

**SEATTLE PUBLIC UTILITIES REVENUE CYCLE AUDIT
– WATER (Retail and Wholesale)
Internal Controls Review**

March 1, 2010

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March 1, 2010

The Honorable Mike McGinn
Seattle City Councilmembers
City of Seattle
Seattle, Washington 98104

Dear Mayor McGinn and City Councilmembers:

Attached is our report on *Seattle Public Utilities Revenue Cycle Audit – Water*. The audit’s primary objectives were to determine whether internal controls surrounding the billing and collection of fees for Seattle Public Utilities’ (SPU) water services, including wholesale water services, were adequate. This report is one part of an audit of the revenue cycle of all of the SPU primary utility services - Drainage, Solid Waste, Water, and Wastewater. The report for the Drainage Revenue Cycle audit was issued on February 8, 2007, Transfer Stations was issued on February 14, 2008, Commercial Solid Waste was issued on April 9, 2008, and the reports for the remaining modules of the audit (i.e., Wastewater, Residential Solid Waste, and SPU Combined Billing Processes) will be issued as the work is completed. We selected the SPU utility services revenue cycle for audit due to the magnitude of its revenue stream, which is over \$400 million annually.

We appreciate the excellent cooperation of SPU management and staff during the review process, and that of other City departments. SPU’s response to our review is included under the ‘Actions Planned’ section for each issue listed in the report.

Sincerely,

David Jones
City Auditor

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CHAPTER 1: INTRODUCTION AND BACKGROUND

Seattle Public Utilities (SPU) provides water services to residential, commercial, and wholesale water customers. SPU owns two watersheds, Tolt River and Cedar River, which supply all of SPU's water. SPU supplies the water, distributes it to customers through its distribution infrastructure of water mains and pipes, and measures customer water consumption through its system of water meters. SPU bills customers for their water consumption at current water rates. In 2008, SPU received over \$150 million for water services. (See Appendix 1 for data on water revenues for the past 5 years.)

Our office evaluated the internal controls governing the charging and collecting of fees for SPU's water services. We evaluated the policies, procedures, and operations involved in these processes.

RESULTS IN BRIEF

Overall, we found that SPU had adequate internal controls for charging and collecting water services fees. While we identified no areas within SPU's water services revenue cycle with significant problems, we found several opportunities for improving controls.

SPU could improve its procedures for reviewing water meter reading potential exceptions and its process for identifying malfunctioning meters. SPU's recent testing of commercial and wholesale customer meters indicate a fair number of issues with meter functioning and highlight the importance of SPU's regular meter testing program for these larger and more complex high usage meters. Customers who make deposits (called guaranteed deposits) for new water connection work are not consistently billed or refunded in a timely manner. SPU provides unusually long payment terms to wholesale water customers. SPU's policy for granting leak refunds to customers is contrary to utility industry standards, and refunds are not always granted in a timely manner. There are issues with water treatment plant insurance, specifically with the contract terms, proof of proper coverage, and charges to SPU.

We also identified potential improvements in other areas, including the timeliness of some meter repairs, handling of delinquent "special taps" charges, reconciliation of accounts receivable, and access rights to the Summit Accounts Receivable system.

See Appendix 2 for a color-coded risk level chart for the audit's major areas and the individual findings within these areas.

Rate-Setting and Wholesale Water Contracts: Overall, we found that proper controls were in place and functioning adequately. Water rates are established in a logical and equitable manner, and the rates appear to be reasonable compared to those of other large municipalities. We noted one issue with the wholesale water contracts related to payment terms, which is discussed below under Customer Payment Processing and Accounts Receivable Management – Wholesale Accounts.

Utility Usage Tracking: We found controls in these areas need some improvements. While water consumption is generally measured accurately, timely, and efficiently, we noted opportunities for improvement with meter reading quality assurance, billing customers for special meter reads, the meter exception review functions, and meter repair and testing. Specifically, the reviewing of water meter readings that are potential exceptions could be made more efficient and effective to better identify malfunctioning meters. In addition, the results of SPU's recent testing of commercial and wholesale meters indicate a fair number of meter problems and emphasize the importance of continuing SPU's current meter testing programs. We also noted that timely repairs do not occur for all types of meter work and customers are not billed for special meter reads due to meters being covered (i.e., by construction, cars, etc.) as is required by SPU policy.

Billing: Controls appear to be adequate overall to ensure water services are billed accurately and timely. However, some customers are not billed or refunded in a timely manner for the amounts they owe or are due when new water connection projects are completed. We also noted that water service is not cut off for customers with delinquent "special taps" accounts, as it is for delinquent water accounts.

Customer Payment Processing and Accounts Receivable Management – Wholesale Accounts: Controls appear to be adequate overall to ensure wholesale water payments are processed accurately and securely, and that wholesale accounts are properly monitored. However, SPU provides payment terms to wholesale water customers that are unusually long compared to other water utilities.

Account Adjustments – Leak Rebates: Controls over granting leak rebates to customers need some improvement. Our audit work indicated leak refunds are issued accurately and in accordance with SPU policy. However, SPU's policy for granting a leak refund does not match utility industry standards because it is more generous to the customer for leaks within the customer's premises. We also found that while leak refunds are generally issued in a timely manner, this is not always the case if the leak occurs on the "City's side."¹

Fund Accounting – Revenues and Receivables: Overall, controls are adequate for accounting for revenues and receivables except for one area that needs improvement. Revenues and receivables are posted accurately and timely, and reserves for bad debt comply with SPU policy. The Combined Customer Service System (CCSS) accounts receivable appear to be reconciled accurately and in a timely manner. However, there is no procedure in place requiring a formalized monthly reconciliation of the Water Fund Summit Accounts Receivable that is reviewed and approved by management.

Information Technology – SPU Summit Accounts Receivable and Itron Systems: We concluded that controls are adequate overall for the Itron meter reading system, but need improvement in one area for the SPU Summit Accounts Receivable system. Procedures are adequate for both systems for maintaining adequate audit trails for system access and transactions, system change controls, and system backups. And, while access rights are properly assigned and monitored for

¹ If a leak is between the water meter and the water main, it is considered to be a leak on the City's side.

the Itron system, we found three users with inappropriate update-level access to SPU Summit Accounts Receivable.

Vendor Contracts, Invoicing, and Performance: Except for one area, controls are adequate over SPU's outsourced water operations. The water treatment plant contracts are properly managed and administered, and the water treatment invoices are generally accurate, and properly reviewed before payment. However, there are issues with the vendors' insurance coverage for plant operations, specifically with the contract terms, proof of coverage and overbilling of insurance pass-through charges for the Cedar River plant. Our work indicated that Seattle City Light charged SPU accurately for the joint electronic metering pilot project conducted with Cell Net.

BACKGROUND

Seattle Public Utilities (SPU) provides water services to about 159,000 residential and 27,000 commercial customers.² SPU also sells water to 22 wholesale customers, which are other municipalities or water districts.³ SPU owns its own water supply sources in the form of two watersheds: Tolt River and Cedar River. Customer water consumption is measured by SPU's system of water meters, which are read by SPU water meter reading staff each billing period. Meter reading data is recorded and tracked in the Itron meter system. SPU is responsible for monitoring water meter accuracy and repairing or replacing any malfunctioning meters. Customer charges are based on metered water consumption and SPU's current water rates, which are set by City ordinance. There are reduced rates available for low income and disabled SPU customers.

SPU bills most customers monthly or bi-monthly using SPU's CCSS customer billing system. Water charges are listed on the customer's combined SPU utility statement, which includes charges for water, wastewater (i.e., sewer), and solid waste. In 2008, SPU billed customers for over \$150 million for total water services - \$68.8 million of this was for residential water services, \$38.7 for commercial, and \$42.9 million for wholesale. Customers may pay by mailing checks to the City's Treasury division, as most customers do, or through other payment options, including the internet, checking account transfers, or walk-in payments at several City locations. SPU monitors any delinquent accounts, applies interest charges, and takes a series of steps that lead up to the eventual disconnection of water service if debts are not paid.

SPU outsources water treatment and filtration operations at the Tolt and Cedar River plants to two vendors, American Water and OMI. SPU treats water before supplying it to customers to ensure that the water quality complies with federal and state requirements, and SPU's internal requirements, which are more stringent than those of the federal or state government.

² These numbers are as of December, 2009. Fire services is included in the number of commercial customers.

³ Two of these wholesale customers, Cascade Water Alliance and Northshore, purchase water from SPU on behalf of several municipalities and water districts.

SCOPE AND METHODOLOGY

During this review, we focused on internal controls that affect SPU's and the City of Seattle's (City) revenues and expenses. In addition to reviewing control procedures, we tested compliance with procedures whenever possible. Specifically, we reviewed internal controls related to the following areas:

- Rate-setting and wholesale water contracts
- Utility usage tracking
- Billing
- Customer payment processing and accounts receivable management – wholesale accounts
- Account adjustments – leak rebates
- Fund accounting – revenues and receivables
- Information technology – Itron and SPU Summit Accounts Receivable systems
- Vendor contracts, invoicing, and performance

We based our conclusions on interviews with City personnel, testing of data found in reports and computerized systems, and review and analyses of procedures, policies, and available documentation and electronic data. We observed operations related to the scope of this review, including several field observations, whenever it was useful for our audit work.

We used sampling techniques based on a risk-based approach, which is a cost-effective way to review significant controls. Our review, therefore, would not necessarily disclose all significant weaknesses and irregularities.

We conducted this performance audit in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

CHAPTER 2: SEATTLE PUBLIC UTILITIES REVENUE CYCLE AUDIT – WATER (Retail and Wholesale) - INTERNAL CONTROLS REVIEW

The Office of City Auditor conducted this review to assess the condition of internal controls for the Seattle Public Utilities (SPU) water revenue cycle. Overall, we found that internal controls were adequate for these areas. However, we found areas that require improved controls, including the review of water meter reading exceptions, guaranteed deposits for new water connections, and water treatment plant insurance. Commercial and wholesale meter testing programs should be reviewed based on current results. There are issues with the timeliness of meter testing and repair, charging customers for special meter reads, wholesale account payment terms, SPU's leak rebate policy and procedures, reconciliation of receivables, and system access

rights. Further, we identified potential improvements in procedures over monitoring meter reading quality assurance and handling delinquent special taps accounts.

I. RATE-SETTING AND WHOLESALE WATER CONTRACTS - *Controls are adequate overall -*

Background

Rates Water rates are formally adopted by the City Council in the form of an ordinance. New rates are usually adopted about every two or three years, and rate changes are generally the result of a rate study conducted by SPU. Rate studies are conducted by the SPU Rates unit within the SPU Finance division and involve analyzing current and projected costs, including the costs of operations and capital projects, and setting rates at the level needed to cover these expected costs. SPU strives to keep the rates as low as possible but high enough to cover costs. Rates are also set with the objective of meeting SPU and City policy goals, such as encouraging water conservation and assisting low-income customers. Rates are set by type of customer; residential and commercial customers are considered “retail” water customers, and SPU also sells water to wholesale customers, which are water districts or municipalities. Residential water rates vary based on three levels or tiers of water consumption, and both residential and commercial water rates vary based on a seasonal factor. Some of the wholesale water rates also reflect two tiers of water consumption.

Wholesale Water Contracts SPU contracts with 22 water districts and municipalities to supply their water needs, including Cascade Water Alliance (CWA), which supplies water to multiple water districts. SPU is the sole water supplier for some of these wholesale customers, but supplies only a portion of the water needs for others. The wholesale water contracts are effective for a long period, up to 60 years with set points when contract terms can be re-negotiated. Such lengthy contract periods are not unusual for water utilities. Once the actual costs of supplying wholesale water services for the prior year are known, SPU performs an annual “true-up” analysis to determine if the wholesale customers overpaid or underpaid based on actual costs. Any needed adjustments identified by the true-up analyses are built into the next year’s rates. SPU’s external audit firm reviews the true-up analyses as part of their annual audit work. SPU’s wholesale water contracts are administered by the SPU Wholesale Contracts unit in the Customer Service division.

Scope of Audit Work

We reviewed the processes and functions related to water services rate-setting and wholesale water contracts to determine whether internal controls were adequate. We conducted a high level review of the rate-setting functions; we reviewed the control procedures over the rate-setting process and the methodology utilized to verify that rates were established in a logical and equitable manner. This included reviewing the results and methodology of the most recent 2009-2011 Rate Study (published August 2008), which covered rates for both retail and wholesale water services. We also assessed several benchmarking surveys and analyses, two of which were conducted by independent parties, which included a comparison of SPU’s water rates to those of other large municipalities. We verified rates were properly reflected in SPU’s CCSS billing

system. We reviewed the terms of each type of wholesale water contract to ensure that the contracts adequately protect the City's interests relative to billing and customer account administration functions. We also reviewed assessments performed by SPU's external audit firm and other independent parties of SPU's wholesale rate studies and year-end true-ups.

Conclusion

Overall, we found that proper controls were in place and functioning adequately. Water rates are very important to the citizens of Seattle, and as such, it is imperative that SPU's rate-setting process is above reproach. Based on our review of the 2009-2011 Rate Study, we concluded that water rates are established in a logical and equitable manner, and calculated accurately. We found the Rate Study to be comprehensive and easy to understand. SPU's water rates appear to be reasonable based on independent benchmarking comparisons with other large municipalities. We noted one issue with the wholesale water contracts concerning payment terms, which is addressed in section IV of this report on page 26.

II. UTILITY USAGE TRACKING - *Controls need some improvement* -

Background

SPU customers are billed for water services based on their water consumption. Water consumption is measured by water meters. Residential customers generally only have one water meter but commercial customers may have several. SPU has a Meter Reading group and they read each customer meter before the customer's monthly (for commercial and wholesale customers) or bi-monthly (for residential customers) billing period. The vast majority of meters are read in the field by SPU Meter Readers, but a few of the largest commercial customers have meters that electronically feed meter data to SPU's Itron meter system. Meter reading routes are laid out to be as efficient as possible and are grouped by billing cycle to ensure customers are billed on time each period.

Meter readers are scheduled to read given meter routes each day. The meter reader goes from premise to premise, lifts the meter cover, reads the meter, and records the reading in his/her handheld Itron device. The Itron handheld is pre-programmed to detect apparent exceptions and let the meter reader know if they should re-check the reading. Meter readers can enter notes in their Itrons and generate work orders such as "meter needs repair or maintenance." SPU has a number of electronic or AMR (i.e., automated meter reading) meters that allow for electronic transmission of the meter reading to the meter reader's Itron device, which means that the meter reader just needs to get within proximity of these meters to get a reading. AMR meters are primarily only used for commercial water customers. At the end of the day, meter readers "dock" their Itron devices in the Itron equipment room, and meter readings and any associated comments are uploaded to the customer accounts in SPU's CCSS billing system. The Itron file is reviewed and verified for completeness before it is uploaded to CCSS.

The last major step in the process for tracking customer water usage is the potential exception review process. SPU has two customer audit units, one that is responsible for residential accounts and one for commercial and wholesale accounts. These two units are part of the

Customer Billing Services division and they review potential meter reading exceptions. CCSS is pre-programmed with exception parameters to identify meter readings that indicate when a customer's water consumption was unusually high or low based on their historical consumption, shows zero consumption, shows that a meter reading wasn't taken, and various other types of apparent exceptions. Customer Audit staff review each potential exception, research the account history, determine whether the meter reading appears to be a true exception or not, and takes the appropriate actions. All exceptions are reviewed before the accounts are scheduled to be billed.

Scope of Audit Work

We reviewed the processes and functions related to usage tracking of SPU's water services to determine whether internal controls were adequate. We reviewed service usage tracking at a detailed level, which included reviewing the controls over these processes and testing them to verify that they were functioning properly. Specifically, we evaluated whether controls would ensure water consumption is measured accurately, timely, and efficiently for residential, commercial, and wholesale customers. Achieving this audit objective included evaluating controls over the meter reading process, meter reliability, testing and repair processes, and over meter exception review processes. We also reviewed controls over ensuring all water consumption is billed to a customer to ensure that there is no illicit water received free-of-charge. Our audit work involved field observations of the meter reading process, meter shop functions, Itron system functions, and a field observation with a SPU Water Inspector. We also observed the customer audit units working potential meter reading exceptions on several occasions. We sampled data and transactions and performed detailed testing to make conclusions on each control objective involved in this scope of work, including reviewing a sample of meter repairs, tests, and replacements in the Maximo system with the Crew Scheduling unit in SPU Operations.

Conclusion

We found controls in these areas need some improvements. While it appears that controls generally ensure water consumption is measured accurately, timely, and efficiently, we noted opportunities for improvement with meter reading quality assurance, billing customers for special meter reads, the meter exception review functions, and meter repair and testing. We concluded that controls are adequate to prevent illicit consumption of water. Details on these issues are discussed below.

Meter Reading Quality Assurance - Conclusion 1: There are some issues with meter reading quality assurance. *Low risk*

Background

Each SPU water meter is read monthly (for commercial and wholesale customers) or bi-monthly (for residential customers) and the customer's bill is based on this meter reading for water consumption charges. SPU meter readers have assigned meter reading routes and all routes are scheduled to be read in a timeframe sufficient to meet the scheduled billing dates for the accounts. Meter readers drive to the start of the route and then generally proceed on foot to read their routes. Most meters are read manually, by lifting the meter cover and viewing the reading, but some are read electronically using the meter reader's handheld Itron unit. All meter readings are entered into the Itron handheld unit either manually by the meter reader or automatically by

the electronic transmission of the meter. At the end of every day, the Itron handheld units are “docked” in a computing device which captures the meter reading data and initiates the process to upload the data to the CCSS system, SPU’s billing and customer accounting system.

Meter readers read their assigned routes for two billing cycles in a row, and then the route is read by the alternate meter reader assigned to the route for the third billing cycle. SPU does this to help prevent and/or detect meter reading errors or irregularities, as well as to ensure there is always more than one staff person trained and experienced in reading each meter route. Meter Reading management conducts a field quality assurance monitoring of each meter reader by having a senior meter reader read the route immediately after the assigned meter reader does, and then verifying the accuracy of the reads recorded and checking for the proper replacement of meter covers. Meter Reading management also monitors for quality assurance purposes the meter readers’ route times, missed reads, and the number of meters recorded as a “can’t read” or “can’t find”. Any issues with performance are communicated to the applicable meter reader by management. Management’s goal is to perform this quality assurance monitoring on every meter reader three times annually.

In addition to monitoring meter reading quality at the meter-reader level, Meter Reading management tracks route times, cost per meter reading, missed reads, ‘can’t reads,’ etc. at the total level and posts these statistics on a board that can be seen by everyone in the unit. SPU also tracks the quality of meter reading efforts by reviewing meter readings that appear to be potential exceptions or errors because they indicate a customer’s consumption is significantly different from their normal usage. These potential exceptions are reviewed individually by the SPU Customer Audit units and can result in requests for re-performance of the meter reads. As part of our audit fieldwork, we accompanied a meter reader to observe the meter reading process and the aspects of the job that are part of management’s quality assurance monitoring.

Issue, Impact, and Recommendation

Since customer bills are based on the results of SPU meter reader efforts and meters are read on customer property, it is important that SPU adequately monitor the quality of the meter reading process. We noted some opportunities for improvement in this area:

- Field Quality Assurance Monitoring - Timeliness
Meter Reading did not perform any field quality assurance monitoring for the meter readers in 2008. Management noted this was due to a number of special projects in 2008, including an upgrade to the Itron system and training on this system change, implementation of a new ERTS system (i.e., electronic meters that provide continuous data logging) for the wholesale meters, and several other projects. We noted that Meter Reading resumed field quality assurance monitoring in early 2009. While field monitoring of meter reading quality is just one of the ways that SPU monitors meter reader accuracy and performance, we believe this process is important and valuable, and should be conducted periodically and consistently for every meter reader. However, it may be more operationally feasible to conduct field monitoring once or twice a year for each meter reader rather than the current policy of three times annually.

- Field Quality Assurance Monitoring - Results
We reviewed the results of the meter reader field quality assurance reviews conducted during the first quarter of 2009. Of the 11 meter readers reviewed, 100% were recorded as reading meters accurately, but 64% were recorded as needing improvement with proper meter cover replacement. While no customer safety issues were noted, meter cover replacement should be improved to ensure good customer service.

We also examined the Meter Reading unit's overall performance statistics for the first three quarters of 2008. The cost per meter reading was tracking above the goal amount (\$.89 versus \$.85) and the percentage of routes on time was below the goal (85% versus 100%). We also noted that no routes were read so late as to delay customer billing.

ACTIONS PLANNED OR TAKEN

- **Field Quality Assurance Monitoring – Timeliness:** As cited by the Auditor, there were competing demands in 2008 that supplanted Meter Reader audits. Now that these other priority projects have been completed, we anticipate a return to more consistent auditing. SPU will first determine if the three audits per year threshold is being attained and then consider if an adjustment to another threshold should be made.
- **Field Quality Assurance Monitoring – Results:** An analysis of what constitutes adequate meter cover placement should be conducted as placement may be subject to the reviewer's individual judgment. SPU will take steps to ensure an established standard is in place. It is noted, however, that 64% seems high given that the record of customer injuries or complaints arising from meter cover placement does not support such a high "failure" rate.

Special Meter Reads Due to Covered Meters - Conclusion 2: SPU is not charging customers for "special meter readings" due to meters covered by construction, landscaping, cars, etc.. Medium risk

Background

When an SPU water meter reader is unable to read the meter because it is covered by ongoing construction or landscaping work, a parked car, etc., the meter reader enters a 'can't read' comment into their Itron handheld unit and leaves a copy of a two-part form on the customer's door indicating the meter is covered and asking the customer to try to get a meter reading. The other part of the two-part form is sent to an administrator in the SPU Utility Services division who send letters to these customers notifying them it is a legal requirement to keep meter areas clear and accessible. If another two weeks go by and SPU has not heard from the customer, they may give them a phone call.

In the meantime, SPU Customer Audit will review the account after receiving the meter reader's 'can't read' entry and because it doesn't have a meter reading for the billing period. Customer

Audit will estimate the bill based on the customer's average prior usage. Customer Audit can estimate a customer's consumption for up to two billing periods. If the meter is still covered the third time the meter reader tries to read it, Customer Audit will create a service order to have a senior meter reader try to get a reading. This service is called a "special read" and requires a separate trip to the customer's premise. According to SPU policy SPU-DR-01-08 *Standard, Connection, and Administrative Charges Rule*, the charge to a customer for a "special read" is \$80. If the senior meter reader is unable to get a reading, they will file a Work Order request for the Meter Maintenance crew to go out and uncover the meter. As part of our audit fieldwork, we accompanied a meter reader and observed meters that were covered by construction and landscaping and the process the meter reader followed for these meters.

Issue, Impact, and Recommendation

In accordance with SPU policy, customers should be charged for special meter reads when the meter is covered because of something controlled by the customer. SPU incurs extra expense in sending a senior meter reader to a customer's premise for a special meter read, which is why SPU established this charge. Currently, SPU does not charge customers for special reads on covered meters. It should be noted that special reads do not occur frequently and would not represent a significant revenue source, though they do occur regularly. We recommend that SPU start charging for special read services in accordance with SPU policy. This would help to offset the costs incurred by the utility and would ensure more customer equity by having the customers pay for the additional costs they create.

ACTIONS PLANNED OR TAKEN

SPU will review the steps necessary to implement charging for uncovering meters, which will require working collaboratively with SPU Meter Maintenance, SPU Meter Reading, SPU Accounting, and SPU Customer Audit.

Water Usage Exception Parameters and Exception Review - Conclusion 3: Water usage exception parameters and exception review procedures could be improved. High risk

Background

SPU reviews water meter readings under certain circumstances. For example, they perform a review if the reading indicates that a customer's water consumption was significantly higher or lower than their average prior consumption (comparisons are based on the average consumption of the same period the previous year plus the immediate preceding period), or if it was a zero or negative reading, or there was a missed meter reading. One Customer Audit unit in the SPU Customer Billing Services division handles potential exceptions for residential accounts while another unit handles those for commercial and wholesale accounts. Customer Audit also reviews accounts for which the meter readers have entered certain types of notes or comments into their Itron handhelds. Some of the issues that Customer Audit identifies with their exception review process are leaks and malfunctioning water meters. The parameters that generate a water meter reading to register as a potential exception are pre-programmed into the CCSS billing system. We reviewed the exception parameters that generate 'Low' and 'High' exceptions for each type of account and water meter.

Customer Audit receives daily reports of all potential exceptions from CCSS both on-line and in hard copy form. Staff members have assigned responsibilities for researching these exception reports. They review the reports and each account individually to try to determine whether the meter reading represents a true exception that requires action on SPU's part. They review the customer's water consumption history to help make this determination. As part of the review process, the audit group reviews meter reading notes, compares previous consumption, reviews account notes, considers City Light information and reviews Maximo work order notes in order to make an informed decision about the meter reading. If Customer Audit concludes that the meter reading is probably accurate, they release the exception in the CCSS billing system and the account will bill on its normal billing date. If Customer Audit concludes the meter reading may be a true exception, they can take a number of actions depending on the situation. They can send a Leak Notice to the customer alerting them to check for a leak, send out a senior meter reader to re-take the reading, or file a service order for the Meter Crew to test the meter. While the potential exception is being resolved through one of these actions, Customer Audit can estimate the customer's bill, based on their prior average consumption, for up to two billing periods (i.e., four months for a residential customer and two months for a commercial customer). If a service order for a meter reading verification (i.e. re-read) is created, it is general practice to wait for the re-read before billing the account so it can be billed as accurately as possible. If the meter needs to be tested and it cannot be completed in time for the account to bill, the account is billed using an estimated amount and adjustments are made when the meter test is complete. Customer Audit will, in most instances, wait to bill Commercial and Wholesale accounts with potential exceptions until additional information can be supplied.

We observed Customer Audit staff reviewing and working potential exceptions for residential, commercial, and wholesale accounts. In addition, we conducted a field observation of the meter reading process and discussed and observed the conditions that would cause a meter reader to enter exception comments into the Itron unit.

Issue, Impact, and Recommendation

Parameters that generate potential water meter exceptions should be set to maximize notifications of problem meter readings and minimize them for meter readings that are accurate. The process for reviewing potential exceptions should be as efficient as possible. We identified opportunities for improvements in the following areas:

- ❖ 'Low' Exception Notification Parameter The parameter set in CCSS to generate a 'Low' potential exception for commercial accounts may have to be tightened to detect aging and slowing meters in a timelier manner. The 'Low' exception parameter for commercial meters with a single register and in the first consumption tier (i.e., 0-99.99 CCF per month) is currently set at 75%. Commercial water meters can have up to three registers to measure different water flow levels and exception tolerances are set by service type code and consumption tier with a high and low parameter for each tier. We noted that exception notification parameters are set more tightly for the commercial meters with multiple registers (multi-register meters are generally used for higher amounts of consumption), higher consumption tiers, and for wholesale meters. SPU meter specialists indicated that the larger meters used for commercial accounts tend to slow down as they age because of the way they are built whereas the residential water meters tend to measure accurately until

they completely stop. It is important for SPU to identify meters that are slowing down as quickly as possible to avoid under-billing customers for water consumption.

- ❖ 'Zero' Consumption Exceptions The review of potential meter exceptions for residential accounts could be made more efficient by programming CCSS to compare accounts that have both zero water consumption and are set up on the solid waste 'vacancy' rate code and automatically exclude these from the exception reporting because these are not exceptions. Customers set up on solid waste vacancy rates are away from their residence and not expected to be using water. CCSS could also be programmed to exclude accounts with zero water consumption that are set up on the 'construction' garbage rate code, because these customers would also often not be using any water. Though, premises set up for the construction rate will sometimes use water during building (i.e. dust control, cement etc). According to the Residential Customer Audit unit, this change would eliminate the need for manual review of about 50% of the current residential exceptions. However, the cost of updating CCSS, should be weighed against any potential labor-savings in Customer Audit.

- ❖ Bill Estimation Notation

The efficiency of Customer Audit's exception review process for residential accounts could be improved if CCSS were programmed to print the bill estimation note on the customer's statement for one billing cycle only. Currently, Customer Audit staff needs to manually remove these notes from each account or they will continue to print. This is time consuming and can involve up to about 40 residential accounts daily per staff member. CCSS is set up to automatically insert a one-time only note on the customer's bill indicating when a meter reading is estimated, so the Residential Customer Audit unit could just utilize this feature in the same way the Commercial Customer Audit unit does to avoid the additional manual step.

ACTIONS PLANNED OR TAKEN

'Low' Exception Notification Parameter: Existing protocol is set to tighten the allowable threshold percentage as consumption increases (the parameter moves from 75% at 99 ccf to 50% at 100 ccf) so the existing protocol incorporates safeguards to address slowing meters on the most risky installations that typically are high consumers. Furthermore, a preliminary analysis indicates potential issues in the hard coding of the billing system that might effectively preclude simple adjustments to the CCF amounts associated with the existing percentage thresholds; the cost of altering this hard coding may present an impediment given the expected return in more quickly identifying problem installations. Finally, employing the current thresholds has not resulted in significant adjustments following the replacement of suspected slowing meters; which indicates that the current thresholds are sufficient for their intended purpose. SPU Commercial Customer Audit will conduct further analysis of this area.

'Zero' Consumption Exceptions: There are known business reasons for water demand during a period when the account shows a solid waste vacancy rate (e.g., construction use of domestic water supplies for dust control, equipment washing, etc), which may justify reviewing such instances for accurate billing. SPU Commercial Customer Audit will review this area to determine whether process changes could be made to improve efficiency.

Bill Estimation Notation: SPU agrees that automating the removal of estimation notes would result in efficiencies. However, competing demands for CCSS operational support places this desired functionality lower in priority. SPU Customer Audit will review the existing options in CCSS to ascertain which option could perform the needed task (e.g., the current ability to note an estimated read on a one-time basis for a bill with no corresponding need to remove a global “estimated bill” message).

Timeliness of Meter Testing & Repair/Replacement - Conclusion 4: There may be some issues with timeliness of meter repair, replacement, and testing work. Medium risk

Background

When any meter issues are found or suspected that indicate a meter requires repair, testing, or replacement, a work order request is entered in SPU’s Maximo work order system. Meter work orders are handled by SPU’s Meter Crew in the Field Operations and Maintenance Branch. The Crew Scheduling Support unit is responsible for reviewing all work order requests filed and prioritizing them for the Meter Crew to work, based on pre-set criteria. Meter work is assigned to different levels of meter crew staff, called lead craft, depending on the skill sets needed to perform the work. Meter Crew staff generally perform most of their work in the field, but sometimes they need to bring meters in to the Meter Shop area for testing or repair work. The results of all meter work are documented in the Maximo work order system.

We performed a detailed review of 40 residential and commercial meter work orders and 20 AMR meters (i.e., meters that can be read electronically). These work orders were for meter repair, replacement, and/or testing. We reviewed the work performed as documented in Maximo. We worked with the SPU Crew Scheduling Support unit to do this.

Issue, Impact, and Recommendation

Meter repair, replacement, and testing work should be performed in a timely manner to ensure that water meters are measuring water consumption accurately, and that they are properly maintained to facilitate efficient meter reading. We found that meter box maintenance and AMR meter work could be improved, but did not find any issues with the timeliness of other types of meter work.

❖ Meter Box Maintenance

Meter box maintenance work, which includes things like cleaning out meter boxes, is the lowest level of meter work. This type of work is ongoing because meters get dirty, flooded, and overgrown by vegetation. At the time of our fieldwork, there was only one crew person assigned to this work, and there were 2,021 meter box maintenance work orders with ‘waiting for approval’ status and 598 that were ‘waiting for planning’ because Crew Scheduling had assigned them to Meter Maintenance.

❖ AMR Meter Work

During our fieldwork, we noted that there were 110 work orders for installing AMR meters because there was only one Meter Electrician lead craft to perform this work.

ACTIONS PLANNED OR TAKEN

Focused attention to AMR meter work has reduced the backlog to 76 as of November, 2009. In addition, SPU Field Operations has committed an additional staff person as a helper/backup to the primary AMR technician. SPU is confident that backlog issues will continue to improve given the progress to-date.

Commercial Meter Testing and Replacement - Conclusion 5: Commercial meter testing results indicate the importance of the commercial meter testing and replacement program. High risk

Background

SPU has a program to test commercial water meters periodically. This is done because the commercial meters are generally larger than the residential meters and they can slow down and under-record water consumption as they age. In contrast, SPU indicated that residential water meters tend to “run to failure” and then completely stop working. Currently, the Water Meter Specifier in the SPU Asset Management unit provides a list to the Meter Crew of commercial water meters to be tested for the year. The Meter Crew performs the meter tests, repairs or replaces any meters if needed, and documents all work performed in the Maximo work order system. The Water Meter Specifier selects meters for testing based on their potential risk of malfunctioning by considering the last date the meter was tested, the size of the meter, the water volume flowing through the meter, etc. In the past, the Meter Crew selected the commercial meters for testing without having any clear criteria in place for this selection process. In addition to the commercial meter testing program and the reactive meter repairs and replacements generated by this, SPU also has a proactive commercial meter replacement program. Asset Management identifies a certain number of the older commercial meters to be replaced each year and there are funds specifically designated for this program.

We performed a detailed review of 20 commercial meter test work orders from 2008 out of the 71 that were performed by reviewing the work documented in Maximo. We worked with the SPU Crew Scheduling Support unit to do this.

Issue, Impact, and Recommendation

Periodic testing of commercial water meters is very important to help ensure water meters are measuring water consumption accurately and to help identify any aging meters that are slowing down and under-recording. Under-recording meters result in lost utility revenues for SPU. However, there is a cost associated with meter testing, so decisions on which meters to test must be made with that in mind. Ideally, the annual costs of pro-actively testing meters should be

lower than the recovered revenue from their improved performance. We took note of the following during our audit fieldwork:

❖ 2008 Commercial Test Results

Our sample of 20 meter tests indicated that 30% of the commercial meters tested in 2008 did not meet SPU's accuracy standards⁴ and required repair work or replacement, and another 25% met accuracy standards but required maintenance. 2008 was the first year that Asset Management provided the Meter Crew with a list of the commercial meters to be tested – and these meters were ones that had no documentation of any prior testing – which may explain why the testing results indicated so many meter problems. In the past, according to Asset Management officials, the Meter Crew tended to select the same meters for periodic testing because they were easy to access. Some commercial meters are difficult to access because they are, for example, located in the middle of a street or inside a large office building. Based on the results of the 2008 commercial meter tests, we agreed with Asset Management that they should continue to provide a list of meters for testing to the Meter Crew and continue cycling through all of the commercial meters using testing selection criteria based on the potential risk of malfunction.

❖ Cost of Slowing Meters

As noted above, the larger commercial meters tend to slow down or malfunction with age. Asset Management noted that one high consumption meter that was replaced last year as part of SPU's proactive commercial meter replacement program was under-recording consumption. SPU management estimated that the lost revenues from this meter alone equaled the approximately \$350,000 annual cost of the entire meter replacement program.

ACTIONS PLANNED OR TAKEN

SPU will continue to selectively test water meters based on cost-benefit analysis. In effect, this means that older meters, with relatively high consumption are more likely to be tested. In addition, SPU will replace certain higher consumption meters that are very difficult to test when the annualized cost of testing and potentially repairing such meters exceeds the cost of replacing them.

Wholesale Meter Testing - Conclusion 6: There are issues with wholesale meter testing. ***High risk***

Background

SPU tests each meter that measures wholesale customer water consumption annually, as specified by the wholesale water contracts. Wholesale meters individually measure significantly more water consumption than retail (i.e., residential and commercial) meters so it is critical that

⁴ SPU Operations considers a meter to be measuring accurately if it measures within a plus or minus three percent of the true measurement.

they are accurate. To illustrate this point, in 2008 SPU generated about \$43 million in total wholesale water revenues with only 128 wholesale meters measuring this water flow versus the thousands of retail meters that measured approximately \$108 million in retail sales.⁵ The wholesale meters tend to be the largest and most complex of all of SPU's water meters. As with commercial meter testing, the SPU Meter Crew and electronic meter technician perform the wholesale meter tests and document the work performed in Maximo. The Wholesale Water Contracts group is responsible for providing a list of all wholesale meters to the field meter units and verifying that the tests occurred. The Contracts group works with the wholesale customers (also called purveyors) and administers the contracts. The Meter Crew strives to complete the purveyor meter testing within the first two quarters of the year. The SPU Commercial Customer Audit unit receives the wholesale meter test results, reviews them, and decides if any action needs to be taken with the meter based on the test results, such as re-testing the meter.

We performed a detailed review of 20 wholesale meter test work orders from 2008 out of the 152 wholesale meter tests that were performed by reviewing the work performed as documented in Maximo. We worked with the SPU Crew Scheduling Support unit to do this.

Issue, Impact, and Recommendation

Wholesale meter testing is a very important function for ensuring that purveyor meters are measuring water consumption accurately, accurate billing is occurring, and that there is compliance with contract terms. Under-recording meters result in lost utility revenues for SPU and higher costs to retail customers. This potential risk is especially significant for the wholesale meters given the volume of water they measure. We noted the following during our audit fieldwork:

❖ Completeness of Meter Testing

We found that 17 wholesale water meters were not tested in 2007⁶ and 13 meters were not tested in 2008. Of these 13, there appeared to be legitimate reasons for the lack of testing for four of the meters, such as postponing the tests until equipment could be devised to test the meters in a safe manner.⁷ However, we found no reasonable explanations of why the other nine meters were not tested. At the time of our audit fieldwork, the Wholesale Water Contracts unit had resubmitted work orders for testing the remaining meters and they were developing a Service Level Agreement with the Meter Shop for 2009 to lay out the expectations for purveyor meter testing, including that each be tested annually.

❖ 2008 Purveyor Test Results

Our audit sample of 20 meter tests indicated that 30% of the wholesale meters tested in 2008 did not test within SPU's accuracy standards and required repair work or replacement, and another 10% tested within accuracy standards but

⁵ Note that though there are a total of 128 wholesale meters, only some of them measure a high volume of water flow. Some of these meters serve in more of a backup capacity and generally measure very little water.

⁶ This figure excludes those meters not tested because the SPU Meter Shop was working on devising a safe method for testing these high pressure meters.

⁷ The wholesale meters tend to be quite large and complex and some present safety challenges for testing or repair work due to dealing with high pressure water flows.

benefitted from general maintenance work. Because these meters receive so much use versus other meters in SPU's system and measure almost 30% of SPU's total water sales, the SPU Water Specifiers believe SPU should change the testing policy from an annual test to a semi-annual test for the highest volume wholesale meters. This increased testing policy could be tried and then the results analyzed to determine the best policy going forward. Most importantly, if a purveyor meter were under-registering, it would not only result in lost wholesale revenues to SPU but also, because the annual true-up allocation of costs between retail and wholesale is based on the percentage of flow used by each group, a slow wholesale meter would result in a higher allocation of costs to retail customers..

ACTIONS PLANNED OR TAKEN

SPU plans to modify its wholesale meter testing program such that high-use mechanical meters will be tested twice a year. Standby meters, which had previously been tested annually, will no longer be tested on a regular basis. (Standby meters are redundant services rarely used by wholesale customers, and are typically only used in an emergency.) This change will allow SPU to increase the effectiveness of its wholesale meter testing program within current resource levels.

SPU will also develop a Service Level Agreement/Work Plan between the SPU Customer Contracts group and SPU Field Operations in January 2010 for the 2010 Meter Testing Program. Each subsequent year will have an updated Service Level Agreement/Work Plan.

III. BILLING - Controls are adequate overall -

Background

Customer accounts are tracked and billed using SPU's CCSS system, which is the same system Seattle City Light (SCL) uses for billing electricity services. The only exception to this are the two wholesale water customers on block water contracts – these customers are billed using SPU's Summit Accounts Receivable system. Water services are billed to customers based on metered consumption for residential, commercial, and wholesale accounts.⁸ Residential customers are billed bi-monthly, and commercial and wholesale customers are billed monthly and the billing process is highly automated. After the Itron system has uploaded meter reading data to CCSS, the accounts are ready to be billed on their scheduled billing dates. SCL has the responsibility for maintaining the CCSS system and a percentage of this cost is allocated to SPU.

SPU also bills customers for new connections to SPU's water system, which generally relate to new construction projects or major remodels. Customers pay in advance for smaller water connection projects, and for larger projects they pay a guaranteed deposit (called a GDV) based on the estimated project costs, and the customer is either billed or refunded at the completion of the water connection work, once the actual costs are known. Water connection charges are

⁸ SPU customers receive consolidated utility bills for water, wastewater, and solid waste (residential only since commercial solid waste charges are billed separately). Charges for all three types of utility services are tracked and billed in the CCSS system.

entered into the Over-the-Counter (OTC) module of CCSS but any amounts due or owing from GDV projects are billed or refunded using Summit Accounts Receivable. SPU also charges customers for a few other types of miscellaneous water services, such as permits to utilize water from fire hydrants, water service retirements, re-connecting meters that have been removed due to account delinquencies, etc.

Scope of Audit Work

We reviewed the processes and functions related to billing customers for SPU water services to determine whether internal controls were adequate to ensure charges were billed accurately and timely. We also reviewed controls over charging customers for new water connections and other water services, including billing and refunding for any remaining amounts from projects that involved a GDV. The scope of this audit work only included those processes that are unique to billing water services; it did not include processes related to billing SPU customers for their combined utility bill. Our office will be covering those combined billing processes in our Combined CCSS Billing Processes Audit, which will be published later as the last of our series of SPU Revenue Cycle audits.

Our fieldwork involved sampling residential, commercial, and wholesale accounts to verify water charges were billed accurately and timely. We verified that peak water rates, three-tiered residential rates, and out-of-city rates were charged appropriately to the customers in our sample. We worked with SPU Accounts Receivable, the Commercial Customer Audit unit, and the SPU Auditor in Customer Billing Services, to perform these tests. We reviewed a sample of water connection transactions requiring GDV's to verify charges were billed accurately and any remaining amounts due or owing were properly billed to the customer or refunded. We worked with the Commercial Customer Audit unit, the Utility Services Team, and SPU Accounts Receivable to conduct this audit work. We worked with the Meter Electronics staff to review and observe controls that ensure meter reading data is accurately passed from the Itron meter system to the CCSS billing system.

Conclusion

In our opinion, controls are adequate overall to ensure water services are billed accurately and timely. However, controls over water connection projects requiring a GDV require improvement and we noted one additional issue. Details on these issues follow.

Guaranteed Deposits for New Water Connections - Conclusion 7: Controls are not adequate to ensure customers are billed or refunded in a timely manner for remaining amounts due or owed from guaranteed deposits (GDV's) for new water connection work.

Medium risk

Background

One type of water service that SPU provides is new water connections (called taps), which refers to the installation of a new water meter and establishment of a new water service. This most commonly occurs with new construction, subdivisions of properties with existing water service, and tear-downs and rebuilds of homes or buildings. New water connections are primarily

handled by an Account Executive (AE) in SPU's Utilities Services Division.⁹ When a customer wants a new water connection, they work first with the Department of Planning and Development (DPD) on their construction project and DPD sends the customer's plans to SPU Engineering if a new water meter will be involved. SPU Engineering reviews the plans, approves them if they are appropriate, and issues a Water Availability Certificate to the customer. This certificate indicates SPU Engineering approves the size of the meter the customer plans to use, and that the amount of water the customer will need will be available from the water main that will serve their property. Next, the SPU AE reviews the customer's drawing or plan showing how and where they plan to tap into the water main that serves their property. If everything is acceptable, the AE asks the customer to pay for the new water connection.

Customers must pre-pay for new water connections. SPU Operations will not perform the water connection work unless payment has been received in advance. The fees for most new water connections are based on the Standard Charges Policy and Procedure SPU-DR-01-08 and are meant to represent the customer's share of the costs to connect to SPU's water system. Fees for new water connections can be quite substantial, generally in the thousands of dollars for new commercial and multi-family connections. The AE notifies the customer what the connection charge will be and asks them to come in and pay at the Utilities Services payment counter. After the customer has paid, the AE will set up the new water account on the CCSS billing system and activate the account for billing once the meter has been installed. For large projects, SPU collects a deposit from the customer for installations of large water conversions, connections, or retirements (i.e., a change in tap size for an existing service) based on estimated costs. This deposit is called a guaranteed deposit or GDV and these funds are deposited and posted to a SPU liability account until the water connection work is completed. The AE enters the request for the service order to connect the new water service into CCSS. The service order request passes to the Maximo work order system and the crew will schedule a time to complete the work in the field. When SPU Operations completes the work, it is supposed to notify the Utility Services Division the work was completed and what the actual costs were. Utilities Services then notifies SPU Accounts Receivable (AR) to bill or refund the customer for the remaining amount due or refunds them for any overpayment. SPU AR tracks the status of all open GDV's once or twice a year and follows up on them, if needed. In 2008, SPU received about \$190,000 for GDV's for water connection and other water service work.

Issue, Impact, and Recommendation

Customers should be billed or refunded in a timely manner for remaining amounts due or owed to them for water connection and retirement work. Our audit work indicated this is often not occurring. We reviewed a small sample of GDV's and of the sample we reviewed, noted that work had been completed on seven of them but the customer had not been billed for the remaining amounts due (4 customers) or refunded the amounts owed to them (3 customers). Maximo indicated that work had been completed two years ago for two of the GDV's in our sample. The highest amount owing that we noted was around \$19,000.

This situation appears to be caused by the lack of a good procedure for GDV close-out to ensure consistent and timely communication by SPU Operations to the Utility Services Team that the new water connection work has been completed. Hence, Utilities Services does not notify SPU

⁹ SPU's policy and procedures for new water connections are found at SPU-CS-102.

AR and the customer is not billed or refunded in a timely manner. Delays in billing or refunding customers creates poor customer service, negatively impacts SPU's cash flow (because customers owe additional funds more often than they are due refunds), and reduces the likelihood of collecting the amounts due. We recommend SPU Accounting, Operations, and Utilities Services coordinate to develop a procedure to ensure GDV's are consistently closed out in a timely manner.

ACTIONS PLANNED OR TAKEN

A process to ensure that GDV's are handled in a timely basis has now been drafted and is available for review. Teams from SPU Customer Service, SPU Crew Scheduling, and SPU Customer Audit are working to refine and implement the proposed process changes by first quarter, 2010.

Special Taps Billings - Conclusion 8: There are some issues with policies for special taps accounts. Low risk

Background

Up to 2002, SPU had water main replacement and extension projects that were voted on by the affected neighborhoods and if approved, the residents were responsible for paying the project costs. SPU gave the involved customers 10 years to pay for these project charges, called "special taps" charges, and charged 9.2% interest for this financing arrangement. Customers could opt to pay the entire special taps amount at the time of the assessment or they could pay their balance off early at any time without penalty. SPU recorded a lien on the property for each special taps assessment. The assessments ranged from an average of about \$1,300 for a residential customer to \$5,000 or more for commercial customer. SPU calculated the assessment amounts based on the size of the customer's property.

SPU bills special taps charges quarterly through the CCSS billing system. If customers are delinquent in their special taps charges, late penalty interest in the amount of 1% of the balance is applied each quarter. The SPU Utilities Services group administers the remaining special taps arrangements and monitors the status of these accounts. While formerly there were hundreds of customers billed for special taps assessments, currently there are only 17 customers who owe a total of just under \$12,000. Since SPU discontinued assessing charges to customers for water main projects, they significantly increased the charges for new water connections.

Issue, Impact, and Recommendation

Customers should pay SPU special taps assessment charges in a timely manner. If they do not, SPU should charge adequate late penalties and cut off service, as is done for other types of late utility payments. While the amount owed to SPU in total special taps charges is quite small now, we noted the following issues with policies for handling this type of delinquent account during our fieldwork:

- SPU charges 1% of the special taps balance quarterly to delinquent customers. We recommend that SPU charge 3% per quarter, for an annual rate of 12%, which

is the rate charged on delinquent customer water accounts and the rate allowed by state statute.

- SPU no longer cuts off water service for delinquent special taps customers. At the time of our audit fieldwork, there were two delinquent special taps accounts amounting to over \$700 owed to SPU. Although this amount is quite small and immaterial compared to total water revenues, we believe there should always be adequate incentives in place for customers to pay amounts owed to SPU for utility services. This is not the case with special taps charges because delinquent customers retain water service and their accounts are not forwarded to collections. Late charges in the amount of 4% interest per year do not provide sufficient incentive for payment.

ACTIONS PLANNED OR TAKEN

SPU does not disagree with the first part of this finding and will look into changing the charges to 3%, or 1% per month, as it is with other delinquent water accounts.

Based on the most recent Installment Loan Report dated October 31, 2009, none of the 17 active Special Tap Charge Accounts are delinquent. Two accounts (each belonging to one owner) were delinquent at one time but these are now current. SPU does retain the authority to shut off water to delinquent accounts and will do so in accordance with our adopted policies and practices for delinquency shutoffs.

IV. PAYMENT PROCESSING & ACCOUNTS RECEIVABLE MANAGEMENT – WHOLESALE ACCOUNTS – *Controls are adequate overall -*

Background

SPU allows wholesale water customers 60 days to pay their monthly bills for water services, except for the two customers on block water contracts, who are given 30 days to pay. If wholesale customers' payments are past due, they are assessed interest at the rate of 1% of their balance, which is the same rate SPU's retail customers are charged and is authorized by the Seattle Municipal Code (section 21.04.470 D.). Except for the two block water customers, wholesale customers mail their payments to DEA Treasury Remittance Processing, just like most retail water customers do. Block water contract customer Cascade Water Alliance (CWA) wire transfers payments to the City's bank account, and Northshore mails payments to the SPU Finance Administration unit, which receives and processes many types of SPU payments.

Both the SPU Commercial Customer Audit unit and the Wholesale Water Contracts unit monitor the wholesale customer accounts for any account delinquencies. SPU management indicated that unlike retail water customers, there are no procedures to cut off water service to wholesale customers if they are severely delinquent, but noted that this situation has not occurred to date.

Scope of Audit Work

We reviewed the functions related to processing payments and managing accounts receivable for wholesale water customers. Specifically, we reviewed controls related to ensuring payments

from wholesale water customers are processed and posted accurately, timely, and securely. We reviewed controls over monitoring and managing wholesale water accounts receivable and any delinquent accounts, and we reviewed the payment terms granted and penalties for late payment to determine if they were sufficient to encourage timely payment of amounts due. It is important to note that the scope of this audit work did not include payment processing and accounts receivable management for retail water accounts because retail water is billed to the customer as part of their combined SPU utility statement. Our office will audit these areas for retail water accounts in our Combined CCSS Billing Processes Audit, which will be published later as the last of our series of SPU Revenue Cycle audits.

Our fieldwork involved sampling wholesale accounts to verify payments were processed accurately and securely. We included both block water customers and nine other wholesale customers in our audit sample. We also reviewed the account history for the sampled wholesale accounts to determine if they were current with their payments and whether late interest charges were assessed properly if warranted. We worked with SPU Accounts Receivable, SPU Commercial Customer Audit, SPU Wholesale Water Contracts, DEA Treasury Operations, DEA Treasury Remittance Processing, and SPU Finance Administration to perform this work.

Conclusion

In our opinion, controls are adequate overall to ensure wholesale water payments are processed accurately and securely, and wholesale accounts are properly monitored. All of the accounts we sampled were current with their payments so we could not verify whether late interest charges were assessed properly, but SPU management indicated that wholesale water customers almost always pay on time. We did note one issue related to payment terms granted to wholesale customers. Details on this issue are provided below.

Wholesale Customer Payment Terms - Conclusion 9: SPU allows wholesale water customers 60 days to pay for water services. *Medium risk*

Background

SPU contracts with 22 water districts and municipalities to supply their water needs. SPU also supplies water to Cascade Water Alliance (CWA) and Northshore, which supply water to multiple water districts. In 2008, SPU received almost \$43 million for wholesale water services. The water rates are updated annually for all of these wholesale contracts but are basically set at a rate to recover SPU's total costs for providing water to the wholesale customers. Wholesale customers pay one rate for water consumption that doesn't exceed the volume consumed during the year their contract was based on – called “old water” consumption – and they pay a higher rate for water consumption that is above this base year amount – called “new water” consumption. The logic behind establishing this two-tier rate structure was that SPU would require additional water infrastructure to support wholesale customers with growing populations and increasing water needs.

Wholesale customers, also called purveyors, are billed monthly. Monthly invoices include metered water consumption charges, a base service charge, plus assorted credits/fees. SPU allows the wholesale customers 60 days to pay the monthly invoices, except for the two customers set up on block water contracts, CWA and Northshore, which have 30 days to pay. If

purveyors are delinquent with their payment, they are charged interest at the rate of 1% of their outstanding balance.

Issue, Impact, and Recommendation

SPU should require wholesale customers to pay for water services in a timely manner and the payment terms should be in line with accepted practice for the water utility industry. Currently, this is not the case with wholesale payment terms, except for the two customers on block water contracts. SPU allows wholesale water customers 60 days to pay for water services. These payment terms seem unusually long.

Thirty days is generally the standard payment terms offered for most invoicing, unless there is an operational need for longer payment terms. The SPU Wholesale Water Contracts unit indicated the purveyors wanted time to bill and collect from their water customers before paying SPU for the water provided, so the wholesale payment terms were set at 60 days to allow for this. However, we tested the accuracy of billing and payment timeliness with a sample of nine wholesale customers' invoices, and found that seven out of the nine paid within 30 days. In addition, a benchmarking survey we conducted with 8 other large municipal utilities that provide wholesale water services indicated that none of them offered payment terms greater than 30 days. It should also be noted that the contracts for two largest wholesale customers, Cascade Water Alliance and Northshore, provide only 30 days to pay. This situation results in a delay for SPU to receive reimbursement for expenses incurred in providing water services to the wholesale customers. It also increases SPU's risk and financial exposure from one month to two months in the potential event of a customer's non-payment for services. The current wholesale contracts cover periods of many years. Given this, we recommend that SPU consider re-evaluating wholesale water payment terms when these contracts are up for renewal or re-negotiation.

ACTIONS PLANNED OR TAKEN

As noted above, Wholesale Water Supply Contracts are in effect through 2061 and there is no effort currently underway to renegotiate terms and conditions. This particular contract term was highly negotiated and important to the purveyors. Their position was based on needing sufficient time to collect revenue from their own customers and process invoices via their elected officials (most of whom require voucher review and approval at bi-weekly meetings). A 30-day timeline with late-payment penalties generated more ill will and difficulty in achieving other contract terms that SPU needed than benefits gained. As was also noted, the majority of purveyors pay in roughly a 30 day time-frame. While a few take longer, the improvement in relations overall with our purveyors as a result of the new contracts far outweighed the increment of savings attributable to delayed payments made by some of them.

V. ACCOUNT ADJUSTMENTS – LEAK REBATES - *Controls need some improvement -*

Background

It is SPU's policy to refund customers for some or all of the costs of extra water consumption (and consequently wastewater "consumption" as well) resulting from water leaks. The refund amount depends on the circumstances involved and the type and location of the leak. In 2008, SPU issued approximately \$472,000 in leak refunds to customers.

Potential water leaks are identified in several ways - by the customer noticing that their water bill is higher than normal, or by the SPU Customer Audit units while they are reviewing potential exception meter readings showing water consumption much higher than the customer's historical usage, or by a meter reader in the field who notices high consumption or a possible leak. With any of these methods of identifying suspected water leaks, SPU will ask the customer to take some actions to try to determine if there is a leak. If it appears that there is a leak, the customer will need to get it repaired, unless the leak is on the City's property in which case SPU will need to repair it. Once the repairs have been made, a SPU Water Inspector is usually sent to verify that the repairs had been completed satisfactorily and the problem resolved. Sometimes the Inspectors are sent out to help identify whether there is a leak. Once the Inspector has verified completion of the repair, the Account Executive in the SPU Utility Services Team completes a Leak Refund Request form and sends a copy to Customer Audit.

The SPU Customer Audit units review and calculate leak refunds. Customer Audit staff review the customer's account for each leak refund request and all the notes and actions taken with the account. Before giving the customer a refund, Customer Audit verifies that water consumption appears to be back to normal. Then, they calculate the amount the customer should be refunded, taking into effect peak, off-peak, and three-tiered water consumption rates (for residential customers only), and apply the refund to the customer's account. There is management review for refunds above a certain dollar amount.

Scope of Audit Work

We reviewed SPU's policies and procedures for water leak refunds. Specifically, we reviewed controls relating to ensuring leak refunds are given to customers in accordance with SPU policy, leak refunds are calculated and applied accurately, and refunds are issued in a timely manner. As part of our fieldwork, we reviewed a small sample of leak refund requests for both residential and commercial accounts and verified that refunds were issued in accordance with SPU policy, refunds were calculated accurately, and refunds were credited to the customers' accounts in a timely manner. We worked with the SPU Customer Audit units to perform this work. We also accompanied a SPU Water Inspector to observe the process for checking potential leaks and for verifying completion of leak repairs and problem resolution.

It is important to note that SPU water customer accounts can be adjusted for many authorized reasons other than leak refunds; however, we did not review any other type of account adjustment because the other adjustment types relate to the customer's combined utility bill. All general SPU account adjustments, as well as customer service functions, will be covered in our Combined CCSS Billing Processes Audit, which will be published later as the last of our series of SPU Revenue Cycle audits.

Conclusion

Based on our audit work, we concluded that controls appear to be adequate to ensure leak refunds are issued accurately and in accordance with SPU policy. While we found that refunds are generally issued in a timely manner, the exception to this is if the leak occurs on the City's property. We also noted an issue with SPU's leak refund policy. Details on these issues follow.

Water Leak Rebate Policy - Conclusion 10: SPU is providing a refund for leaks within customer premises, which does not appear to be the norm for the utility industry and costs SPU money. Medium risk

Background

SPU will refund customers for some or all of extra water consumption (and consequently wastewater “consumption” as well) resulting from water leaks, depending on the circumstances involved. SPU policy indicates that customers generally receive a 100% refund for both water and wastewater consumption that is above their normal usage for leaks that are on the City’s property, a 50% refund of extra water and 100% of wastewater for underground leaks between the customer’s premise and the water meter, *and a 50% refund of both water and wastewater for leaks within the customer’s premise.* In the case of the latter scenario, the customer sometimes receives a 100% refund for wastewater if the water would not have gone down the sewer system. SPU indicated that the vast majority of leaks are toilet leaks within the customer’s premise and therefore would result in a customer refund of 50% of extra consumption for both water and wastewater. Toilet leaks tend to result in a large amount of excess water consumption.

SPU policy states that customers may be refunded for a maximum of the current billing period plus two additional periods, if the leak goes back that far, or a total of up to six-months. However, if the leak is on the City’s property, the customer can be refunded as far back as needed to the time the leak started.

Issue, Impact, and Recommendation

SPU’s policy over water leak refunds should be equitable to the customers involved and in line with what is normal for the utility industry. SPU’s policy appears to support these two objectives except for one situation – when the leak is within the customer’s premise. SPU currently issues refunds of 50% of excess water and wastewater consumption in this instance, though SPU management indicated most utilities do not refund customers for these types of leaks. This practice negatively impacts SPU’s finances. SPU may wish to consider revising their leak refund policy.

ACTIONS PLANNED OR TAKEN

SPU has conducted research into why leak refunds were granted in 2008 and 2009 for leaks within customer premises and concurs that a review is warranted. As such, a review of SPU’s Leak Rebate Policy has been added to the 2010 work program for the SPU Customer Service Branch.

Water Leak Rebate Timeliness - Conclusion 11: It appears that leak refunds are not always issued in a timely manner when the leak is on the City’s property. Medium risk

Background

As described above, leak refunds are not issued to customers until repairs have been completed and an SPU Water Inspector has verified the repairs were completed and resolved the problem. In the case of leaks that are on the City’s property, a service order is entered to the Maximo work

order system, and an SPU Water Crew will repair the leak. SPU Operations is supposed to report monthly to Customer Audit on all leak repairs that have been completed. Reports are generated based on leak codes entered into Maximo at the time of repair. If the correct codes are not entered on the work order, the generated report will not identify the account as needing a rebate. Customer Audit calculates the refunds due once they are notified.

Issue, Impact, and Recommendation

Approved water leak refunds should be issued to customers in a timely manner. Our audit work indicated leak refunds are issued timely except in the situation of leaks that are on the City's property. SPU Customer Audit indicated that SPU Operations does not consistently report monthly on completed leak repairs. This delays customer refunds. Our sample only included one refund for a City-side leak, but this refund was delayed for two months after the leak had been repaired because SPU Operations did not communicate about it to SPU Customer Audit. We recommend that SPU Customer Audit coordinate with SPU Operations to implement a procedure to ensure completed leak repairs are communicated consistently and timely to ensure customer refunds are not delayed.

ACTIONS PLANNED OR TAKEN

SPU's Customer Billing Services Division will take the lead in engaging SPU Field Operations and SPU Workload Planning in an effort to determine how we can more reliably and consistently note City side leaks in completed Maximo work orders.

VI. FUND ACCOUNTING – REVENUES AND RECEIVABLES – *Controls need improvement in one area -*

Background

When customers are billed through the CCSS system for SPU water services, these charges are posted daily as accounts receivable to CCSS, the subsidiary ledger. Water charges are broken down into rate codes for different types of customers, customer adjustments, refunds, new water connections, hydrant permits, etc. The Supervisor of the SPU Residential Audit and Accounting unit reconciles CCSS accounts receivable monthly and provides this information to the SPU Water Fund Accountant. The Fund Accountant then posts the billed water charges monthly to the Water fund in Summit, the City's general ledger, as a debit to Accounts Receivable (AR) and a credit to Revenues.

When customer payments are received, they are posted daily to CCSS as a reduction in accounts receivable and they are also booked daily to Summit as a debit to Cash and a credit to AR.¹⁰ This means that while charges, payments, and account adjustments are posted daily to CCSS, only payments are posted daily to Summit, and revenues are posted monthly.

¹⁰ Customer payments relate to multiple utility funds due to the fact that the utility bill is combined for water, wastewater, and solid waste services. The total amount of the payments are initially deposited to the Utility Clearing Fund in the General Ledger by the Treasury group in DEA and then the SPU Fund Accountants book them to the individual funds later when they receive the daily CCSS reporting showing how the payments should be distributed.

Scope of Audit Work

We reviewed the processes and functions related to accounting for revenues and receivables for SPU's water services. Specifically, we reviewed controls related to posting water payments and transactions to the Water fund, reconciling Water Accounts Receivable in both the subsidiary ledger (i.e., CCSS) and the general ledger (i.e., Summit), monitoring revenues and receivables, and reserving for bad debts. We conducted detailed audit work and reviewed a few reconciliations for both CCSS and the Summit Water fund Accounts Receivable, and we reviewed the calculations for the bad debt reserve to ensure the reserve was accurate in accordance with SPU's current policy. We worked with the Supervisor of the Residential Customer Audit and Accounting unit and the Water Fund Accountant to perform this work.

Conclusion

Overall, we concluded that revenues and receivables are posted accurately and timely, and reserves for bad debt are made in accordance with SPU policy. CCSS accounts receivable appear to be reconciled accurately and in a timely manner. And, while Summit Water fund accounts receivable currently appears to be reconciled accurately and timely, we noted opportunities for improvement with the reconciliation procedure. Details on this issue are discussed below.

Accounts Receivable Reconciliation - Conclusion 12: There is no formal procedure requiring monthly reconciliation of the Water Fund Accounts Receivable general ledger account. Medium risk

Background

CCSS accounts receivable are balanced and reconciled monthly and any issues are researched and resolved. During our fieldwork, we noted that Water Fund Summit Accounts Receivable had been reconciled monthly beginning March 2009 and before that time was reconciled only quarterly. As part of our fieldwork, we reviewed the CCSS accounts receivable reconciliations for two months and the Summit Water Fund AR reconciliations for four months.

Issue, Impact, and Recommendation

Because of the magnitude of dollars flowing through Water Fund Accounts Receivable, good accounting practices would indicate that this account should be formally reconciled on a monthly basis and the reconciliation should be reviewed and approved by SPU Accounting management.¹¹ During our audit fieldwork, we found that while the account was being reconciled monthly, it had not been before March 2009 when a significant variance between Summit and CCSS existed. We also noted that there was no formal procedure requiring a monthly reconciliation and explanations for all significant variances. In addition, we found no evidence that reconciliations were reviewed and approved by management. Of the four Summit AR reconciliations we reviewed, we noted significant variances for three of those months and no variance for the last and most recent month reviewed. The Water Fund accountant provided reasonable explanations for all of the variances noted and all variances were eventually resolved,

¹¹ According to the Association of Public Treasurers, the accounts receivable subsidiary ledger should be reconciled to the general ledger at least monthly.

but none of these explanations were documented on the reconciliation reports. We recommend that SPU Accounting establish a formal policy requiring monthly reconciliation of the Summit Water fund Accounts Receivable account, documentation of all significant variances or reconciling items, and documented management review and approval.

ACTIONS PLANNED OR TAKEN

SPU agrees with this audit finding and will create a procedure whereby the Water Fund Accounts Receivable (in Summit) is reconciled to CCSS accounts receivable and approved by management on a monthly basis.

VII. INFORMATION TECHNOLOGY – SUMMIT ACCOUNTS RECEIVABLE AND ITRON - *Controls need improvement in one area* –

Background

Itron System SPU uses the Itron system software and hardware for recording water meter reading data. While in the field SPU meter readers enter meter data in Itron handheld devices, and these handheld units are docked in stationary Itron hardware at the SPU Meter Shop to upload and download data to CCSS. Itron interfaces with SPU's CCSS customer accounting system to download meter reading route data and customer account data, and to upload meter reading data. The meter electronics personnel in SPU's Customer Billing Services division manage and maintain the Itron system and equipment. However, some Itron processes, such as server backups, are managed by the SPU Information Technology (IT) group.

Summit Accounts Receivable System SPU uses the Summit system's Accounts Receivable (AR) module to bill the two wholesale water customers on block contracts, as well as to bill new water connections and other miscellaneous water services. All other water customers are billed using CCSS, including the other wholesale customers. The SPU Accounts Receivable unit handles billing for the two block contract customers and all other SPU billing through Summit AR. Summit AR is a module of the City's Summit application, which runs on PeopleSoft software and utilizes an Oracle database. The Department of Executive Administration's (DEA) Summit Team maintains and manages all of the Summit modules for the entire City. However, some Summit processes, such as system backups, are handled by the Department of Information Technology (DOIT).

Scope of Audit Work

For both the Itron system and the SPU Summit AR application, we reviewed the procedures and controls related to assigning and monitoring system access rights, maintaining access and transaction audit trails, system change controls, and system backups. We did not review these controls for SPU's CCSS customer accounting and billing system because they will be covered in our Combined CCSS Billing Processes Audit, which will be published later as the last of our series of SPU Revenue Cycle audits. Our audit work included performing a detailed review of current user access rights to Itron and Summit AR, with the objective of determining whether access rights were properly assigned in a secure manner and limited to those with a business need for access. We also performed detailed audit work to determine whether Itron and Summit

AR are backed up regularly and back-up files are stored securely. We worked with the SPU meter electronics staff, SPU Accounting, the DEA Summit Team, and the DOIT Enterprise Services group to conduct our work.

Conclusion

Based on our audit work, we concluded that controls are adequate for both systems for maintaining access and transaction audit trails, system change controls, and system backups. And, while we found that controls are adequate for the Itron system for assigning and monitoring system access rights, we found an issue in this area for SPU's Summit AR system. Details on this issue follow.

SPU AR System Access Rights - Conclusion 13: Three SPU General Ledger Accounting staff have the ability to access and enter billing and payment transactions to the SPU Accounts Receivable system. Medium risk

Background

System users of the SPU Summit AR system with update-level access rights can post charges, payments, and adjustments to CWA's and Northshore's accounts, as they can for all other customers set up in SPU AR.¹² SPU Accounts Receivable authorizes users for access to Summit AR and the level of access rights and the DEA Summit Team actually sets the users up for access to the system.

SPU's current process for authorizing and setting up a user for access to Summit AR is as follows:

- A new user fills out an on-line Summit access rights form, signs it and has his/her supervisor approve the request, then sends the approved form to the SPU Summit access coordinator.
- The SPU Summit coordinator reviews the signed access rights form, signs it, retains the original copy, and faxes a copy to the DEA Summit Team. The Summit Team updates the access rights as requested and notifies the SPU Summit coordinator if there are any problems.
- The SPU Summit coordinator reviews the access rights for all SPU Accounting personnel periodically to see if everything looks appropriate and to note if there are any employees who have left or transferred who still have their prior system access rights.

Issue, Impact, and Recommendation

System access to SPU Summit AR should be limited to only those personnel who require it to perform job functions because users can access customer accounts and enter billing and payment transactions. While it appears there is a good procedure in place for assigning access rights, we found there were three users with update-level access to SPU Summit AR who do not have a

¹² SPU bills a number of other services through Summit AR, including transfer station monthly services, water connection remaining amounts due, construction site sewer/dewatering, etc.

business need for them. At the time of our fieldwork, three SPU General Accounting staff had update-level access rights, including one staff member who had supervisory-level system rights. Two of these staff members were granted temporary system access rights for legitimate work reasons and the rights were not properly removed at the end of the temporary work assignment. One staff is a new employee and apparently had access rights set up by error. We recommend access rights be removed from these three staff and access rights be reviewed periodically by the SPU Accounting Manager responsible for Accounts Receivable.

ACTIONS PLANNED OR TAKEN

SPU removed the Summit AR access rights for the three employees mentioned in the audit report, reviewed the security levels for all employees, and revised the process to improve internal control.

SPU has also instituted the following new process as of 12/1/09:

- The system user fills out an on-line Summit access rights form, signs it and has his/her supervisor and the Summit module supervisor (if they are not the same) approve the request, then sends the approved form to the SPU Summit access coordinator.
- The SPU Summit coordinator reviews the signed access rights form, signs it, retains the original copy, and faxes a copy to the DEA Summit Team. The Summit Team updates the access rights as requested and notifies the SPU Summit coordinator if there are any problems.
- Every quarter, the SPU Summit coordinator sends the Summit Operator Setting report to the Summit module supervisors to review. The coordinator then works with Summit to update any changes received from the supervisors.

VIII. VENDOR CONTRACTS, INVOICING, AND PERFORMANCE - *Controls need improvement in one area –*

Background

Water Treatment Plants SPU has two water treatment plants, one for the Tolt River water source, and one for the Cedar River water source. The purpose of the water treatment plants is to improve and ensure water quality, and specifically to comply with federal, state, and SPU water quality standards.¹³ SPU outsources the water treatment operations at these plants to two vendors. OMI, a subsidiary of CH2MHill, operates the Cedar treatment plant, and American Water operates the Tolt plant. Contracts were established with these vendors on a Design-Build-Operate (DBO) public alternative contracting basis, rather than through a traditional design-bid-build process, in which a competitively bid construction contract is awarded with an independent design engineer's specifications, and the City operates the facility. Both vendors are part of large international companies that manage water treatment operations for other customers. The Tolt plant opened in 2001 and the Cedar plant opened in 2004. The contracts run for 15 years and are extendable up to 25 years. The City maintains ownership of the facilities. In 2008, SPU

¹³ SPU sets internal water quality standards that are considerably more stringent than those required by the state or federal government.

paid a total of just under \$3 million to American Water for Tolt water treatment and about \$3.15 million to OMI for Cedar water treatment. SPU chose to outsource the design, build, and operation of the water treatment operations based on analyses they performed that indicated this option would save 15% to 30% over the traditional design-bid-build contracting/in-house operation method. SPU management stated that the actual savings have turned out to be closer to 40%.

SPU owns the two water treatment plants and the properties they're located on, and the vendors supply the staffing and operate the plants. SPU has a dedicated Senior Engineer in the Water Quality Division who oversees the water treatment plant operations and administration of the contracts. The vendors invoice SPU monthly for their services. Invoiced charges are quite complex and include a base service charge, which is inflated annually based on two relevant cost indices, incentive payments for the contractors for a lack of non-compliant events (i.e., incidences when water quality doesn't meet defined standards)¹⁴, productivity adjustments for the use of electricity and chemicals, and liquidated damage penalties for the contractors for non-compliance events. There are also some pass-through costs included on the invoices for chemicals, diesel fuel, and insurance expenses. SPU provides a reserve fund to the vendors annually that is used for larger maintenance expenses and equipment purchases; the vendors need to provide invoice support to SPU for the use of these reserve funds.

Cell Net Electronic Metering Project In 2007 and 2008, SPU participated with Seattle City Light (SCL) in an automated metering pilot project, using Cell Net as the primary vendor. SCL was in charge of this project. The project involved using a radio frequency (RF) network to collect electricity and water meter readings and transmit them to SCL and SPU headquarters. The pilot project covered an area of two square miles within the South Lake Union and Denny triangle neighborhoods. Equipment was installed on the top of street light poles to collect the meter readings and this equipment, called concentrators, transmitted the data to SPU and SCL. SCL paid all expenses for this pilot project, except those that were directly related to water meter readings, and SCL apportioned those charges to SPU based on the Memorandum of Agreement (MOA) between SCL and SPU. SPU's charges represented 3% of the total project charges. SCL waited until all of the project's expenses were submitted by the vendors and then billed SPU in one invoice. SPU's meter electronics staff worked with SCL to support this pilot project.

Scope of Audit Work

We reviewed the controls over outsourced SPU water operations for the areas of vendor contracts, vendor invoicing, and vendor performance. Our audit objectives were to ensure vendor contracts appropriately protected SPU's and the City's interests, vendor invoicing was accurate in accordance with contract terms, and vendors performed the agreed-upon services in alignment with contract terms and SPU's performance expectations. We limited our audit work to the water treatment plant contracts, and to the now completed automated meter reading pilot project with SCL and Cell Net. We performed detailed review of invoicing accuracy controls for the water treatment plants and reviewed a sample of 2008 invoices from both vendors. We verified the calculations and adjustments involved, and the source documents and data in most

¹⁴ Non-compliant events are tracked continuously by the vendors' SCADA systems (i.e., a systems control software application used for monitoring operations) and the SPU Water Quality Engineer periodically verifies both the information the contractors included with their invoice and their SCADA system data.

cases. We worked with the responsible SPU Senior Water Quality Engineer to conduct this work and also with DEA's Risk Management division in relation to reviewing insurance coverage and charges. We toured the Tolt water treatment plant and met with vendor personnel and management. We also performed a limited review of SCL's invoicing to SPU for the electronic meter project and verified that SPU was charged accurately.

Conclusion

Overall, we concluded that controls are adequate over SPU's outsourced water operations, except for one area. We found no issues with the invoicing for the electronic metering project. In our opinion, the water treatment plant contracts are properly managed and administered. The water treatment invoices generally appear to be accurate, and properly reviewed before payment. However, we did note some issues with the water treatment plant insurance coverage, contract terms, and pass through charges. The details on this issue are covered below.

Water Treatment Plant Liability Insurance - Conclusion 14: There are some issues with the insurance for the water treatment plants. High risk

Background

Both of the water treatment plant contracts require the vendors to provide general liability, pollution liability, employee liability, and vehicle insurance. SPU provides the bulk of the property insurance for the plants because it is cheaper for the City to do this under the City's very large property insurance policy. The contract terms specify the required insurance levels for each type of coverage. SPU and DEA Risk Management receive insurance certificate documents from each vendor annually that specify their levels of insurance coverage.

As per contract terms, the vendors "pass through" their insurance expenses related to the water treatment plants by including these charges on their monthly invoices to SPU. Both of these vendors carry large liability insurance policies that cover their entire operations, so they allocate a percentage of their policy costs to SPU for the water treatment plants.

Issue, Impact, and Recommendation

The terms in the water treatment contracts relating to insurance coverage should be adequate to minimize risk to the City and protect the City's interests. SPU and DEA Risk Management should ensure both vendors are in compliance with contract insurance terms, and SPU should ensure that insurance pass-thru charges are accurate. We found that there are currently some issues in these areas:

- **Insurance Terms** The analyst responsible for reviewing vendor insurance coverage for the City indicated the current contract insurance terms require revisions to properly protect the City's interests and to bring them in line with standard insurance terms. DEA Risk Management indicated they would revise the contract terms.
- **Proof SPU/City is Insured Party for Tolt** An important insurance control is to obtain documentation that the City is listed as an "insured party" on the vendor's insurance policy because it provides proof that insurance coverage will be extended to the City in

the event of a claim. During the audit, we verified that the City obtained this proof from OMI for the Cedar water treatment plant, but found that it had not obtained it from American Water for the Tolt plant. DEA Risk Management commented that they were confident the City would be covered in the event of a claim, but agreed that obtaining this documentation of coverage is an important control. Since the time of our audit work, SPU and Risk Management obtained the proper documentation from American Water and resolved this issue.

- Proof of Property and Pollution Liability Insurance for Tolt We reviewed the most recent Certificates of Insurance coverage provided by the vendors and verified that OMI has provided the appropriate levels of insurance for the Cedar plant, as specified in the contract. However, we noted that American Water did not list either property or pollution liability insurance coverage on their Certificate of Insurance for the Tolt plant, though they did list all of the other types of insurance coverage as required by the contract. DEA Risk Management indicated they would work with American Water to ensure this gets resolved.
- Insurance Charges We worked with the SPU Senior Water Quality Engineer to verify the accuracy of the insurance pass-through charges on a sample of water treatment plant invoices from 2008. We concluded that the charges for the Tolt plant were accurate, based on supporting data requested from and provided by the vendor, American Water. However, we found that insurance charges for the Cedar River plant were overbilled by \$7,719 by the vendor, OMI. This overbilling was due to OMI erroneously double-billing the cost of the performance bond, by charging it to SPU as a direct pass-through charge and then also apportioning the amount and including it in the monthly insurance allocation charge to SPU. OMI billed SPU \$31,907 for total insurance costs in 2008 and the amount should have been \$24,188. In addition, we noted that neither vendor had provided sufficient supporting documentation to SPU to verify the accuracy of the insurance pass-through charges. SPU will require this documentation going forward.

ACTIONS PLANNED OR TAKEN

Insurance Terms: DEA Risk Management will work with the water treatment plant vendors to revise the contract terms related to insurance. The estimated date of completion is by the end of second quarter, 2010.

Proof of Property and Pollution Liability Insurance for Tolt: DEA Risk Management will work with American Water to obtain proof of property and pollution liability insurance for the Tolt plant. The estimated date of completion is by the end of second quarter, 2010.

Insurance Charges: Having discovered the errors related to overbilling, SPU will recover the amount due at the end of 2009 as part of the year-end true-up process. SPU also conducted a detailed review of the insurance billings for 2006 and 2007 and found similar errors, although for lesser amounts. SPU was overbilled by \$370 in 2006 and under-billed by \$1,764 in 2007. These errors will also be recovered at the end of the 2009 year-end true-up process. Regarding verification of insurance pass-thru charges, SPU will require this supporting documentation going forward.

APPENDIX 1

Water Revenue Data

	2003	2004	2005	2006	2007	2008
Residential Revenue					\$65,458,360	\$68,766,946
Commercial Revenue					\$38,068,120	\$38,739,228
Residential and Commercial Revenue	\$93,265,852	\$101,859,035	\$96,536,783	\$102,308,731	\$103,526,480	\$107,506,174
Wholesale Revenue	\$41,105,938	\$38,524,420	\$40,406,425	\$40,826,206	\$41,558,385	\$42,884,151
Total	\$134,371,790	\$140,383,455	\$136,943,208	\$143,134,937	\$145,084,865	\$150,390,325

Water revenue data supplied by SPU Accounting.

APPENDIX 2

SPU Revenue Cycle Audit – Water – Risk Matrix

Risk Level Definitions:

Red = High risk – Internal controls should be strengthened as soon as possible.

Yellow = Medium risk – It would be ideal to strengthen internal controls.

Green = Low risk – Internal controls appear to be adequate.

Scope Area & Issues	Risk Level
Rate-Setting and Wholesale Water Contracts	Green
Utility Usage Tracking	Yellow
• Meter Reading Quality Assurance	Yellow
• Special Meter Reads Due to Covered Meters	Yellow
• Water Usage Exception Parameters and Exception Review	Red
• Timeliness of Meter Testing and Repair/Replacement	Yellow
• Commercial Meter Testing and Repair/Replacement	Red
• Wholesale Meter Testing	Red
Billing	Green
• Guaranteed Deposits for New Water Connections	Yellow
• Special Taps Billings	Green
Customer Payment Processing and Accounts Receivable Management – Wholesale Accounts	Green
• Wholesale Customer Payment Terms	Yellow
Account Adjustments – Leak Rebates	Yellow
• Water Leak Rebate Policy	Yellow
• Water Leak Rebate Timeliness	Yellow
Fund Accounting – Revenues and Receivables	Yellow
• Accounts Receivable Reconciliation	Yellow
Information Technology – Summit Accounts Receivable and Itron Systems	Yellow
• SPU Accounts Receivable System Access Rights	Yellow

Vendor Contracts, Invoicing, and Performance	Yellow
• Water Treatment Plant Insurance	Red