and Sons Invoice#137833.pdf; JR Hoe and Sons Invoice#137834.pdf

Good Morning Annette,

Attached are two invoices from JR Hoe and Sons, here in Middlesboro KY. I wasn't for sure if we had already sent these to you or not.

Thanks!

Stephen Vaughn
Operations Administrative Assistant
Utilites, Inc.
102 Water Plant Road
Middlesboro, KY 40965
P 606-248-2306
F 606-248-0180
M 606-269-1533
srvaughn@uiwater.com

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220

(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED

MAR 04 2014

INVOICE

INVOICE	
6530570	
Invoice Date	Page
2/28/2014 13:17:47	1 of 1
ORDER NUMBER	
1548615	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch 175657
Doc 584520

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
152974	Net 30	3/30/2014	3/30/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
2/18/2014 08:08:02	3552895	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID Item Description	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production				

Carrier: SALESMEN

Tracking #:

6	6	0		B44-233W-NL 3/4 FORD BALL VALVE PJCTS X PJCTS W/L.W. **NO LEAD**	EA	43.0800	258.48
---	---	---	--	--	----	---------	--------

Total Lines: 1

SUB-TOTAL: 258.48
KENTUCKY STATE TAX: 15.51
AMOUNT DUE: 273.99

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

3009296

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED
MAR 31 2014

INVOICE

INVOICE	
6532788	
Invoice Date	Page
3/26/2014 13:20:24	1 of 1
ORDER NUMBER	
1548615	

Bill To:
WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:
WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch 178749
Doc 593960

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
152974 <i>346</i>	Net 30	4/25/2014	4/25/2014	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
2/18/2014 08:08:02	3555156	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Carrier: SALESMEN

Tracking #:

3	3	0		B84-233W-NL 3/4 FORD BALL VALVE MIPT X PJCTS W/L.W. **NO LEAD**	EA	49.2900	147.87
---	---	---	--	---	----	---------	--------

Total Lines: 1

SUB-TOTAL: 147.87
KENTUCKY STATE TAX: 8.87
AMOUNT DUE: 156.74

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993
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All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

ORIGINAL

3006513



RECEIVED

FEB 26 2014

CUSTOMER #: 00052

INVOICE #: 15236

INVOICE DATE: 02/21/14

DUE DATE: 03/23/14

Jim Myers & Sons, Inc.

P.O. Box 240038, Charlotte, N.C. 28224

www.myersequipment.com

Phone: (704) 554-8397 Fax: (704) 554-9113

BILL TO:

WATER SERVICE CORP OF KENTUCKY
PO BOX 818
MIDDLESBORO, KY 40965

Ship To:

WATER SERVICE CORP
102 WATER PLANT RD
MIDDLESBORO, KY

JMS Order No.	Cust order No.	Terms	Shipped VIA	PPD	Coll
11376	153434	Net 30 days	UPS	✓	

DESCRIPTION	QUANTITY	PRICE	AMOUNT
02/21/14 3-15/16 UHMW LINER	10.00	235.000 / SET	<u>2,350.00</u>

TOTAL: 2,350.00
BALANCE: 2,350.00

Thank you for your business!

PO# 153434

Business Unit# 345102

Batch 175228

Doc 583856

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Remit To:
 P.O. Box 9004
 Gurnee, IL 60031-9004
 TEL: (847) 689-3000
 FAX: (847) 689-3001
 TOLL FREE: 1-800-493-9876
 F.E.I.N.: 52-2418852

INVOICE

RECEIVED

JAN 17 2014

INVOICE NO.	PAGE NO.
241190	1 of 1
CUSTOMER NO.	DATE
911268	01/13/14

View online at: <http://usabluebook.billtrust.com>
 Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
 948 1 MB 0.405 E0432 I0520 D865287282 P1778780 0002:0003

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
 102 WATER PLANT RD
 MIDDLESBORO KY 40965
 USA

Batch 173297
 Doc 677570

Attention: 0005 STEVE VAUGHN

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
150564	01/13/14	CDE	1%/10 NET 30	KY	797951	01	FXD/PPD	UPS
USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
22142	28 in Traffic Cone Hi-Vis Hi-Vis 6in and 4in Decals B.U. #345102	20	20	0	EA	24.65	EA	493.00

THANK YOU for your business!
 1.5% MONTHLY FINANCE CHARGE
 ON AMOUNTS 30 DAYS PAST DUE
 Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
493.00	0.00	0.00	36.88	121.74	651.62

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

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****IMPORTANT****

Please include this customer #
 on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
241190	911268	01/13/14	651.62

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

3046999

RECEIVED

JAN 28 2014

WILLIAM C. BREWER, P.E.

462 MARSH ROAD

BARBOURVILLE, KY 40906

Batch 173228

Doc 577132

INVOICE

January 27, 2014

Utilities, Inc.
Water Service Corp. of Kentucky
Attn: James Leonard
P.O. Box 818
Middlesboro, KY 40965

RE: **45th Street Water Line Replacement**
Invoice #5


Dear James,

In accordance with our agreement, the following is hereby submitted for the **Design** services performed to date:

Total Design fee	\$4,100.00
Percent Complete to date 100%	
Amount Due to Date: 100% of \$2,200.00	\$4,100.00
DOW Review Fee	<u>\$ 150.00</u>
TOTAL DUE THIS INVOICE	\$4,250.00

*PO # 151660-06
B.L.# 345102
Capital Project # 2014004*

Sincerely,


Wm. Chris Brewer, P.E.

Annette Zavilla

From: James Leonard
Sent: Tuesday, January 28, 2014 1:55 PM
To: Annette Zavilla
Cc: Stephen R. Vaughn; Chris Brewer, P.E. (c.brewer@barbourville.com); Greg Bolt; Gary Mills; Bruce Haas
Subject: Invoices- William C. Brewer P.E.
Attachments: Invoice- William C. Brewer, P.E. - 1-28-14- Capitol Project # 2014003.pdf; Invoice William C. Brewer P.E. 1-28-14 Capitol Project# 2014004.pdf

Hi Annette,

Please process the two attached invoices from William C. Brewer, P.E.

This is Engineering fee's for two-2014 Cap Projects in Middlesboro KY.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp of KY

RECEIVED

JAN 28 2014

WILLIAM C. BREWER, P.E.
462 MARSH ROAD
BARBOURVILLE, KY 40906

Batch 173228
Doc 577131

INVOICE

January 27, 2014

Utilities, Inc.
Water Service Corp. of Kentucky
Attn: James Leonard
P.O. Box 818
Middlesboro, KY 40965

RE: **Dorchester Avenue Water Line Replacement
Invoice #4**

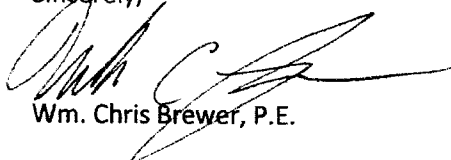
Dear James,

In accordance with our agreement, the following is hereby submitted for the **Design** services performed to date:

Total Design fee	\$2,200.00
Percent Complete to date 100%	
Amount Due to Date: 100% of \$2,200.00	\$2,200.00
DOW Review Fee	<u>\$ 150.00</u>
TOTAL DUE THIS INVOICE	\$2,350.00

*P.O. # 151658-00
B.U. # 345102
Capital Project # 2014003*

Sincerely,


Wm. Chris Brewer, P.E.

Annette Zavilla

From: James Leonard
Sent: Tuesday, January 28, 2014 1:55 PM
To: Annette Zavilla
Cc: Stephen R. Vaughn; Chris Brewer, P.E. (c.brewer@barbourville.com); Greg Bolt; Gary Mills; Bruce Haas
Subject: Invoices- William C. Brewer P.E.
Attachments: Invoice- William C. Brewer, P.E. - 1-28-14- Capitol Project # 2014003.pdf; Invoice William C. Brewer P.E. 1-28-14 Capitol Project# 2014004.pdf

Hi Annette,

Please process the two attached invoices from William C. Brewer, P.E.

This is Engineering fee's for two-2014 Cap Projects in Middlesboro KY.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp of KY

3006413

ADC
821 William D. Jones Blvd.
P.O. Box 620
Fayetteville TN 37334

RECEIVED

JAN 27 2014

Invoice

Invoice Number:

76482

Invoice Date:

Jan 23, 2014

Voice: 888-542-8561

Fax: 931-438-2673

Batch 173226

Bill to:

Utilities, Inc.
Attn: Accounts Payable
2335 Sanders Road
Northbrook, IL 60062

Ship to:

Clinton Water Services
414 Short Street
Water Service Corp. of KY.
Clinton, KY 42031

Doc 577104

Customer ID		Customer PO		Payment Terms	
CLINTON		151338		Net 30 Days	
Sales Rep ID		Shipping Method		Ship Date	Due Date
KY		ADC Truck		1/20/14	2/22/14
Quantity	Line Item ID	Description		Unit Price	Extension
25.00	Tubes	Stenner Tube		10.50	262.50
1.00		Shipping		13.14	13.14
		Business Unit # 345101			

Subtotal	275.64
Sales Tax	
Total Invoice Amount	275.64
Payment Received	
TOTAL	275.64

We will add finance charges on invoices more than 30 days overdue.

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P.O. Box 9004
Gurnee, IL 60031-9004

TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

RECEIVED

JAN 21 2014

INVOICE

INVOICE NO.	PAGE NO.
242836	1 of 1
CUSTOMER NO.	DATE
911268	01/14/14

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

SHIP TO: 3

BILL TO: 911268
631 1 MB 0.405 E0137X I0170 D866168037 P1780157 0001:0001



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Batch 172858
Doc 545719

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA		
150700	01/14/14	LKU	1%/10 NET 30	KY	799520	01	FXD/PPD	UPS		
USA STOCK NO.	DESCRIPTION			ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
42970	Flange Mount Agitator/Mixer 34' SS Shaft (Not Coated)			1	1	0	EA	257.40	EA	257.40
75284	1/2 HP Mixer 1750 RPM Double Prop/32' Shaft/Clamp mt			1	1	0	EA	598.45	EA	598.45

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
855.85	0.00	0.00	54.30	49.11	959.26

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

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****IMPORTANT****

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
242836	911268	01/14/14	959.26

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
13273801	12/13/13
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	

FED I.D. # 39-0143280
 GST # 123746141

Mail all remittances to:
 BOX 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

RECEIVED
 DEC 19 2013

SHIP TO CUSTOMER 0402
 WATER SERVICE CORP OF KENTUCKY
 102 WATERPLANK ROAD
 MIDDLESBORO KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
148106 BU345102	QUOTED FREIGHT	Dayton Freight
ORDER DATE	INCO TERMS	TRACKING NUMBER
12/06/13	FCA FACTORY	16869981
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
1	UM1-0003-7051 B25-LL -AC -NN Ordered: 150.000 Shipped: 150.000 8331 TINDALL-CEN METER MODEL 25 LL (NSF 61-G MTR) METER TYPE MODEL 25 REGISTRATION LOCAL REGISTER SIZE 5/8" (1/2 X 7 1/2) PRODUCTION METHOD STANDARD WATER APPLICATION POTABLE BOTTOM MATERIAL CAST IRON BOTTOM BOLT MATERIAL 430 STAINLESS STEEL BOLTS SEAL BOLT QUANTITY 1 (ONE) THRUST ROLLER PLASTIC TESTING BADGER STANDARD (TS-135) PACKAGING SIX PACK MOUNTING POSITION SIDEWALK READ UNIT OF MEASURE GALLON REGISTRATION FACE STANDARD REGISTER LID / SHROUD PLASTIC SHROUD / PLASTIC LID (BLACK) REGISTER LID S/N OUTSIDE BMI 8 DIGIT S/N METER S/N PRIMARY OUTLET BMI 8 DIGIT S/N SEAL SCREW SLOTTED SEAL SCREW PALLETIZING STANDARD Serial Number: B 45729377 THRU 45729526 Sub Total 6,844.50 Freight 144.96	45.630	6,844.50
			Batch <u>170801</u> Doc <u>569472</u>

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
13273801	12/13/13
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	

FED I.D. # 39-0143280
 GST # 123746141

Mail all remittances to:
BOX 88223
Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

SHIP TO CUSTOMER 0402
 WATER SERVICE CORP OF KENTUCKY
 102 WATERPLANK ROAD
 MIDDLESBORO KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
148106 BU345102	QUOTED FREIGHT	Dayton Freight
ORDER DATE	INCO TERMS	TRACKING NUMBER
12/06/13	FCA FACTORY	16869981
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
	Total Tax		419.37
	Total		7,408.83
	B/U # 345102		

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
13273601	12/09/13
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	
FED I.D. # 39-0143280	
GST # 123746141	

Mail all remittances to:
 BOX 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

RECEIVED
 DEC 12 2013

SHIP TO CUSTOMER 0402
 WATER SERVICE CORP OF KENTUCKY
 102 WATERPLANK ROAD
 MIDDLESBORO KY 40965

Batch 170801
569471
 Dec

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
BU# 345102	QUOTED FREIGHT	UPS Ground
ORDER DATE	INCO TERMS	TRACKING NUMBER
12/06/13	FCA FACTORY	1Z5899760300233757
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	SP
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
1	64466-001 METREPRO DIGITAL REGISTER RED Ordered: 2.000 Shipped: 2.000 8331 TINDALL-CEN	161.500	323.00
	Sub Total		323.00
	Freight		9.98
	Total Tax		19.98
	Total		352.96

This invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

INVOICE DATE
12/04/2013

RECEIVED
DEC 09 2013

PO#147901

INVOICE NUMBER
2232576-000-000

PAGE
1 OF 1

Original Invoice

Account No.
220148

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

NORTHBROOK IL 60062

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Batch 169906
Doc 566538

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062

3000307
SOLD TO:

Customer Order No.				Terms of Sale			Ship Via		
PO#147901 <i>345</i>				NET 30			OUR TRUCK 5037		
Freight		F.O.B.		Ship Date		Ship From			
PREPAID		SHIPPING POINT		12/04/2013		CPS-SOMERSET			
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount	
1	35	35		222040	18 AMETEK 194102 RECT PLST MTR BX L/LID	25.00	EA	875.00	
2	35	34	1	235190	LC225 CI LID W/CI RDR	18.60	EA	632.40	
					STATE SALES TAX - ILLINOIS			94.21	
							Invoice Amount	1,601.61	

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
S-22-1205/22

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE

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 FAX: (847) 689-3001
 TOLL FREE: 1-800-493-9876
 F.E.I.N.: 52-2418852

INVOICE

RECEIVED

NOV 25 2013

INVOICE NO.	PAGE NO.
205304	1 of 1
CUSTOMER NO.	DATE
911268	11/19/13

View online at: <http://usabluebook.billtrust.com>
 Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
 2178 1 MB 0.405 E0354X I0393 D823445890 P1697527 0001:0001

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
 102 WATER PLANT RD
 MIDDLESBORO KY 40965
 USA

Batch 169517
 Doc 565717

Attention: 0005 STEVE VAUGHN

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA	
147207	11/19/13	CDE	1%/10 NET 30	KY	773160	01	FXD/PPD	UPS	
USA STOCK NO.	DESCRIPTION		ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
27949	HighlighterStrobe Mini-Litebar 12V 40W Suction Cup/Magn Mnt B.U. #345102		1	1	0	EA	250.75	EA	250.75

THANK YOU for your business!
 1.5% MONTHLY FINANCE CHARGE
 ON AMOUNTS 30 DAYS PAST DUE
 Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
250.75	0.00	0.00	16.19	19.04	285.98

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook®

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
 on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
205304	911268	11/19/13	285.98

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

USABlueBook
 P.O. Box 9004
 Gurnee, IL 60031-9004



INVOICE

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

BRANCH ADDRESS
 LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	B752706
INVOICE DATE	11/27/13
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

RECEIVED

DEC 02 2013

Total Amount Due	\$158.54
-------------------------	-----------------

Remit To:
 HD SUPPLY WATERWORKS, LTD.
 PO BOX 277838
 ATLANTA, GA 30384 7838

329 1 AT 0.384 E0101X I0122 D830538246 P1708278 0001:0002



Shipped to:

102 PLANT RD
 MIDDLESBORO, KY



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Batch 169433
Doc 565366

Return Top Portion With Payment For Faster Credit

*Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.*

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
11/13/13	11/26/13	PO# 146877	BU# 345102			UPS	B752706
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
390507C8413GNL	C84-13GNL 1/2X3/4 CPLG MIPXGJ BID SEQ# 10	10	10		13.7800	EA	137.80
390507C4413GNL	C44-13GNL 1/2X3/4 GJCTS CPLG BID SEQ# 20	10		10	18.6300	EA	.00

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	137.80

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$158.54
11.77					8.97		

LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

**THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED**

INVOICE:	B752706
-----------------	---------



INVOICE

BRANCH ADDRESS
 LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	B806739
INVOICE DATE	11/27/13
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

RECEIVED
 DEC 02 2013

Total Amount Due	\$197.48
-------------------------	-----------------

Remit To:
 HD SUPPLY WATERWORKS, LTD.
 PO BOX 277838
 ATLANTA, GA 30384 7838

329 1 AT 0.384 E0101 I0123 D830538247 P1708278 0002:0002



Shipped to:
 102 PLANT RD
 MIDDLESBORO, KY

Backordered from:
 11/27/13 B752706



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Batch 169433
Doc 565367

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
11/13/13	11/26/13	PO# 146877	BU# 345102			OUR TRUCK	B806739
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
390507C4413GNL	C44-13GNL 1/2X3/4 GJCTS CPLG BID SEQ# 20	10	10		18.6300	EA	186.30

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	186.30

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$197.48
					11.18		

LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED

INVOICE:	B806739
-----------------	----------------



Be Right™

RECEIVED

NOV 25 2013

INVOICE NUMBER 8583218

DATE: 11/21/2013

Page: 1

Batch 169038

TOTAL: \$425.56

Doc 564450

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

Have you ordered online?
Order at WWW.HACH.COM

85832186 000468140 00000042556 112113

Sort Seg: 560

Tray: 9

DETACH HERE

Original

SOLD TO



WATER SERVICE CORP OF KENTUCKY

2335 Sanders Rd
Northbrook, IL 60062-6108
United States

SHIP TO

WATER SERVICE CORP OF KENTUCKY

102 WATER PLANT RD
MIDDLESBORO, KY 40965
United States

Table with invoice details: INVOICE NO, PURCHASE ORDER NUMBER, TERMS, FREIGHT, CARRIER, ACCOUNT, REF. NO.

Remit to: Hach Company, 2207 Collections Center Dr, Chicago, IL 60693, Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

Table with columns: LN#, PRODUCT DESCRIPTION, ITEM NO., QUANTITY, UNIT PRIC, EXT. PRICE

*TRACKING NUMBERS: 050316374055535

ORDER CONTACT:

GARY MILLS
6062482306

Notes:

Summary table: SUBTOTAL, FREIGHT CHARGES, TAX, INVOICE TOTAL

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE, PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



Other brands from Hach

USABlueBook®

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CREDIT MEMO

RECEIVED

NOV 15 2013

INVOICE NO.	PAGE NO.
195930	1 of 1
CUSTOMER NO.	DATE
911268	11/07/13

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
594 1 MB 0.405 E0096X I0113 D819711829 P1689293 0001:0001

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Batch 168599
Doc 562764

345102.1115

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
606-269-4249	11/07/13	293	1%/10 NET 30	KY	C18574	01	PREPAID	UPS
USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
76085	Injection Valve Assembly 26716 'PVC Teflon & Ceramic'	-1	-1	0	EA	95.90	EA	-95.90

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
-95.90	0.00	0.00	-5.75		-101.65

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook®

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
195930	911268	11/07/13	-101.65

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

USABlueBook

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RECEIVED

INVOICE

OCT 29 2013

INVOICE NO.	PAGE NO.
184786	1 of 1
CUSTOMER NO.	DATE
911268	10/24/13

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
353 1 MB 0.405 E0345X I0483 D805373577 P1662572 0001:0001

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Batch 167204
Doc 558255

Attention: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA
145359 EMAIL <i>3/5</i>	10/24/13	LAS	1%/10 NET 30	KY	759181	01	FXD/PPD	UPS
USA STOCK NO.	DESCRIPTION	ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
50880	24 GPD; 110 PSI (P151-392S) LMI Pump PVDF Liquid End	1	1	0	EA	493.95	EA	493.95
72906	4 Function Bleed Valve #38004	1	1	0	EA	75.95	EA	75.95
76085	Injection Valve Assembly 26716 'PVC Teflon & Ceramic'	1	1	0	EA	95.90	EA	95.90

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
665.80	0.00	0.00	41.46	25.21	732.47

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
184786	911268	10/24/13	732.47

REMITTANCE ADDRESS

USABlueBook
P.O. Box 9004
Gurnee, IL 60031-9004

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

USABlueBook®

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RECEIVED
OCT 29 2013

INVOICE

INVOICE NO.	PAGE NO.
184786	1 of 1
CUSTOMER NO.	DATE
911268	10/24/13

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
353 1 MB 0.405 E0345X I0483 D805373577 P1662572 0001:0001

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Batch 167204
Doc 558255

Attention: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA		
145359 EMAIL <i>345</i>	10/24/13	LAS	1%/10 NET 30	KY	759181	01	FXD/PPD	UPS		
USA STOCK NO.	DESCRIPTION			ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
50880	24 GPD; 110 PSI (P151-392SI) LMI Pump PVDF Liquid End			1	1	0	EA	493.95	EA	493.95
72906	4 Function Bleed Valve #38004			1	1	0	EA	75.95	EA	75.95
76085	Injection Valve Assembly 26716 'PVC Teflon & Ceramic'			1	1	0	EA	95.90	EA	95.90

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
665.80	0.00	0.00	41.46	25.21	732.47

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook®

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
184786	911268	10/24/13	732.47

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

USABlueBook
P.O. Box 9004
Gurnee, IL 60031-9004



INVOICE

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

BRANCH ADDRESS
 LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	B609703
INVOICE DATE	10/21/13
ACCOUNT #	041750
SALESPERSON	LEXINGTON HOUSE
BRANCH #	114

RECEIVED
OCT 24 2013

Total Amount Due	\$749.91
-------------------------	-----------------

Remit To:
 HD SUPPLY WATERWORKS, LTD.
 PO BOX 277838
 ATLANTA, GA 30384 7838

961 1 MB 0.405 ** E0001X I001 D802789496 P1657251 0001:0002



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Shipped to:
 102 PLANT RD
 MIDDLESBORO, KY

Batch 167024
Doc 557776

Return Top Portion With Payment For Faster Credit

*Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.*

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
10/10/13	10/18/13	PO# 144395	BU# 345102			OUR TRUCK	B609703
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
4606B24047	B2404 5/8 X 7 SETTER	20	20		34.4000	EA	688.00
3706B24265	B24265 5/8X3/4 ANGLE BALL VLV	1	1		19.4600	EA	19.46

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	707.46

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$749.91
					42.45		

LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE:	B609703
-----------------	----------------

3008346



Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	B609808
INVOICE DATE	10/21/13
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due **\$1,275.18**

RECEIVED
OCT 24 2013

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

961 1 MB 0.405 ** E0001 I002 D802789498 P1657251 0002:0002



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:
102 PLANT RD
MIDDLESBORO, KY

Batch 167024
Doc 557785

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
10/10/13	10/18/13	PO# 144395	BU# 345102			OUR TRUCK	B609808
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
3907H14227N	H14227N 5/8X3/4X3/4 MPXCTS CON BID SEQ# 30	25	25		15.1200	EA	378.00
3907H15403N	H15403N 3/4 CPLG 110 CTSXCTS BID SEQ# 40	20	20		18.4500	EA	369.00
0807S060K	3/4X60' (K) SOFT COPPER TUBING BID SEQ# 50	120	120		3.8000	FT	456.00

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	1,203.00

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$1,275.18
					72.18		

LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE: B609808

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
12398901	9/16/13
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	

FED I.D. # 39-0143280
 GST # 123746141

Mail all remittances to:
 BOX 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

SHIP TO CUSTOMER 0404
 WATER SERVICE CORP OF KY
 501 N 19 ST
 MIDDLESBORO KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
141787	QUOTED FREIGHT	Dayton Freight
ORDER DATE	INCO TERMS	TRACKING NUMBER
9/06/13	FCA FACTORY	7441680
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
	Total Tax		268.71
	Total		4,747.26
	Business Unit #345102		

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

3006446

INVOICE

Customer	19527
Invoice	528769
Invoice Date	29-Aug-2013
Order	
Customer P.O.	PO 137462
Terms	Net 30 Days
Shipping VIA	

RECEIVED

SEP 03 2013



NORIT ACTIVATED CARBON

Cabot Norit Americas Inc
 3200 University Avenue
 Marshall TX 75670-
 US
 Phone (903) 935-4748
 Fax (903) 923-1007
 Toll Free: (800) 641-9245
 www.cabotcorp.com

Invoice To:
 Wtr Services Corp. of Kentucky
 1221 E. Cumberland Ave.
 P.O. Box 818
 Middlesboro KY 40965

Deliver To:
 Water Service Corporation
 102 Water Plant Road
 attn: Gary Mills
 Middlesboro KY 40965

Batch 162,904

Doc 544880

Line	Part Code / Description	Quantity	Price	Uom	Value
1	PO 137462 MDrive and motor sensor	1.00	1,630.000	EA	1,630.00

Comments:

PO# - 137462
 Business Unit - 345102

Please mention invoice number 528769 when remitting payment

Please Remit To: Cabot Norit Americas Inc. P.O. Box 970378 Dallas TX 75397-0378	Wire Payments To: JPMorgan Chase 101 E Austin St. Marshall TX 75670- Acct: 9180104868 ABA/SWIFT: 111000614
---	--

Line Totals	\$1,630.00
Discount	\$0.00
Freight	\$0.00
Miscellaneous	\$0.00
Total Tax	\$0.00
Total Invoice Value USD	\$1,630.00

Annette Zavilla

From: Gary Mills
Sent: Tuesday, September 03, 2013 12:17 PM
To: Annette Zavilla
Cc: James Leonard
Attachments: Invoice Cabot Norit Americas 9-3-13.pdf

Hello Annette,

Attached is a invoice for carbon feeder parts we received in July of this year. The engineer that took our order left Cabot Norit Americas and didn't submit the order to their accounting department. Could you Please process at your convenience? The PO has been receipted.

Thanks,

Gary Mills
Lead Operator
Water Service Corporation of Kentucky
102 Water Plant Road
P.O Box 818
Middlesboro, Ky. 40965
Phone # 606-248-2306
Cell # 606-269-4249
Fax # 606-248-0180
wgmills@uiwater.com



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

INVOICE DATE **8/19/2013**

RECEIVED

PO#139672
22231810

INVOICE NUMBER
2231631-000-000

PAGE
1 OF 1

3000307
SOLD TO:

Account No.
220148

Original Invoice

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

Batch *162406*

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062

NORTHBROOK

IL 60062

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

Doc *543012*

Customer Order No.		Terms of Sale		Ship Via				
PO#139672 <i>345</i>		NET 30		OUR TRUCK 5037				
Freight		F.O.B.		Ship Date				
PREPAID		SHIPPING POINT		8/13/2013				
Ship From		Ship From		Ship From				
CPS-SOMERSET		CPS-SOMERSET		CPS-SOMERSET				
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount
1	25	25			3030 CI LID W/ CI READER	18.15	EA	453.75
					STATE SALES TAX - ILLINOIS			28.36
							Invoice Amount	482.11

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
D-22-0820/22

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE

3008346



INVOICE

Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

BRANCH ADDRESS
HDSWW - LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	B275564
INVOICE DATE	8/20/13
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

RECEIVED
AUG 23 2013

Total Amount Due	\$584.33
------------------	----------

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

499 1 MB Q.405 E0017X 10018 D759813090 P1574206 0001:0001



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:
102 PLANT RD
MIDDLESBORO, KY

Batch 162406
Doc 543011

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
7/26/13	8/19/13	138532	BU#345102			UPS	B275564
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
3706B24265R3N	B24265R3N 5/8X3/4 ANG BMV FIPX BID SEQ# 10	15	15		36.7500	EA	551.25

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	551.25

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$584.33
					33.08		

HDSWW - LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE:	B275564
----------	---------

3001290



Solutions for a Safe, Secure Business
Correspondence Address:
P.O. Box 369 Buffalo NY 14240
PH: 1-800-442-3633
FAX: 1-800-344-2578
WEB: emedco.com

RECEIVED

AUG 02 2013

REMIT TO:
Emedco Inc
39209 Treasury Center
Chicago IL 60694-9200

Invoice #	: 9321880756
Invoice Total	: 294.90
Invoice Date	: 07/29/2013
Payment Terms	: Due net 30 Days
Delivery Terms	: Prepaid and Add
Bill-to #	: 14E3001311

29742868*38074*USAS_C*1402050949*0384*#10 1/1



Attention: Accounts Payable
UTILITIES INC
2335 SANDERS RD
NORTHBROOK IL 60062

Batch 160743

Doc 537387

UTILITIES INCORP
102 WATER PLANT RD
MIDDLESBORO KY 40965

Shipped Via: BEST WAY GROUND



Customer PO #	Original Order #	Order Placed By
138518 <i>345</i>	15951425	GARY MILLS

Thank you for your order.
Please reference the invoice number on remittance and all correspondence

LINE# ORIGIN	PART NUMBER / SKU DESCRIPTION	QUANTITY	(U/M)	LIST PRICE	NET PRICE	NET TOTAL
000010 (US)	PALT1 SPILL CONTAIN PALLET*1 DRUM	2	EA	130.00	130.00	260.00
	Net Total					260.00
	Freight/Handling					34.90
	Invoice Total					294.90

Call Emedco today and ask about our monthly special offers at 1-800-442-3633!

Any questions, please call us at 1-800-442-3633, fax us at 1-800-344-2578 or email us at customerservice@emedco.com

Over 1 million customers trust our products and services!

3042115

RECEIVED

JUL 26 2013

INVOICE

KY ARMATURE & MOTOR WORKS INC
P.O. BOX 757
MIDDLESBORO, KY 40965

Invoice Number: 4543
Invoice Date: 7/23/13
Page: 1

Voice: (606) 248-2930
Fax: (606) 248-2931

Batch 160256

Doc 535686

Bill To:
UTILITIES, INC.
ATTENTION: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Customer ID: UTILITIES, INC

Customer PO	Payment Terms	Sales Rep ID	Due Date
138030 <i>345</i>	Net 30 Days		8/22/13

Description	Amount
1-DAYTON MOTOR # 5BE58	665.00

Subtotal	665.00
Sales Tax	39.90
Total Invoice Amount	704.90
Payment/Credit Applied	
TOTAL	704.90

Check/Credit Memo No:

USABlueBook[®]

Get the Best Treatment™

RECEIVED

INVOICE

JUL 15 2013

INVOICE NO.	PAGE NO.
007384	1 of 1
CUSTOMER NO.	DATE
911268	07/11/13

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004
TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
316 1 SP 0.460 E0316X 10430 0733392758 P1525401 0001:0001

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Batch 159510
Doc 533162

Attention: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA	
137519 <i>345</i>	07/11/13	MAN	1%/10 NET 30	KY	698130	01	FXD/PPD	UPS	
USA STOCK NO.	DESCRIPTION		ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
42970	Flange Mount Agitator/Mixer 34' SS Shaft (Not Coated)		1	1	0	EA	257.40	EA	257.40
61163	Bronze Corporation Stop & Nozz 3/4' AWWA w/ CPVC Nozzle		1	1	0	EA	167.15	EA	167.15

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
424.55	0.00	0.00	26.80	22.10	473.45

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook[®]

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
007384	911268	07/11/13	473.45

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

USABlueBook
P.O. Box 9004
Gurnee, IL 60031-9004

3008346



INVOICE

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

BRANCH ADDRESS
 HDSWW - LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	B184607
INVOICE DATE	7/11/13
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

RECEIVED

JUL 15 2013

Total Amount Due \$1,169.29

Remit To:
 HD SUPPLY WATERWORKS, LTD.
 PO BOX 277838
 ATLANTA, GA 30384 7838

508 1 MB 0.405 E0023 I0033 D733316434 P1524504 0002:0003



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Shipped to:
 102 PLANT RD
 MIDDLESBORO, KY

Batch 159500
Doc 532924

Return Top Portion With Payment For Faster Credit

*Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.*

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
7/08/13	7/10/13	SEE BELOW	STOCK			OUR TRUCK	B184607
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
	CUSTOMER PO#- 137156/BU#345102						
72244011303	244-011303-000 1X3 REDI-CLAMP BID SEQ# 10	5	5		20.7800	EA	103.90
72244011306	244-011306-000 1X6 REDI-CLAMP BID SEQ# 20	5	5		47.6700	EA	238.35
72244008803	244-008803-000 3/4X3 REDI-CLMP BID SEQ# 30	5	5		19.7600	EA	98.80
72244008806	244-008806-000 3/4X6 REDI-CLMP BID SEQ# 40	5	5		42.0300	EA	210.15
72226023807	226-023807-000 2X7-1/2 CLAMP BID SEQ# 50	3	3		44.2300	EA	132.69
3910H15428N	H15428N 1 ADPT 110 CTSXMIP BID SEQ# 60	6	6		17.8600	EA	107.16
3907H15381N	H15381N 3/4 COMP TEE CTSXCTS BID SEQ# 70	5	5		42.4100	EA	212.05

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	1,103.10

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL
					66.19	\$1,169.29

HDSWW - LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED

INVOICE: B184607

3008346



Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
HDSWW - LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	B167290
INVOICE DATE	7/11/13
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due \$746.03

RECEIVED
JUL 15 2013

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

508 1 MB 0.405 E0023X I0032 D733316431 P1524504 0001:0003



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:
102 PLANT RD
MIDDLESBORO, KY

Batch 159500
Doc 582923

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
7/01/13	7/10/13	SEE BELOW	STOCK			OUR TRUCK	B167290
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
0807S060K	CUSTOMER PO#- 136761/BU#345102 3/4X60' (K) SOFT COPPER TUBING BID SEQ# 10	180	180		3.9100	FT	703.80

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	703.80

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL
					42.23	\$746.03

HDSWW - LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE: B167290

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 P.O. Box 9004
 Gurnee, IL 60031-9004
 TEL: (847) 689-3000
 FAX: (847) 689-3001
 TOLL FREE: 1-800-493-9876
 F.E.I.N.: 52-2418852

RECEIVED

JUN 10 2013

INVOICE

INVOICE NO.	PAGE NO.
975223	1 of 1
CUSTOMER NO.	DATE
911268	06/03/13

View online at: <http://usabluebook.billtrust.com>
 Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
 1431 1 MB 0.405 E0061X I0073 D706603920 P1473060 0001:0001

SHIP TO: 3



UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
 102 WATER PLANT RD
 MIDDLESBORO KY 40965
 USA

Batch 156987
 Doc 525333

Attention: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA	
134581	06/03/13	AAW	1%/10 NET 30	KY	675714	01	FXD/PPD	UPS	
USA STOCK NO.	DESCRIPTION		ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
73130	60 GPD; 150 PSI; C711-460SI LMI Series C7 Feed Pump		1	1	0	EA	1,282.45	EA	1,282.45

THANK YOU for your business!
 1.5% MONTHLY FINANCE CHARGE
 ON AMOUNTS 30 DAYS PAST DUE
 Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
1,282.45	0.00	0.00	78.72	29.63	1,390.80

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook®

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
 on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
975223	911268	06/03/13	1,390.80

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
 ATTN: ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

RECEIVED

JUN 06 2013



INVOICE

Akins Excavating Company, Inc. INVOICE #2

DATE: JUNE 6, 2013

182 Busy Lane, Corbin, KY 40701
Phone 606-528-9144 Fax 606-528-9061
akinsexc@yahoo.com

TO James Leonard - Regional Manager
Utilities, Inc.
Water Service Corp. of KY
P. O. Box 818
Middlesboro, KY 40965

Batch 156620

Doc 524457

AKINS CONTACT PERSON	JOB	LOCATION OF WORK	WORK REQUESTED BY	DATE OF WORK	PAYMENT TERMS	DUE DATE
Terry Branson	Yellow Ck between Winchester Ave & Cumberland Ave.	Middlesboro, KY	James Leonard	May 2013	30 Days	July 5, 2013

QTY	ITEM #	DESCRIPTION	UNIT PRICE	DISCOUNT	LINE TOTAL
Project 2		8" Directional Bore (200 LF) with Tie-ins	\$19,510.00/LS		\$19,510.00
50LF		8" Directional Bore (Total for project = 250LF) Complete with Tie-ins	\$75.00/LF		\$3,750.00

TOTAL DISCOUNT

SUBTOTAL	\$23,260.00
SALES TAX	---
TOTAL	\$23,260.00

*P.O. # 134910
B.u. # 345102*

Make all checks payable to Akins Excavating Company, Inc.
THANK YOU FOR YOUR BUSINESS!

Annette Zavilla

From: James Leonard
Sent: Thursday, June 06, 2013 9:03 AM
To: Annette Zavilla
Cc: tim akins; Stephen R. Vaughn
Subject: FW: Akins Excavating Company Invoices 6-5-13
Attachments: Akins Excavating Company, Inc. Invoice # 1- 6-6-13.pdf; Akins Excavating Company, Inc. Invoice # 2 - 6-6-13.pdf

Hello Annette,

And Thank you Terry for making the corrections on the two Akins Excavation Company invoices.

I printed off Terry's invoices and listed the P.O. & B.U.# on then rescanned to a pdf. This should fly! Let me know if you need anything else.

Thank you both,

James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp of KY

From: tim akins [<mailto:akinsexc@yahoo.com>]
Sent: Thursday, June 06, 2013 9:47 AM
To: Annette Zavilla
Cc: James Leonard
Subject: Re: Akins Excavating Company Invoices 6-5-13

Terry Branson
Akins Excavating Company, Inc
182 Busy Lane
Corbin, KY 40701
Phone: (606)528-9144
Fax: (606)528-9061

From: Annette Zavilla <AZavilla@uiwater.com>
To: James Leonard <JRLeonard@uiwater.com>; "akinsexc@yahoo.com" <akinsexc@yahoo.com>; Stephen R. Vaughn <SRVaughn@uiwater.com>
Sent: Thursday, June 6, 2013 9:35 AM
Subject: FW: Akins Excavating Company Invoices 6-5-13

Mornin' Guys,

I am sorry but for Auditing Purposes we cannot accept Invoices that have been handwritten changed or modified. The Invoice Number will have to be typed as I stated below as part of the format.

Thanks,
Annette

From: James Leonard
Sent: Thursday, June 06, 2013 8:12 AM
To: Annette Zavilla

Cc: tim akins; Stephen R. Vaughn
Subject: RE: Akins Excavating Company Invoices 6-5-13

Hello Sunshine,

I spoke to the vendor this morning, and he request that I fix this little problem of not have an Invoice #.

The vendor ask me to number the invoices #1, & #2. That's why I am Coping Tim Akins on this e-mail. He will also have a copy of the invoice with the P.O. and Business Unit # listed on.

If you need the Invoice #, P.O.# and B.U.# typed on the invoice please let me know.

Thank you,
James Leonard

From: Annette Zavilla
Sent: Wednesday, June 05, 2013 8:58 PM
To: James Leonard
Cc: Greg Bolt; Stephen R. Vaughn; Gary Mills; Bruce Haas; Helen C. Lupton
Subject: FW: Akins Excavating Company Invoices 6-5-13

Hi James,

Thank you for the 2 attached Akins Excavating Company Invoices. Unfortunately they cannot be processed for payment because there aren't any Invoice Numbers on them. Please ask them to type Invoice Numbers and re-send them.

Thanks
Annette

From: James Leonard
Sent: Wednesday, June 05, 2013 3:14 PM
To: Annette Zavilla
Cc: Greg Bolt; Stephen R. Vaughn; Gary Mills; Bruce Haas; Helen C. Lupton
Subject: Akins Excavating Company Invoices 6-5-13

Hi Annette,

Please process the attached Invoice from Akins Excavating Company, Corbin KY.

The P.O. and B.U. #'s are listed on the invoices. The P.O.'s have been receipted.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp. of KY



INVOICE #2

Akins Excavating Company, Inc.

DATE: JUNE 5, 2013

182 Busy Lane, Corbin, KY 40701
Phone 606-528-9144 Fax 606-528-9061
akinsexc@yahoo.com

TO James Leonard - Regional Manager
Utilities, Inc.
Water Service Corp. of KY
P. O. Box 818
Middlesboro, KY 40965

AKINS CONTACT PERSON	JOB	LOCATION OF WORK	WORK REQUESTED BY	DATE OF WORK	PAYMENT TERMS	DUE DATE
Terry Branson	Yellow Ck between Winchester Ave & Cumberland Ave.	Middlesboro, KY	James Leonard	May 2013	30 Days	July 5, 2013

QTY	ITEM #	DESCRIPTION	UNIT PRICE	DISCOUNT	LINE TOTAL
Project 2		8" Directional Bore (200 LF) with Tie-ins	\$19,510.00/LS		\$19,510.00
50LF		8" Directional Bore (Total for project = 250LF) Complete with Tie-ins	\$75.00/LF		\$3,750.00

*P.O.# 134910
B.U.# 345102*

TOTAL DISCOUNT

SUBTOTAL	\$23,260.00
SALES TAX	---
TOTAL	\$23,260.00

Make all checks payable to Akins Excavating Company, Inc.
THANK YOU FOR YOUR BUSINESS!

RECEIVED

JUN 06 2013



INVOICE

Akins Excavating Company, Inc.

INVOICE #1

DATE: JUNE 6, 2013

182 Busy Lane, Corbin, KY 40701
Phone 606-528-9144 Fax 606-528-9061
akinsexc@yahoo.com

TO James Leonard - Regional Manager
Utilities, Inc.
Water Service Corp. of KY
P. O. Box 818
Middlesboro, KY 40965

Batch 156620

Doc 524456

AKINS CONTACT PERSON	JOB	LOCATION OF WORK	WORK REQUESTED BY	DATE OF WORK	PAYMENT TERMS	DUE DATE
Terry Branson	George Ann Dr to Hospital Parking Lot	Middlesboro, KY	James Leonard	May 2013	30 Days	July 5, 2013

QTY	ITEM #	DESCRIPTION	UNIT PRICE	DISCOUNT	LINE TOTAL
Project 1		370' of new 6" Watertline with Tie-ins	\$18,141.00/LS		\$18,141.00

*P.O. # 134907
B.u. # 345102*

TOTAL DISCOUNT	
SUBTOTAL	
SALES TAX	---
TOTAL	\$18,141.00

Make all checks payable to Akins Excavating Company, Inc.
THANK YOU FOR YOUR BUSINESS!

Annette Zavilla

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Sent: Thursday, June 06, 2013 9:03 AM
To: Annette Zavilla
Cc: tim akins; Stephen R. Vaughn
Subject: FW: Akins Excavating Company Invoices 6-5-13
Attachments: Akins Excavating Company, Inc. Invoice # 1- 6-6-13.pdf; Akins Excavating Company, Inc. Invoice # 2 - 6-6-13.pdf

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Thank you both,

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Utilities, Inc.
Water Service Corp of KY

From: tim akins [<mailto:akinsexc@yahoo.com>]
Sent: Thursday, June 06, 2013 9:47 AM
To: Annette Zavilla
Cc: James Leonard
Subject: Re: Akins Excavating Company Invoices 6-5-13

Terry Branson
Akins Excavating Company, Inc
182 Busy Lane
Corbin, KY 40701
Phone: (606)528-9144
Fax: (606)528-9061

From: Annette Zavilla <AZavilla@uiwater.com>
To: James Leonard <JRLeonard@uiwater.com>; "akinsexc@yahoo.com" <akinsexc@yahoo.com>; Stephen R. Vaughn <SRVaughn@uiwater.com>
Sent: Thursday, June 6, 2013 9:35 AM
Subject: FW: Akins Excavating Company Invoices 6-5-13

Mornin' Guys,

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Annette

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Sent: Thursday, June 06, 2013 8:12 AM
To: Annette Zavilla

Cc: tim akins; Stephen R. Vaughn
Subject: RE: Akins Excavating Company Invoices 6-5-13

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If you need the Invoice #, P.O.# and B.U.# typed on the invoice please let me know.

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James Leonard

From: Annette Zavilla
Sent: Wednesday, June 05, 2013 8:58 PM
To: James Leonard
Cc: Greg Bolt; Stephen R. Vaughn; Gary Mills; Bruce Haas; Helen C. Lupton
Subject: FW: Akins Excavating Company Invoices 6-5-13

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Thanks
Annette

From: James Leonard
Sent: Wednesday, June 05, 2013 3:14 PM
To: Annette Zavilla
Cc: Greg Bolt; Stephen R. Vaughn; Gary Mills; Bruce Haas; Helen C. Lupton
Subject: Akins Excavating Company Invoices 6-5-13

Hi Annette,

Please process the attached Invoice from Akins Excavating Company, Corbin KY.

The P.O. and B.U. #'s are listed on the invoices. The P.O.'s have been receipted.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp. of KY



INVOICE #1

Akins Excavating Company, Inc.

DATE: JUNE 5, 2013

182 Busy Lane, Corbin, KY 40701
Phone 606-528-9144 Fax 606-528-9061
akinsexc@yahoo.com

TO James Leonard - Regional Manager
Utilities, Inc.
Water Service Corp. of KY
P. O. Box 818
Middlesboro, KY 40965

AKINS CONTACT PERSON	JOB	LOCATION OF WORK	WORK REQUESTED BY	DATE OF WORK	PAYMENT TERMS	DUE DATE
Terry Branson	George Ann Dr to Hospital Parking Lot	Middlesboro, KY	James Leonard	May 2013	30 Days	July 5, 2013

QTY	ITEM #	DESCRIPTION	UNIT PRICE	DISCOUNT	LINE TOTAL
Project 1		370' of new 6" Waterline with Tie-ins	\$18,141.00/LS		\$18,141.00
				TOTAL DISCOUNT	
				SUBTOTAL	
				SALES TAX	---
				TOTAL	\$18,141.00

*P.O.# 134907
B.u.# 345102*

Make all checks payable to Akins Excavating Company, Inc.
THANK YOU FOR YOUR BUSINESS!



"Serving the South Since 1943"

P.O. Box 1090 • Lexington, TN 38351-1090
Phone 731-968-2537 Fax 731-968-2415
www.southernconcrete.com

INVOICE

CUSTOMER NO.	DATE	INVOICE NO.	PAGE
08017	05/22/2013	300408	1

UTILITIES, INC.
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

RECEIVED
JUN 04 2013

13 Locations to serve you:

Lexington: (731) 968-2537	Jackson: (731) 422-3358
Oakland: (901) 465-6611	Humboldt: (731) 784-5696
Sardis, MS: (662) 487-1635	Milan: (731) 686-2288
Paris: (731) 642-6672	Alamo: (731) 663-2010
Henderson: (731) 989-9723	Dyer: (731) 692-3462
Union City: (731) 885-7060	Bolivar: (731) 658-6105

DATE	JOB NUMBER - JOB LOCATION - ADDRESS			PRICE	PER UNIT	TAX	TOTAL		
	TICKET NO.	QUANTITY	UNIT					DESCRIPTION	
	5348	HWY 51 BU# 345101		CLINTON					
	PO NUMBER: 133834								
05/22	008-145754	2.00	CY	4000	PSI LIMESTONE	94.000	11.28	199.28	
05/22	008-145754	1.00	LD	MINIMUM LOAD		100.000	6.00	106.00	
05/22	008-145754	1.00	LD	FUEL SURCHARGE		20.000	1.20	21.20	
05/22	008-145754	1.00	LD	1.00%	FLAKE CALCIUM 1 B	40.000	2.40	42.40	
05/22	008-145754	1.00	LD	ENVIRONMENTAL FEE		5.000	0.30	5.30	
JOB TOTAL LINE									374.18

Batch 156389
Doc 523657

Our credit terms are Net Prox. 10th. All purchases bought during the month are due in full by the 10th of the following month. A 1.5% finance charge per month will be added to all past due balances. Any account past due may be placed on C.O.D. status until the account is paid in full. All past due accounts are responsible for attorney's fees and costs associated with collection of accounts. Jurisdiction and venue will be in the courts of Madison County, Tennessee.

AMOUNT DUE ►

374.18

3005329

RECEIVED

MAY 10 2013

Vaughn Electric Company, Inc.



313 EAST FLORIDA AVE UNION CITY, TN 38261
COMMERCIAL AND INDUSTRIAL MOTOR REPAIR AND CONTRACTING

Serving Industry since 1949
COMMERCIAL & INDUSTRIAL ELECTRICAL CONTRACTING - AC/DC ELECTRIC MOTOR SALES & REPAIR
CRANE & HOIST SALES AND SERVICE

DUPLICATE
Invoice

Invoice No.:	0131267
Invoice Date:	03/18/13
Page:	1

Sold To:	Customer Number: 167400 UTILITIES, INC ATTN: ACCTS. PAYABLE 2335 SANDERS ROAD NORTHBROOK, IL 60062	Ship To:	Ship To Number: 000001 "CLINTON WATER DEPT" BUSINESS UNIT RE: 34510 CLINTON, KY 42031
-----------------	---	-----------------	---

Batch 154941
Doc 519210

Order	Order Date	Sales Code	Ship Date	Ship Via	Terms
J066464	01/25/13	400	03/18/13		NET 30

Customer PO:	129030	PO Release:	Misc Number:
--------------	--------	-------------	--------------

Order	Ship	B/O	Item # / Description / Notes	Unit Price	Extension
			B.U. #345103 S/C-CHECK LOAD ON #1 PUMP, PULLED PUMP & CHECKED FOR OBSTRUCTIONS; FOUND PIPING DAMAGED.		
0.5	0.5	0.0	3M 33+SUPER 3M 33+SUPER-3/4X66FT VNL ELECTRICAL TAPE	8.03	4.02
1.0	1.0	0.0	CLINTON, KY-MILEAGE	41.80	41.80
4.0	4.0	0.0	DAVID DAVIS 01/25/13	55.00	220.00
			TOTAL LABOR \$220.00		
			TOTAL MATERIAL/MILEAGE \$45.82		
1.0	1.0	0.0	BUCKET TRUCK	100.00	100.00
** SERVING INDUSTRY SINCE 1949 **					
MOTORS*CONTROLS*ELECTRIC MOTOR REWINDING VIBRATION ANALYSIS & BALANCING COMMERCIAL & INDUSTRIAL ELECTRICAL CONTRACTING					
--- PLEASE PAY BY THIS INVOICE. NO STATEMENT WILL BE SENT. THANK YOU. ---					

Sub Total	365.82
Discount	.00
Tax	.24
Freight	.00
Total	366.06

BU # 345103
PO # 129030

Customer

Annette Zavilla

From: Stephen R. Vaughn
Sent: Friday, May 10, 2013 10:45 AM
To: Annette Zavilla
Cc: James Leonard; John Turner
Subject: Vaughn Electric Company Invoices
Attachments: Vaughn Electric Company PO#129242.pdf; Vaughn Electric Company PO#129030.pdf

Good Morning Annette,

Please process the attached invoices for Vaughn Electric Company. The Invoices are made out to the Clinton Water Department however, our (WSCK) operations in Clinton operate the Wastewater system for the City of Clinton KY. (Contract Operation).

Thanks!

Steve Vaughn
Operations Administrative Assistant
Utilities, Inc.
102 Water Plant Road
Middlesboro, KY 40965
P 606-248-2306
F 606-248-0180
M 606-269-1533
srvaughn@uiwater.com

3008346



Local Service, Nationwide
P.O. Box 1419
Thomasville, GA 31799-1419

INVOICE

BRANCH ADDRESS
HDSWW - LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000
859/253-3464

INVOICE #	9275522
INVOICE DATE	5/10/13
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114

Total Amount Due	\$524.06
------------------	----------

RECEIVED
MAY 13 2013

Remit To:
HD SUPPLY WATERWORKS, LTD.
PO BOX 277838
ATLANTA, GA 30384 7838

1484 1 MB 0.405 E0416 I0684 D692493858 P1444734 0002:0002



WATER SERVICE CORP OF KY
ATTN - ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

Shipped to:
102 PLANT RD
MIDDLESBORO, KY

Batch 154937
Doc 519194

Return Top Portion With Payment For Faster Credit

Thank You For The Opportunity To Serve You.
We appreciate your prompt payment.

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
5/07/13	5/08/13	SEE BELOW	STOCK			OUR TRUCK	9275522
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
0807S060K	CUSTOMER PO#- 132709 BU#345102 3/4X60' (K) SOFT COPPER TUBING BID SEQ# 10	120	120		4.1200	FT	494.40

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	494.40

Freight	Delivery	Handling	Restock	Misc.	Tax	INVOICE TOTAL	\$524.06
					29.66		

HDSWW - LEXINGTON KY
Branch - 114
2141 Christian Rd
Lexington KY 40509 0000

THANK YOU FOR YOUR ORDER
VISIT
WATERWORKS.HDSUPPLY.COM
FOR OTHER SERVICES OFFERED

INVOICE:	9275522
----------	---------



Consolidated Pipe & Supply Co., Inc.

95 BRIAN'S WAY
SOMERSET KY 42501

RECEIVED

PO#130118
Z2230506

INVOICE DATE
5/03/2013

MAY 09 2013

INVOICE NUMBER 2230836-000-000	
PAGE 1 OF 1	

Original Invoice

Account No.
220148

SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

NORTHBROOK IL 60062

JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK

IL 60062

3000307
SOLD TO:

Customer Order No. PO#130118 345	Terms of Sale NET 30	Ship Via OUR TRUCK 5594
Freight PREPAID	F.O.B. SHIPPING POINT	Ship Date 4/19/2013
		Ship From CPS-SOMERSET

Line No.	Ordered	Shipped	Back Orderd	Product No.	Description	Unit Price	Per	Sales Amount
1	50	50			5/8 X5/8 SETTER MUL	82.80	EA	4140.00
					STATE SALES TAX - ILLINOIS			258.75

Batch 15494
Doc 519193

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
D-22-0506/22

Invoice Amount	4,398.75
----------------	----------

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE



INVOICE

Local Service, Nationwide
 P.O. Box 1419
 Thomasville, GA 31799-1419

BRANCH ADDRESS
 HDSWW - LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000
 859/253-3464

INVOICE #	7905220
INVOICE DATE	5/10/13
ACCOUNT #	041750
SALESPERSON	DARRELL WHITE
BRANCH #	114
Total Amount Due	\$648.51

RECEIVED
MAY 13 2013

Remit To:
 HD SUPPLY WATERWORKS, LTD.
 PO BOX 277838
 ATLANTA, GA 30384 7838

1484 1 MB 0.405 E0416X I0683 D692493857 P1444734 0001:0002



WATER SERVICE CORP OF KY
 ATTN - ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60062-6108

Shipped to:

102 PLANT RD
 MIDDLESBORO, KY

Batch 154937

Doc 519192

Return Top Portion With Payment For Faster Credit

*Thank You For The Opportunity To Serve You.
 We appreciate your prompt payment.*

Date Ordered	Date Shipped	Customer PO No.	Job Name	Job No.	Bill of Lading	Shipped Via	Order Number
4/22/13	5/08/13	131538	BU#345102			TRUCK	7905220
Product Code	Description	Quantity Ordered	Quantity Shipped	Back-Ordered	Price	Per	Amount
3905C8413	C84-13 1/2X3/4 CPLG MIPXPJCTS BID SEQ# 10	20	20		10.8000	EA	216.00
390705H15403	H15403 3/4X1/2 110 CTSXCTS BID SEQ# 20	20	20		19.7900	EA	395.80

This transaction is governed by and subject to HD Supply Waterworks standard terms and conditions, which are incorporated herein by this reference and accepted. To review these terms and conditions, please point your web browser to <http://waterworks.hdsupply.com/TandC/>.

Terms	SubTotal
NET 30	611.80
Freight	INVOICE TOTAL
Delivery	\$648.51
Handling	
Restock	
Misc.	
Tax	
36.71	

HDSWW - LEXINGTON KY
 Branch - 114
 2141 Christian Rd
 Lexington KY 40509 0000

**THANK YOU FOR YOUR ORDER
 VISIT
 WATERWORKS.HDSUPPLY.COM
 FOR OTHER SERVICES OFFERED**

INVOICE: 7905220

3009296

RECEIVED

MAY 10 2013

INVOICE

G & C SUPPLY CO., Inc.WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISIONP.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE	
6499098	
Invoice Date	Page
5/7/2013 09:28:30	1 of 1
ORDER NUMBER	
1516650	

Bill To:WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062**Ship To:**WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031Batch 154808Doc 518544

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
B.U. 345101	Net 30	6/6/2013	6/6/2013	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
4/25/2013 13:04:05	3519751	Jeff Wallace	JIMHALFORD

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			
6	6	0		FRATCO-1824 18 X 24 ROUND CORRUGATED METER BOX WITH NOTCHES	EA	28.0000	168.00

Customer Note: BUSINESS UNIT # 345101

Delivery Instructions: ***DROP OFF TO JEFF ON TRUCK***

Carrier: OUR TRUCK

Tracking #:

6	6	0	FRATCO-1824 18 X 24 ROUND CORRUGATED METER BOX WITH NOTCHES	EA	28.0000	168.00
---	---	---	--	----	---------	--------

Total Lines: 1

Total Freight In: 0.00

Total Freight Out: 30.00

SUB-TOTAL: 168.00**TOTAL FREIGHT:** 30.00**KENTUCKY STATE TAX:** 11.88**AMOUNT DUE:** 209.88

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re -stocking charge. All custom or non-stock items are non-returnable.

RECEIVED

MAY 02 2013

Batch 154228

Doc 516864

JIM BROWN SUPPLY
1701 NORTH 25TH ST
P.O. BOX 865
MIDDLESBORO, KY 40965

JIM BROWN SUPPLY

STATEMENT - CLOSING DATE 4/25/2013

4/25/2013

Page: 3

Water Service Corp. of Kentucky
2335 Sanders Road
Northbrook, Illinois 60062

Water501

JIM BROWN SUPPLY
1701 NORTH 25TH ST
P.O. BOX 865
MIDDLESBORO, KY 40965

Phone: 606-248-0164
Fax: 606-248-0170

Date	Details	Amount	Applied	Signature	
Reference No.	Order No.				
4/17/2013 po 131238	AR Invoice	355496	\$269.08	<i>Hugh Hall 5/8/12</i>	
Qty	Code	Description	Unit	Retail Price	Extended Price
1.00	009M3QTS	009 M3 QTS 3/4 BACKFLOW PREVENTER W/ STRAINER	EA	\$282.06	\$253.85
				Subtotal	\$253.85
				Tax	\$15.23
				TOTAL:	\$269.08

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
10799001	4/12/13
D-U-N-S 00-606-9710	
NET 30 DAYS	

FED I.D. # 39-0143280
 GST # 123746141

Mail all remittances to:
 BOX 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

SHIP TO CUSTOMER 0404
 WATER SERVICE CORP OF KY
 501 N 19 ST
 MIDDLESBORO KY 40965

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
130105	QUOTED FREIGHT	Dayton Freight
ORDER DATE	INCO TERMS	TRACKING NUMBER
4/02/13	FCA FACTORY	7441180
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
	Total Tax		490.77
	Total		8,670.24
	BILLING UNIT# 345102		

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.



SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

RECEIVED

APR 15 2013

CREDIT MEMO

CREDIT MEMO	
6496743	
Invoice Date	Page
4/12/2013 08:00:06	1 of 1
ORDER NUMBER	
1515097	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch 152831
Doc 512736

Customer ID: 1351

<i>.1350 PO Number</i>	<i>Term Description</i>	<i>Net Due Date</i>	<i>Disc Due Date</i>	<i>Discount Amount</i>
129161/B.U.345103 RETURN MATERIAL				0.00

<i>Order Date</i>	<i>Pick Ticket No</i>	<i>Primary Salesrep Name</i>	<i>Taker</i>
4/11/2013 15:19:59	3518245	Jeff Wallace	JHALFORD

<i>Quantities</i>			<i>Status Key</i>	<i>Item ID</i> <i>Item Description</i>	<i>Unit</i>	<i>Unit Price</i>	<i>Extended Price</i>
<i>Ordered</i>	<i>Shipped</i>	<i>Remaining</i>	B = Backorder D = Direct C = Canceled P = In Production				

Customer Note: BUSINESS UNIT # 345101

Carrier: BEST WAY

Tracking #:

-1	-1	0	207-0088SW 8 PVC SW SEWER 45 WYE	EA	59.7500	-59.75
-1	-1	0	213-0086SW 8 X 6 SW SEWER TEE WYE	EA	37.6900	-37.69

Total Lines: 2

SUB-TOTAL: -97.44
KENTUCKY STATE TAX: -5.85
AMOUNT DUE: -103.29

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re-stocking charge. All custom or non-stock items are non-returnable.

300 9296

RECEIVED

APR 01 2013

INVOICE



SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE	
6495211	
Invoice Date	Page
3/27/2013 10:15:29	1 of 1
ORDER NUMBER	
1512516	

****DIRECT SHIPMENT****

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
CLINTON, KY 42031

Batch 152292

Doc 510492

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
129161/B.U.345103	Net 30	4/26/2013	4/26/2013	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
3/20/2013 07:59:39	3516541	Jeff Wallace	JIMHALFORD

Quantities			Status Key	Item ID Item Description	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B - Backorder D - Direct C - Canceled P - In Production				

Customer Note: BUSINESS UNIT # 345101

Carrier: DIRECT

Tracking #:

1	1	0		213-0086SW 8 X 6 SW SEWER TEE WYE	EA	37.6900	37.69
1	1	0		207-0088SW 8 PVC SW SEWER 45 WYE	EA	59.7500	59.75

Total Lines: 2

Total Freight In: 0.00

Total Freight Out: 19.00

SUB-TOTAL: 97.44

TOTAL FREIGHT: 19.00

KENTUCKY STATE TAX: 5.85

AMOUNT DUE: 122.29

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re -stocking charge. All custom or non-stock items are non-returnable.

RECEIVED

MAR 25 2013

INVOICE

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE	
6494625	
Invoice Date	Page
3/21/2013 14:20:53	1 of 1
ORDER NUMBER	
1511982	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch 151355
Doc 508292

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
128999 BU 345103	Net 30	4/20/2013	4/20/2013	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
3/18/2013 15:06:30	3515470	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production	Item Description			

Customer Note: BUSINESS UNIT # 345101

Carrier: OUR TRUCK

Tracking #:

1	1	0	205-0606	EA	28.6900	28.69
			6 PVC RR SEWER TEE-WYE			
1	1	0	205-0604	EA	24.6100	24.61
			6 X 4 PVC RR SEWER TEE-WYE			
1	1	0	205-0404	EA	11.3700	11.37
			4 PVC RR SEWER TEE-WYE			
154	154	0	RR3034-6-14	FT	2.3100	355.74
			6 SDR35 PVC RR SEWER PIPE			
			14' LENGTHS			

Total Lines: 4

Total Freight In: 0.00

Total Freight Out: 30.00

SUB-TOTAL: 420.41

TOTAL FREIGHT: 30.00

KENTUCKY STATE TAX: 27.02

AMOUNT DUE: 477.43

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re -stocking charge. All custom or non-stock items are non-returnable.

USABlueBook

Get the Best Treatment™

Remit To:
P.O. Box 9004
Gurnee, IL 60031-9004

TEL: (847) 689-3000
FAX: (847) 689-3001
TOLL FREE: 1-800-493-9876
F.E.I.N.: 52-2418852

RECEIVED

MAR 11 2013

INVOICE

INVOICE NO.	PAGE NO.
900013	1 of 1
CUSTOMER NO.	DATE
911268	03/05/13

View online at: <http://usabluebook.billtrust.com>
Web Enrollment Token: SLK TVS QDB

BILL TO: 911268
681 1 MB 0.405 E0173X I0217 D644164168 P1371049 0001:0001

SHIP TO: 3

Batch 150516



UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

UTILITIES INC-WTR CORP KY
102 WATER PLANT RD
MIDDLESBORO KY 40965
USA

Doc 505079

Attention: 0004 GARY MILLS

CUSTOMER P.O. NO.	SHIP DATE	SLP	TERMS	TAX CODE	SALES ORDER NO.	W/H	FREIGHT	SHIP VIA	
128292 <i>JYS</i>	03/05/13	DKW	1%/10 NET 30	KY	624870	01	FXD/PPD	UPS	
USA STOCK NO.	DESCRIPTION		ORDERED	SHIPPED	BACKORDER	U/M	PRICE	PER	EXTENSION
61111	Motor 1/20hp -115V-wired		1	1	0	EA	173.80	EA	173.80
13823A	Val-Matic Air /Vacuum Valve 2 102S Threaded		1	1	0	EA	328.34	EA	328.34

THANK YOU for your business!
1.5% MONTHLY FINANCE CHARGE
ON AMOUNTS 30 DAYS PAST DUE
Discounts Apply to Merchandise Only

MERCHANDISE	MISCELLANEOUS	DISCOUNT	TAX	FREIGHT	TOTAL
502.14	0.00	0.00	32.67	42.36	577.17

Should it become necessary to refer your unpaid balance to a collection agency, a collection fee, not to exceed 25% of the balance referred; plus reasonable attorney's fees; and court costs when necessary, will be added to the balance due.

Please Detach and Return Bottom Portion to Insure Proper Credit to Your Account

USABlueBook

Get the Best Treatment™

****IMPORTANT****

Please include this customer #
on the face of your remittance check.

INVOICE NO.	CUSTOMER NO.	DATE	TOTAL
900013	911268	03/05/13	577.17

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

REMITTANCE ADDRESS

UTILITIES INC-WTR SVS CORP KY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6108

3006637



Champion Plumbing, Inc.

3495 State Route 45 S
Mayfield, KY 42066

270-247-9338

RECEIVED

MAR 04 2013

Invoice

Date	Invoice #
2/22/2013	10194

Bill To
UTILITIES, INC. ATT: ACCOUNTS PAYABLE 2335 SANDERS ROAD NORTHBROOK, IL 60062

Batch 149992
 Doc 502692

Project	P.O. No.	Terms	Due Date
	127826	Net 30	3/24/2013

Quantity	Description	Rate	Amount
	BU# 345103		
1	4 x 4 Discharge Connection Pump	975.00	975.00
1	Pump Tank	225.00	225.00
1	Rotary Hammer	45.00	45.00
5	4" Ductile Iron Pipe	11.00	55.00
16	5/8 x 31/2 Bolts & Nuts	2.125	34.00
4	5/8 Drive Anchors	3.00	12.00
1	4 x 6 Flange Reducer	170.00	170.00
2	4" Uni Flange	55.00	110.00
1	6" Flange Kit	50.00	50.00
1	Pump Tank	225.00	225.00
1	Labor	1,160.00	1,160.00

Payments not received by the due date will be subject to a 2% PER MONTH or \$5.00 finance charge (whichever is greater) unless payment arrangements are made. Thank you.

Total **\$3,061.00**

3046667

RICK'S ELECTRIC, INC.
PO BOX 298, 15 ELECTRIC DRIVE
MAYFIELD, KY 42066-0023

RECEIVED

FEB 21 2013

Invoice No.	25057
Page	1

**B
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T
O**
CITY OF CLINTON
112 S JEFFERSON ST
CLINTON KY 42031

**J
O
B
N
O**
13010045
CLINTON LIFT STATION
Batch 149392
Doc 500929

Invoice Date	Invoice No.	Customer No.	Payment Terms	Contract No.
02/20/13	25057	CITY14	Upon Receipt	

Quantity	Description	Unit Price	Extended Price
TROUBLESHOOT LIFT STATION NOT PUMPING, CUSTOMER ONLY ABLE TO RUN MANUALLY. CHECKED AND FOUND CONTROLLER BAD AND TEMPORARILY INSTALLED ANOTHER PLC UNTIL NEW ONE ARRIVES. PROGRAMMED NEW PLC AND INSTALLED AND ALL WORKING.			
M A T E R I A L			
1.00 EA	PUMP CONTROLLER	1247.5300	1,247.53
	TOTAL MATERIAL		1,247.53
L A B O R			
	TOTAL LABOR		538.50
	TOTAL LABOR		538.50
	Total Due This Invoice ----		1,786.03

P.O.# 127544
B.u.# 345103

Gross	Retainage	Tax	Net Amount
1,786.03	.00	.00	1,786.03

Annette Zavilla

From: James Leonard
Sent: Thursday, February 21, 2013 2:25 PM
To: Annette Zavilla
Cc: John Turner; Steve R. Vaughn; Ronnie G. Rushing
Subject: Invoice- Clinton Wastewater Lift Station -2-21-13
Attachments: Rick's Electric Invoice- 2-21-13.pdf

Hi Annette,

Please process the attached invoice for Rick's Electric at your next check run. The P.O. has been receipted.

The Invoice is made out to the City of Clinton however, our (WSCK) operations in Clinton operate the Wastewater system for the City of Clinton KY. (Contract Operation)

The boys in Clinton is the stuff, They, Getter done!!!!!! Like Sunny Pruitt!!!!!!

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp. of KY

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
10308901	2/19/13
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	
FED I.D. # 39-0143280	
GST # 123746141	

Mail all remittances to:
 BOX 88223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

SHIP TO CUSTOMER 0033
 WATER SVC CORP OF KY BU#345101
 100 E JACKSON ST
 CLINTON KY 42031

149392
 500903

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
126241 BU345101	QUOTED FREIGHT	
ORDER DATE	INCO TERMS	TRACKING NUMBER
2/08/13	FCA FACTORY	1Z5899760300040
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
1	UML-0006-6030 B70-LL -AK -NN Ordered: 4.000 Shipped: 4.000 8331 TINDALL-CEN METER MODEL 70 LL (NSF 61-G MTR) METER TYPE MODEL 70 REGISTRATION TRANSMITTER REGISTER (RTR) METER READING SYSTEM ORION MRT OPTIONS FHSS SIZE 1" (1 X 10 3/4) PRODUCTION METHOD STANDARD WATER APPLICATION POTABLE BOTTOM MATERIAL LOW LEAD BRONZE BOTTOM BOLT MATERIAL 430 STAINLESS STEEL BOLTS SEAL BOLT QUANTITY ALL BOLTS THRUST ROLLER PLASTIC TESTING BADGER STANDARD (TS-135) TRANSMITTER APPLICATION INDOOR-OUTDOOR WIRING METHOD FACTORY PRE-WIRED TRANSMITTER MOUNTING MTG KIT, THRU LID SHIPMENT DOMESTIC-GROUND LEAD LENGTH 3 FOOT WARRANTY COVERAGE 20 YEAR COVERAGE PACKAGING FOUR PACK MOUNTING POSITION SIDEWALK READ UNIT OF MEASURE GALLON REGISTRATION FACE STANDARD REGISTER LID / SHROUD PLASTIC SHROUD / PLASTIC LID (BLACK) METER S/N PRIMARY OUTLET BMI 8 DIGIT S/N SEAL SCREW SLOTTED SEAL SCREW PALLETIZING STANDARD	226.900	907.60

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

ORIGINAL INVOICE



Badger Meter, Inc.

4545 W Brown Deer Rd. P.O. Box 245036
 Milwaukee, WI 53224-9536 (414) 355-0400
 For Credit Inquiries - FAX (414)371-5952

INVOICE NUMBER	DATE
10308901	2/19/13
D-U-N-S 00 - 606 - 9710	
NET 30 DAYS	

FED I.D. # 39-0143280
 GST # 123746141

Mail all remittances to:
 BOX 83223
 Milwaukee, WI 53288-0223

SOLD TO CUSTOMER 120660
 UTILITIES INC
 ACCOUNTS PAYABLE
 2335 SANDERS RD
 NORTHBROOK IL 60662-6108

SHIP TO CUSTOMER 0033
 WATER SVC CORP OF KY BU#345101
 100 E JACKSON ST
 CLINTON KY 42031

CUSTOMER PO#	SHIPPING TERMS	FREIGHT CARRIER
126241 BU345101	QUOTED FREIGHT	UPS Ground
ORDER DATE	INCO TERMS	TRACKING NUMBER
2/08/13	FCA FACTORY	1Z5899760300040
PROPOSAL #	FINAL DESTINATION	WAREHOUSE
	UNITED STATES	MM
SPECIAL INSTRUCTIONS		
ADDITIONAL MESSAGES		

LINE	PRODUCT DEFINITION	UNIT PRICE	EXTENDED PRICE USD
	Serial Number: B 44790916 44790919		
	Sub Total		907.60
	Freight		107.71
	Total Tax		60.92
	Total		1,076.23

This Invoice is made subject to the terms & conditions found on our web-site: <http://www.badgermeter.com/Company/Legal/Sales-Terms.aspx>

Goods covered by this invoice were produced in compliance with the provisions of the Fair Labor Standards Act of 1938 as amended.

3046999

RECEIVED

FEB 20 2013

William C. Brewer, P.E.
462 Marsh Road
Barbourville, KY 40906

Batch 149057

Doc 500100

INVOICE

February 20, 2013

Utilities, Inc.
Water Service Corp. of Kentucky
Attn: James Leonard
P.O. Box 818
Middlesboro, KY 40965

P.O.# 126831
B.U.# 345102

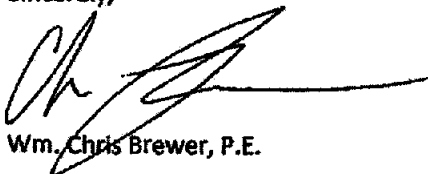
RE: Middlesboro ARH Water Line
INVOICE #3

Dear James:

In accordance with our agreement, the following is hereby submitted for Design services performed to date:

Total Design fee:	\$2,000.00
Percent Complete to date 100%	
Amount Due to Date: 100% of \$2,000.00 =	\$2,000.00
Dow Review Fee	\$ <u>150.00</u>
TOTAL DUE THIS INVOICE	\$2,150.00

Sincerely,


Wm. Chris Brewer, P.E.

Annette Zavilla

From: James Leonard
Sent: Thursday, February 21, 2013 7:45 AM
To: Annette Zavilla; Steve R. Vaughn
Cc: Greg Bolt
Subject: RE: Invoice for Engineering- Middlesboro KY
Attachments: William C. Brewer Invoice#3- 2-21-13.pdf

Take 3,

Invoice # 3 William C. Brewer.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp. of KY

From: Annette Zavilla
Sent: Wednesday, February 20, 2013 3:06 PM
To: Steve R. Vaughn; James Leonard
Cc: Greg Bolt
Subject: RE: Invoice for Engineering- Middlesboro KY

Sounds Like A Plan!

Thanks

From: Steve R. Vaughn
Sent: Wednesday, February 20, 2013 12:57 PM
To: Annette Zavilla; James Leonard
Cc: Greg Bolt
Subject: RE: Invoice for Engineering- Middlesboro KY

Good Afternoon Annette,

James is traveling today, and he asked me to let you know, that he will be getting you the corrected invoice tomorrow.

Have a great day!

Steve Vaughn
Operations Administrative Assistant
Utilities, Inc.
102 Water Plant Road
Middlesboro, KY 40965
P 606-248-2306
F 606-248-0180
M 606-269-1533
srvaughn@uiwater.com

From: Annette Zavilla
Sent: Wednesday, February 20, 2013 11:58 AM
To: James Leonard
Cc: Steve R. Vaughn; Greg Bolt
Subject: FW: Invoice for Engineering- Middlesboro KY

Good Morning Sunshine!

The William C. Brewer Saga Continues! We already paid Invoice #1 and the system will not allow a duplicate payment.

I think that they forgot to change the Invoice # when typing the attached Invoice. If they can re-type the Invoice or just change the Invoice # to 3 we can pay it.

Thanks,

Annette

From: James Leonard
Sent: Tuesday, February 19, 2013 3:41 PM
To: Annette Zavilla
Cc: Steve R. Vaughn; Greg Bolt
Subject: RE: Invoice for Engineering- Middlesboro KY

Annette,

Allow me to provide you a corrected copy of the Invoice.

Thank you,
James Leonard

From: Annette Zavilla
Sent: Tuesday, February 19, 2013 4:32 PM
To: James Leonard
Cc: Steve R. Vaughn; Greg Bolt
Subject: FW: Invoice for Engineering- Middlesboro KY

Hi James,

PO # 126241 is for Badger Meter.

Annette

From: James Leonard
Sent: Tuesday, February 19, 2013 3:05 PM
To: Annette Zavilla
Cc: Steve R. Vaughn; Greg Bolt
Subject: Invoice for Engineering- Middlesboro KY

Hi Annette,

Please process the attached invoice for William C. Brewer, P.E.

The P.O. has been receipted.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp. of KY

Annette Zavilla

From: James Leonard
Sent: Tuesday, February 19, 2013 3:41 PM
To: Annette Zavilla
Cc: Steve R. Vaughn; Greg Bolt
Subject: RE: Invoice for Engineering- Middlesboro KY
Attachments: William C. Brewer Inviocce- 2-19-13.pdf

Annette,

Allow me to provide you a corrected copy of the Invoice.

Thank you,
James Leonard

Annette Zavilla

From: James Leonard
Sent: Tuesday, February 19, 2013 3:37 PM
To: Annette Zavilla
Cc: Steve R. Vaughn; Greg Bolt
Subject: RE: Invoice for Engineering- Middlesboro KY

I'm sorry, I gave you the incorrect P.O.#

The correct P.O. # is 126831

James

From: Annette Zavilla
Sent: Tuesday, February 19, 2013 4:32 PM
To: James Leonard
Cc: Steve R. Vaughn; Greg Bolt
Subject: FW: Invoice for Engineering- Middlesboro KY

Hi James,

PO # 126241 is for Badger Meter.

Annette

From: James Leonard
Sent: Tuesday, February 19, 2013 3:05 PM
To: Annette Zavilla
Cc: Steve R. Vaughn; Greg Bolt
Subject: Invoice for Engineering- Middlesboro KY

Hi Annette,

Please process the attached invoice for William C. Brewer, P.E.

The P.O. has been receipted.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.

RECEIVED

FEB 19 2013

William C. Brewer, P.E.
462 Marsh Road
Barbourville, KY 40906

INVOICE

February 19, 2013

Utilities, Inc.
Water Service Corp. of Kentucky
Attn: James Leonard
P.O. Box 818
Middlesboro, KY 40965

**RE: Middlesboro ARH Water Line
INVOICE #1**

Dear James:

In accordance with our agreement, the following is hereby submitted for Design services performed to date:

Total Design fee:	\$2,000.00
Percent Complete to date 100%	
Amount Due to Date: 100% of \$2,000.00 =	\$2,000.00
Dow Review Fee	<u>\$ 150.00</u>
TOTAL DUE THIS INVOICE	\$2,150.00

Sincerely,



Wm. Chris Brewer, P.E.

P.O.# 126241
B.U.# 345102

3009296

RECEIVED

FEB 19 2013

INVOICE



WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION
FIRE, RESCUE AND SAFETY EQUIPMENT

P.O. Drawer 459-1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE	
6490814	
Invoice Date	Page
2/13/2013 14:55:17	1 of 1
ORDER NUMBER	
1506866	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch 148973

Doc 499561

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
126239 BU 345103	Net 30	3/15/2013	3/15/2013	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
2/1/2013 13:18:05	3510851	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID Item Description	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production				

Customer Note: BUSINESS UNIT # 345101

Carrier: OUR TRUCK

Tracking #:

42	42	0		RR3034-10-14 10" SDR35 RR SEWER PIPE 14FT LENGTHS	FT	6.1300	257.46
42	42	0		RR3034-6-14 6 SDR35 PVC RR SEWER PIPE 14' LENGTHS	FT	2.1800	91.56
2	2	0		102-1010 10 X 10 CLAY X CI. PL FERNCO COUPL	EA	24.6000	49.20
4	4	0		156-66 6 X 6 CI.PL.XCI.PL. FERNCO COUPL	EA	10.7000	42.80
2	2	0		223-0006SW 6 PVC SW SEWER 90 ELL	EA	8.0500	16.10

Total Lines: 5

Total Freight In: 0.00

Total Freight Out: 30.00

SUB-TOTAL: 457.12
TOTAL FREIGHT: 30.00
KENTUCKY STATE TAX: 29.23
AMOUNT DUE: 516.35

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re -stocking charge. All custom or non-stock items are non-returnable.

3007768



3001 Armory Dr., Suite 100
Nashville, TN 37204-3711
www.adssecurity.com
1-877-309-4370

RECEIVED
FEB 11 2013

INVOICE

Customer Number: 23036
Invoice Number: 11207057
Invoice Date: 01/16/13
P.O. Number: 345101
Due Date: DUE ON RECEIPT
Amount Due: \$330.00

Address Service Requested

Please check here if your billing address has changed, and provide your new address on the reverse side.

0475001064 PRESORT MAAD P1 C4
1064 1 HB 0.405



UTILITIES INC
ATTN: ACCOUNTS PAYABLE
2335 SANDERS RD
NORTHBROOK IL 60062-6196

Amount Enclosed: \$ _____

Please write your account number on your check.
Use the enclosed envelope and make checks payable to:

ADS SECURITY
P.O. BOX 2252
BIRMINGHAM, AL 35246-0034



00000023036000330001

Batch 148446
Doc 497854

To ensure prompt credit, please return the above portion with your payment



3001 Armory Dr., Suite 100
Nashville, TN 37204-3711
www.adssecurity.com
1-877-309-4370

Service Address: Water Service Corp. Of Ky
100 East Jackson Street
Clinton, KY 42031

Account Information

Account Number: 23036
Invoice Number: 11207057
Invoice Date: 01/16/13
P.O. Number: 345101

Summary of Charges

Description	Qty	Unit Price	Amount
On Site Service (803320)			
Water Service Corp. Of Ky 100 East Jackson Street, Clinton, KY 42031			
19" Widescreen HD LED Mnt'r VGR Only	1.00	200.00	200.00
Service Call (incl trip + 1st 30 min)	1.00	80.00	80.00
Labor (over 1st 30 min)	0.50	100.00	50.00
Sales Tax			0.00
Current Charges			\$330.00
Payments - Thank You			\$0.00
Credits			\$0.00
Late Fees			\$0.00
Prior Credits			\$0.00
Total Amount Due			\$330.00

replaced monitor.

Important Messages

Protect Yourself from Fire this Winter Season.

According to the U.S. Fire Administration, more fires are reported during the winter than any other season of the year. For this reason, take some time to make sure your home or business is prepared to detect smoke and fire.

Monitored smoke detectors are your best line of defense against fire. Be sure to test your smoke detectors regularly. For instructions on how to properly test your monitored smoke detectors, please visit adssecurity.com/smoke_detector_test.

Call 1-800-237-9311 to add monitored smoke detectors to your ADS system today.

P.O. # 126844
B.u. # 345101



Have a question? Connect with us online! facebook.com/adssecurity twitter.com/adssecurity

Contact us at 1-877-309-4370 or via fax at 615-383-5973 for questions regarding your invoice or visit our website at www.adssecurity.com.

Annette Zavilla

From: James Leonard
Sent: Tuesday, February 12, 2013 9:19 AM
To: Annette Zavilla
Cc: Steve R. Vaughn; John Turner
Subject: RE: ADS Security Invoice # 11207057
Attachments: ADS Security P.O.#126844.pdf

Here you go Annette, P.O. receipted.

James Leonard

Annette Zavilla

From: James Leonard
Sent: Tuesday, February 12, 2013 8:55 AM
To: Annette Zavilla
Subject: RE: ADS Security Invoice # 11207057

I don't have one, I'll have to create one and receipt, then send back to you.

James

From: Annette Zavilla
Sent: Tuesday, February 12, 2013 9:52 AM
To: James Leonard
Subject: ADS Security Invoice # 11207057

Mornin' James,

Do you know the Received PO # that applies to the attached ADS Security Invoice # 11207057?

Thanks,

Annette



Consolidated Pipe & Supply Co., Inc.

PO#125351

95 BRIAN'S WAY
SOMERSET KY 42501INVOICE DATE
1/30/2013RECEIVED
FEB 04 2013

INVOICE NUMBER 2230129-000-000
PAGE 1 OF 1

Original InvoiceAccount No.
220148SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062
JOB: WATER SERVICE OF KY
MIDDLEBORO, KY

SOLD TO:

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK IL 60062Batch 147955
Doc 496624

Customer Order No.		Terms of Sale		Ship Via				
PO#125351 <i>345</i>		NET 30		OUR TRUCK 5037				
Freight		F.O.B.		Ship Date				
PREPAID		SHIPPING POINT		1/29/2013				
Ship From		Ship From		Ship From				
CPS-SOMERSET		CPS-SOMERSET		CPS-SOMERSET				
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount
1	9	9		235157	5/8 MUL B-2404-R SETTER W/BV	60.00	EA	540.00
2	18	18		202816	5/8X3/4 MUL H14222 MULTI ENDS	9.53	EA	171.54
3	10	10		202279	3/4 MUL H15403 COMP UN	14.09	EA	140.90
					STATE SALES TAX - ILLINOIS			53.28
Invoice Amount								905.72

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
3-22-0131/22

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE



Consolidated Pipe & Supply Co., Inc.

PO#125351

95 BRIAN'S WAY
SOMERSET KY 42501INVOICE DATE
1/30/2013RECEIVED
FEB 04 2013INVOICE NUMBER
2230129-000-000PAGE
1 OF 1**Original Invoice**Account No.
220148SHIP TO: UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD

NORTHBROOK IL 60062

JOB: WATER SERVICE OF KY
MIDDLEBORO, KYBatch 147955Doc 496624

SOLD TO:

UTILITIES INC. SERV
WATER SERVICE OF KY
2335 SANDERS RD
NORTHBROOK

IL 60062

Customer Order No.		Terms of Sale		Ship Via				
PO#125351 <i>345</i>		NET 30		OUR TRUCK 5037				
Freight		F.O.B.		Ship Date				
PREPAID		SHIPPING POINT		1/29/2013				
Ship From		Ship From		Ship From				
CPS-SOMERSET		CPS-SOMERSET		CPS-SOMERSET				
Line No.	Ordered	Shipped	Back Ordered	Product No.	Description	Unit Price	Per	Sales Amount
1	9	9		235157	5/8 MUL B-2404-R SETTER W/BV	60.00	EA	540.00
2	18	18		202816	5/8X3/4 MUL H14222 MULTI ENDS	9.53	EA	171.54
3	10	10		202279	3/4 MUL H15403 COMP UN	14.09	EA	140.90
					STATE SALES TAX - ILLINOIS			53.28
Invoice Amount								905.72

SERVICE CHARGES BASED ON LEGAL RATE, OR 1.5% PER MONTH ARE ASSESSED ON OVERDUE AMOUNTS.
3-22-0131/22

REMIT TO: DEPT. 3147 P.O. BOX 2153 BIRMINGHAM, AL. 35287-3147

TERMS AND CONDITIONS ARE LISTED ON REVERSE SIDE

3009296

RECEIVED

FEB 04 2013

INVOICE

G & C SUPPLY CO., Inc.

WATER, SEWER & GAS DIVISION
SIGNS & SAFETY DIVISION
FIRE, RESCUE AND SAFETY EQUIPMENT

P.O. Drawer 459—1105 Hwy 77
Atwood, TN 38220
(731)662-7193 or (800)238-3836
Fax: (731)662-7219

INVOICE	
6489726	
Invoice Date	Page
1/31/2013 10:55:18	1 of 1
ORDER NUMBER	
1506173	

Bill To:

WATER SERVICE CORP OF KENTUCKY
ATTN: ACCOUNTS PAYABLE
2335 SANDERS ROAD
NORTHBROOK, IL 60062

Ship To:

WATER SERVICE CORP OF KENTUCKY
100 EAST JACKSON ST.
NO TRUCK CHARGE
CLINTON, KY 42031

Batch 147955
Doc 496579

Customer ID: 1351

PO Number	Term Description	Net Due Date	Disc Due Date	Discount Amount
125606/345101	Net 30	3/2/2013	3/2/2013	0.00

Order Date	Pick Ticket No	Primary Salesrep Name	Taker
1/22/2013 11:20:12	3510138	Jeff Wallace	NBRYANT

Quantities			Status Key	Item ID Item Description	Unit	Unit Price	Extended Price
Ordered	Shipped	Remaining	B = Backorder D = Direct C = Canceled P = In Production				

Customer Note: BUSINESS UNIT # 345101

Carrier: SALESMEN

Tracking #:

1	1	0		115-DC385K 18 VOLT DEWALT CORDLESS RECIPROCATING SAW XRP BATTERY	EA	239.8500	239.85
1	1	0		115-DC720KA 18V DEWALT CORDLESS HEAVY DUTY DRILL WITH 2 BATTERIES, CHARGER, AND CASE	EA	229.0000	229.00
1	1	0		115-DW4809 DEWALT RECIPROCATING BLADE 6" LONG 14 TEETH PER INCH (5PK)	EA	13.9500	13.95

Total Lines: 3

SUB-TOTAL: 482.80
KENTUCKY STATE TAX: 28.97
AMOUNT DUE: 511.77

Thank You!! We Really Appreciate Your Business! FED. I. D. 620912993

To Better Serve You - We Now Accept Visa, MasterCard, American Express, Discover and Debit Cards

ORIGINAL

All returns may be subject to a manufacturers re -stocking charge. All custom or non-stock items are non-returnable.

Annette Zavilla

From: Gary Mills
Sent: Thursday, January 31, 2013 1:09 PM
To: Annette Zavilla
Cc: James Leonard
Subject: L&M Electric Invoice
Attachments: L&M Electric Invoice 1-31-13.pdf; L&M Electric Certificate of Insurance 1-31-13.pdf

Hello Annette,

I have attached a invoice and certificate of insurance for L&M Electric. They installed a phase monitor in our switch gear box for the raw water pump station generator.
Could you Please process for me?

Thanks,

Gary Mills
Lead Operator
Water Service Corporation of Kentucky
102 Water Plant Road
P.O Box 818
Middlesboro, Ky. 40965
Phone # 606-248-2306
Cell # 606-269-4249
Fax # 606-248-0180
wgmills@uiwater.com



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
01/31/2013

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER		CONTACT NAME:	
Gary A Campbell Inc 110 COURT SQ BARBOURVILLE KY 40006		PHONE (A/C No. Ext):	FAX (A/C No.):
		ADDRESS:	
		INSURERS AFFORDING COVERAGE	
		INSURER A: NATIONWIDE MUTUAL INSURANCE COMPANY	SAC#: 23787
INSURED		INSURER B:	
L & M ELECTRIC 548 HUBBARD BRANCH RD SCALF KY 40062-6519		INSURER C:	
		INSURER D:	
		INSURER E:	
		INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

TYPE OF COV	TYPE OF INSURANCE	ADDL NUMBER (SAC, SPOD)	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY		ACP GLO 8614906810	05/15/2012	05/16/2013	EACH OCCURRENCE \$ 2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY					DAMAGE TO RENTED PREMISES (Per occurrence) \$ 100,000
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR					MED EXP (Any one person) \$ 5,000
						PERSONAL & ADV INJURY \$ 2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:					GENERAL AGGREGATE \$ 2,000,000
	<input checked="" type="checkbox"/> POLICY <input type="checkbox"/> PREM <input type="checkbox"/> LOC					PRODUCTS - COMP/OP AGG \$ 2,000,000
	AUTOMOBILE LIABILITY					COMBINED SINGLE LIMIT (Per accident) \$
	ANY AUTO					BODILY INJURY (Per person) \$
	ALL OWNED AUTOS					BODILY INJURY (Per accident) \$
	HIRE/AUTOS					PROPERTY DAMAGE (Per accident) \$
	SCHEDULED AUTOS					\$
	NON-OWNED AUTOS					\$
	UMBRELLA LIAB					EACH OCCURRENCE \$
	EXCESS LIAB					AGGREGATE \$
	RETENTION \$					\$
	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY					WC STATUTORY LIMITS OTHER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	Y/N	N/A			E.L. EACH ACCIDENT \$
	If yes, describe under DESCRIPTION OF OPERATIONS below					E.L. DISEASE - EA EMPLOYEE \$
						E.L. DISEASE - POLICY LIMIT \$

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Addressed Remarks Schedule, if more space is required)

CERTIFICATE HOLDER	CANCELLATION
UTILITIES INC PO BOX 818 MIDDLESBORO KY 40065	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE Gary A Campbell

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Be Right™

RECEIVED

JAN 28 2013

INVOICE NUMBER 8113636

DATE: 01/21/2013

Page: 1

Batch 147417

TOTAL: \$68.16

Doc 495289

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

Have you ordered online?
Order at WWW.HACH.COM

81136368 000468140 00000006816 012113

Sort Seg: 1486

Tray: 11

DETACH HERE

Original

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WATER SERVICE CORP OF KENTUCKY
2335 Sanders Rd
Northbrook, IL 60062-6108
United States

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WATER SERVICE CORP OF KENTUCKY
MILLS, GARY
102 WATER PLANT RD
MIDDLESBORO, KY 40965
United States

INVOICE NO	8113636	DATE:	01/21/2013
PURCHASE ORDER NUMBER	124942 BUS UNIT# 345102, 1195		
TERMS	Net 30 Days From Invoice Date		
FREIGHT	Prepay And Bill Customer		
CARRIER	RPS-RPS**FedEx- -Ground		
ACCOUNT	046814		
REF. NO.	312475432-2		

Remit to:

Hach Company
2207 Collections Center Dr
Chicago, IL 60693
Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

LN#	PRODUCT DESCRIPTION	ITEM NO.	QUANTITY	UNIT PRIC	EXT. PRICE
1	REAGENT SET, ULTRA LOW CHLORINE *TRACKING NUMBERS: 050316370297830	2563000	1	45.55	45.55
2	CYLINDER, GRADUATED 50ML TC WHITE *TRACKING NUMBERS: 050316370297830	50841	1	18.75	18.75

ORDER CONTACT:
GARY MILLS

SUBTOTAL 64.30

TAX 3.86

Notes: INVOICE TOTAL 68.16

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE, PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



Other brands from Hach

Annette Zavilla

From: James Leonard
Sent: Thursday, January 24, 2013 11:03 AM
To: Annette Zavilla
Cc: Gary Mills; Bruce Haas
Subject: Gary Mills Petty Cash reimbursement 1-24-13
Attachments: Gary Mills Petty Cash 1-24-13.pdf; Gary Mills Petty Cash reimbursement 1-24-13.pdf

Hi Annette,

Please process this Petty Cash reimbursement for Gary Mills.

Thank you,
James Leonard, Regional Manager
Utilities, Inc.
Water Service Corp. of KY



2030 US HIGHWAY 25 E
MIDDLESBORO, KY 40965
606-246-2345

Ticket: 228601
Date: 1/11/13
Store: 1396
Cashier: 00206166
Time: 8:02 AM
Register: 2

Item	Qty	Price	Amount
1 HP STAINLESS STEEL PORTABLE UTILITY 1028136	1	169.99	169.99
		Subtotal	169.99
		Tax	10.20
		Total	180.19

[REDACTED]

MIDDLESBORO MPO
MIDDLESBORO, Kentucky
409659998
2047860861 -0099
12/04/2012 (606)248-3590 12:02:32 PM

Product Description	Sale Qty	Unit Price	Final Price
FRANKFORT KY 40601 Zone-2 First-Class Letter 0.50 oz. Expected Delivery: Thu 12/06/12 Return Rcpt (Green Card) Certified Label #: 70092250000116622247			\$0.45 \$2.35 \$2.95
Issue PVI:			\$5.75
FRANKFORT KY 40601 Zone-2 First-Class Letter 0.50 oz. Expected Delivery: Thu 12/06/12 Return Rcpt (Green Card) Certified Label #: 70092250000116622254			\$0.45 \$2.35 \$2.95
Issue PVI:			\$5.75
LONDON KY 40741 Zone-1 First-Class Large Env 3.00 oz. Expected Delivery: Wed 12/05/12 Return Rcpt (Green Card) Certified Label #: 70113500000338209527			\$1.30 \$2.35 \$2.95
Issue PVI:			\$6.60
FRANKFORT KY 40601 Zone-2 First-Class Large Env 3.00 oz. Expected Delivery: Thu 12/06/12 Return Rcpt (Green Card) Certified Label #: 70113500000338209534			\$1.30 \$2.35 \$2.95
Issue PVI:			\$6.60
Total:			\$24.70

MIDDLESBORO MPO
MIDDLESBORO, Kentucky
409659998
2047860861 -0098
01/11/2013 (606)248-3690 10:16:28 AM

Product Description	Sales Receipt		Final Price
	Sale Qty	Unit Price	
FRANKFORT KY 40601 Zone-2 First-Class Large Env 0.90 oz.			\$0.90
Expected Delivery: Mon 01/14/13			
Return Rcpt (Green Card)			\$2.35
Certified			\$2.95
Label #:	70101670000148493937		=====
Issue PVI:			\$6.20
Total:			\$6.20
Paid by:			
Cash			\$7.00
Change Due:			-\$0.80

MIDDLESBORO MPO
MIDDLESBORO, Kentucky
409659998
2047860861 -0099
12/14/2012 (606)248-3690 11:19:36 AM

Product Description	Sales Receipt		Final Price
	Sale Qty	Unit Price	
FRANKFORT KY 40601 Zone-2 First-Class Large Env 0.90 oz.			\$0.90
Expected Delivery: Mon 12/17/12			
Return Rcpt (Green Card)			\$2.35
Certified			\$2.95
Label #:	70113500000338209541		=====
Issue PVI:			\$6.20
Total:			\$6.20
Paid by:			

300092



Be Right™

INVOICE NUMBER 8109270

DATE: 01/17/2013

Page: 1

Batch 147015

TOTAL: \$1,245.77

Doc 493659

DETACH TOP PORTION AND RETURN WITH PAYMENT TO:

Hach Company
2207 Collections Center Drive
Chicago, IL 60693
Phone: (800) 227-4224

Have you ordered online?
Order at WWW.HACH.COM

81092702 000468140 00000124577 011713

Sort Seg: 373

Tray: 7

DETACH HERE

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WATER SERVICE CORP OF KENTUCKY
2335 Sanders Rd
Northbrook, IL 60062-6108
United States

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WATER SERVICE CORP OF KENTUCKY
MILLS, GARY
102 WATER PLANT RD
MIDDLESBORO, KY 40965
United States

INVOICE NO	8109270	DATE:	01/17/2013
PURCHASE ORDER NUMBER	124942 BUS UNIT# 345102		
TERMS	Net 30 Days From Invoice Date		
FREIGHT			
CARRIER			
ACCOUNT	046814	Remit to:	
REF. NO.	312475432-1		

Hach Company
2207 Collections Center Dr
Chicago, IL 60693
Phone: (800) 227-4224

These commodities are sold, packaged, marked, and labeled for destinations in the United States. Exportation of these commodities may require special licensing, packaging, marking or labeling.

LN#	PRODUCT DESCRIPTION	ITEM NO.	QUANTITY	UNIT PRIC	EXT. PRICE
2	db POUR-THRU CELL KIT (1") - DR5000	LZV479	1	1,115.30	1,115.30

ORDER CONTACT:
GARY MILLS

SUBTOTAL	1,115.30
FREIGHT CHARGES	59.95
TAX	70.52
INVOICE TOTAL	1,245.77

Notes:

PURCHASE AND ACCEPTANCE OF PRODUCT(S) SUBJECT TO HACH COMPANY'S TERMS AND CONDITIONS OF SALE,
PUBLISHED ON HACH COMPANY'S WEBSITE AT WWW.HACH.COM/TERMS

For order discrepancies or product exchanges please call 800-227-4224 or 970-669-3050 to obtain Return Authorization.

FEDERAL TAX ID # 42-0704420



Other brands
from Hach

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

22. Refer to WSKY's response to the Second Request, Item 40. The general ledger provided in this response, while sorted by account title, does not have totals to demonstrate that the account balances on the general ledger are the same balances that appear on the trial balance. Provide a revised general ledger that includes the total dollar amount of transactions for each account and the grand total for that account.

Response: Please see the attached file labeled "*Staff DR 3.22 – General Ledger*" for the Company's response. Column D on the tab labeled "Summary" is the total dollar amount of transactions for each account during the test-year, and Column E is the grand total for that account, which is what is shown in the trial balance of the filing.

Witness: Brian Halloran

Staff DR 3.22

General Ledger

(see attached Excel file)

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

23. Refer to WSKY's response to the Staff's Second Request, Item 41. In its response, WSKY provided a redacted version of the Mercer Customer Compensation Survey (UI) that was previously filed with a petition for confidentiality in response to Staff's First Request, Item 13. Provide any and all survey information compiled by Mercer that was used on WSKY's or Utilities Inc's behalf to generate the spreadsheet provided in its response.

Response: Please refer to the attached file labeled "*Staff DR 3.23 – Mercer Survey Data*" for the information that was compiled by Mercer that was used on behalf of the Company to generate the spreadsheet provided in response to Staff DR 2.41.

Witness: Steve Lubertozi

Staff DR 3.23

Mercer Survey Data

*Filed under a Petition
for Confidentiality*

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

24. Refer to WSKY's response to Staff's Second Request, Item 6.b.
- a. Provide a copy of this historical service agreement.
 - b. Explain in detail how it is consistent with what was approved in the last rate case for fire protection services.

Response:

- a. Please refer to the response to AG DR 2.3.a. for the Company's response.
- b. The Company did not include this customer in the last rate case for fire protection services, but the Company has since corrected the customer's account to fix the error in the initial set-up of this customer in our billing system.

Witness: Brian Halloran

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

25. Refer to WSKY's response to Staff's Second Request, Item 37.

a. Did WSKY consider other rate design structures that would send a conservation signal to its customers?

b. Would WSKY consider such a change in rate design in the future? Explain why or why not?

Response:

a. The Company did consider using an inclining block structure rate design, but some large commercial and industrial customers would be burdened by this structure. WSKY did not want any commercial or industrial customers to leave the area or go out of business due to the large increase in water service costs caused by an inclining block structure.

b. Though it is not clear which rate design the Company is being asked to consider, the Company would consider utilizing other rate designs in the future.

Witness: Brian Halloran

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

26. a. Explain why the Commission should consider it appropriate to set fire protection rates using an across-the-board increase of approximately 24.62 percent when WSKY did not include in the rate study, provided in the Application, an analysis of the cost of providing fire protection services.

b. Explain why increasing these fees is appropriate without the true cost of service for fire protection being determined.

Response:

a. The Commission has historically authorized WSKY to increase its rates in an across-the-board manner, for metered customers as well as fire protection customers. The Company's current proposal for fire protection fee increases is consistent with prior Commission approval, where no true cost of service on fire protection had been performed. Again, the Company did not hire a cost-of-service study expert for this rate case in order to keep rate case expense to a minimum.

b. The Company believes it is appropriate to increase the current Fire Protection rates by 24.62% because the total revenue requirement could not be obtained for the utility without increasing the rates for fire protection services. If the fire protection rates are not increased, it would be necessary to increase proposed rates from metered customers.

Witness: Justin Kersey

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

27. Refer to WSKY's response to Staffs Second Request, Item 22.f.

a. Explain why Backflow Prevention Devices should not be treated under NARUC Account Number 345 - Services with a depreciation rate range of 2.0 percent to 3.3 percent

b. Explain why Transportation Equipment should not be treated under NARUC Account Number 392 - Transportation Equipment with a depreciation rate range of 12.9 percent

c. Provide documentation for the depreciation rates for the Mainframe Computer, Mini Computers, Computer System Cost, and Micro System Cost.

Response:

a. The Company does not object to treating the "Backflow Prevention Devices" account under NARUC Account Number 345 – Services with a depreciation rate range of 2.0 percent to 3.3 percent.

b. The Company believes it should not be treated with a depreciation rate range of 12.9%, per the 1979 NARUC Study, which includes an adjustment for salvage value. UI uses a 5 year depreciation life for Transportation Equipment and does not account for salvage value on its books. The Company believes that we should use this life to remain consistent within UI.

c. The depreciation rates for the Mainframe Computer, Mini Computers, Computer System Cost, and Micro System Cost accounts are appropriate and are consistent with what was approved by the Kentucky Commission in Case No. 2013-00237. Please refer to "Staff DR 2.7" in Case No. 2013-00237.

CASE No. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

Witness: Brian Halloran

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

28. Refer to WSKY's Application, Exhibit 4, Workpaper d, and its response to Staff's First Request, Item 9.a. As detailed in Item 9.a. and summarized in the table below, WSKY has requested rate recovery of \$226,041 for its allocated share of the total pro forma wages of 90 centralized Water Service Corp. employees.

<u>Centralized Division</u>	<u>Pro forma Wages</u>	<u>WSKY Allocation Factor</u>	<u>Pro forma Allocated to WSKY</u>	<u>Pro forma Allocated to Others</u>
Northbrook	\$3,274,986	0.0264	\$ 86,437	\$3,188,549
Regional Management	780,273	0.1394	108,759	671,514
Customer Service	<u>1,168,676</u>	0.0264	<u>30, 845</u>	<u>1,137,831</u>
Total	<u>\$5,223,935</u>		<u>\$226,041</u>	<u>\$4,997,894</u>

In Workpaper d, WSKY requests recovery, as a part of the rate case expense of this proceeding, \$79,387 for wages of nine centralized employees whose wages are also included in the pro forma wage allocation shown in the table above. Considering the table above accounts for 100 percent of all of Water Service Corp.'s pro forma centralized wages, explain why it is necessary and appropriate for the pro forma wages of the nine employees to also be included as a part of rate case expense.

Response: It is necessary to include the wages as part of rate case expense, for the nine employees in question, as the Company has proposed removal of this same expense through its "Operating Exp. Charged to Plant" line. The pro forma Operating Exp. Charged to Plant amount of \$155,249 is broken down in the attached file, "Staff DR 3.28 - Capitalized Time"

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

and is allocated as \$128,787 to operations capitalized time and \$26,462 to rate case capitalized time. Below is the breakdown of rate case capitalized time, by the nine employees in question. Be advised the amount removed from Operating Exp. Charged to Plant (\$26,462) is exactly the same amount amortized through rate case expense ($\$79,387/3 = \$26,462$). If the capitalized time proposed in rate case expense is to be eliminated, Operating Exp. Charged to Plant must be offset by an amount equal to the annual impact of the elimination.

Rate Case Capitalized Time

<u>Employee Name</u>	<u>Capitalized Time</u>	<u>Annual Allocation</u>	<u>Pro Forma Capitalized Time</u>
Guttormsen, Robert A	(9,400)	33.33%	(3,133)
Neyzelman, Dimitry	(2,884)	33.33%	(961)
Halloran, Brian	(19,000)	33.33%	(6,333)
Haas, Bruce T. (Rate Case)	(6,960)	33.33%	(2,320)
Kersey, Justin P.	(18,300)	33.33%	(6,100)
Leonard, James R. (Rate Case)	(3,053)	33.33%	(1,018)
Lubertozzi, Steven M.	(13,100)	33.33%	(4,367)
Ortega, Jennifer	(290)	33.33%	(97)
Shareef, Azfar	(6,400)	33.33%	(2,133)
Total Rate Case Capitalized Time	<u>\$ (79,387)</u>		<u>\$ (26,462)</u>

Witness: Brian Halloran

Staff DR 3.28

Capitalized Time

(see attached Excel file)

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

29. Refer to WSKY's response to Staffs First Request, Item 9.a. In the schedule that was provided for this response, the pro forma salaries were divided into four categories that are specific to WSKY operations: Maintenance Employees, Customer Service Personnel, Northbrook Employees, and Regional Management. Provide the Pro Forma Wages for the other employees who represent regional management for the other subsidiaries of Water Service Corporation. This information should include the wages, which subsidiary that the employees have wages allocated to, and the allocation percentages that are used by Water Service Corporation to these subsidiaries.

Response: Please refer to the attached file, "*Staff DR 3.29 – Regional Mgmt Salaries*", which contains regional management wages allocated to their respective subsidiaries.

Witness: Brian Halloran

Staff DR 3.29

Regional Mgmt Salaries

(see attached Excel file)

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

30. Refer to WSKY's response to the Attorney General's Initial Request for Information, Item 9, and the response to Staff's Second Request, Item 36.

a. Explain how this study was developed and who within Utilities, Inc. developed this study.

b. Will the individual who developed the study be available at the hearing to explain the development of the study?

Response:

a. This study was developed by the Illinois Commerce Commission and given to Utilities, Inc. to assist in the process of ratemaking.

b. No, they will not be available.

Witness: Justin Kersey

CASE NO. 2015-00382

WATER SERVICE CORPORATION OF KENTUCKY

RESPONSES TO COMMISSION STAFF'S THIRD REQUEST FOR INFORMATION

31. Refer to WSKY's response to Staff's Second Request, Item 7, Exhibit 2.07. The order from Illinois Commerce Commission for docket 14-0741, page 25, states, "The Company indicated that it will provide a COSS consistent with the American Water Works Association's Water Rate Manual M1, Sixth Edition." Will WSKY commit the same to the Kentucky Public Service Commission, a full COSS, including fire protection, for its next rate case?

Response: Yes, the Company would agree assuming the PSC agrees to allow full recovery of the costs within the Company's next rate case.

Witness: Brian Halloran