



RECYCLED WATER USERS' HANDBOOK

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1.0 INTRODUCTION

Thank you for considering being a partner in solving our regions water challenges by participating in San Antonio Water System (SAWS) Water Recycling program. SAWS Recycled Water Users' Manual was developed to provide potential customers with information on the program and the rules and regulations that govern the usage of recycled water. This manual will be distributed to organizations that inquire on recycled water service from SAWS prior to service. Hopefully this information will be useful.

Recycled water is not subject to drought management or critical period water use reduction measures, including the Aquifer Management Plan found in Division 4, Article IV, of Chapter 34 of the City Code. Therefore, by participating in SAWS' Water Recycling Program, you have an opportunity to irrigate your valuable landscape and turf when Edwards water is restricted during times of drought. Also recycled water from SAWS is cheaper than potable water.

1.1 Purpose

It is impossible to overstate the importance of groundwater supplies to San Antonio, Texas. Recycling of treated municipal wastewater is an essential element of the SAWS Conservation and Reuse Plan designed to reduce the use of potable groundwater for non-potable applications. A major goal of this plan is to virtually eliminate the use of groundwater for irrigation and stream augmentation and preserve the integrity of the Edwards Aquifer that underlies much of south-central Texas. A fundamental goal of the program is the acquisition by SAWS of Edwards Aquifer water withdrawal rights from customers who are Edwards Aquifer water withdrawal rights owners.

The SAWS Water Recycling Program is designed to provide up to 35,000 acre feet a year of recycled water to commercial and industrial businesses in San Antonio. By substituting 20 percent of SAWS' demand on the Edwards Aquifer (35,000 acre feet/year) with recycled water for non-drinking uses, aquifer water can be preserved for drinking water and allow San Antonio a continued quality of life. In addition, recycled water will help to preserve the economic vitality of the region by providing businesses with a firm supply of water to use for commercial, industrial and manufacturing purposes.

1.2 Project Description

In 1993, the SAWS Board of Trustees adopted a Water Conservation and Reuse Plan which included a recycled water plan. SAWS staff was directed in 1995 by the SAWS Board to begin the process of soliciting consulting engineering firms, Pape-Dawson Consultant Team was selected as the firm to provide professional engineering services for the Water Recycling project, including concept engineering, project management, design, and construction management. SAWS conducted public information fairs to provide residents of San Antonio and Bexar County with an opportunity for input on SAWS Recycling Water Program. As a result of the public input, the Pape-Dawson Engineering Consultant Team completed the location of the main transmission truck line to service the identified customers.

The program consists of Salado Creek Water Recycling Center to service the eastern portion of the system and the Leon Creek Water Recycling Center to service the western portion of the system. SAWS plans to interconnect Salado and Leon Creek Water Recycling Centers to SAWS' largest facility, the Dos Rios Water Recycling Center. The Dos Rios Water Recycling Center will be the main source of recycled water for the system. A deadline of June 30, 1997 was given to the

identified potential recycled water customer base to submit to SAWS a signed request for service document. This non-binding document confirms the intention by customers to purchase recycled water from the SAWS System when such water becomes available. Approximately 47,000 acre feet of water was requested to be purchased from 78 potential recycled water customers from SAWS.

SAWS' Water Recycling Centers, in total, generate 130,000 acre feet of highly treated recycled water on an annual basis. Approximately 40,000 acre feet is guaranteed to City Public Service (CPS), approximately 55,000 acre feet will be guaranteed for downstream commitments and the remaining 35,000 acre feet is programmed for the recycled water system. CPS uses recycled water from SAWS for its cooling lakes, Braunig and Calaveras lakes.

Wastewater treated at SAWS' Water Recycling Centers goes through an advanced treatment process. This process uses physical, biological, and chemical principles to remove harmful materials in the water. The quality of recycled water that SAWS produces is of a very high quality and can be used for a number of beneficial purposes. The final product is colorless, odorless, and virtually indistinguishable from Edwards Aquifer water. The recycled water definition applies to reclaimed, reuse, and non-potable water.

If you have questions or comments on our program call (210) 233.3673, or write to:

*San Antonio Water System
Recycled Water Program
2800 U.S. Hwy. 281 North
P.O. Box 2449
San Antonio, TX 78298-2449*

1.3 Trucking Program

SAWS also has a recycled water Trucking Program, where recycled water can be received off SAWS' main transmission trunk line and at the Dos Rios and Salado Creek Water Recycling Centers. SAWS' Treatment Group (210) 233.3213 will be the first point of contact for the potential recycled water customers that desires to be serviced. Section 1.3 of this document (Trucking Program) refers only to this aspect of the program. The remainder of this document pertains to recycled water service from SAWS for commercial, industrial and manufacturing customers receiving recycled water through an extension main off our main trunk line.

SAWS will provide a contract that will outline in details the responsibilities of the user. SAWS' will schedule SAWS' Inspections Department to inspect the transportation vehicle(s) to obtain a permit. Once contract and inspection approval(s) have been completed, the documents will be signed by the appropriate signature authority within SAWS.

SAWS' Trucking Program emphasizes the protection of the public potable water system from actual or potential contamination through cross connections and backflow situations. A cross connection is any connection between the potable water supply and another water supply of unknown quality or any source, which may contain contaminating or polluting substances. All permitted water-hauling equipment and/or potable water mixing tanks or any other type outlet must be protected by an air gap separation.

Transporters and users who store recycled water for less than 24 hours are not required to determine if the water quality meets these standards at the time of use. Any recycled water that is held for more than 24 hours may require additional disinfection to meet the TCEQ (Texas Commission on Environmental Quality, formerly TNRCC) fecal coliform standards for the intended use. Therefore, SAWS requires that the recycled water be used the same day the recycled water is picked up. Any excess or used recycled water must be collected and returned to a wastewater collection or treatment system.

Written agreements between the hauler and the approved user are required and copies must be submitted to SAWS. Transporters will be required to keep a log of all recycled water deliveries, dates, quantities and approved site. Users will be required to keep a log of all recycled water deliveries and use dates, quantities and site.

All records regarding recycled water quality, volumes, uses, and management shall be maintained on SAWS' property and the users' sites for a period of five years. In the event of enforcement actions or litigation, certain records could be required for longer periods.

For further interpretation of the rules and regulations and rates for SAWS' Trucking Program, please feel free to contact SAWS at (210) 233.3213.

1.4 FINANCIAL ASSISTANCE AND CUSTOMER CLASSIFICATIONS

A customer may be eligible to receive financial assistance ("Conversion Benefit") from SAWS for the cost of infrastructure improvements for converting to recycled water use and any potable water protection devices that need to be implemented. This financial assistance is in the form of a credit off the customers recycled water monthly bill for an agreed upon period of time. The customer classification determines the eligibility to receive the SAWS' Conversion Benefit. SAWS will credit an approved customer a one-time Conversion Benefit equal to the product of nine hundred dollars (\$900.00) multiplied by the number of acre feet the recycled water customer contracts for. SAWS has categorized the recycled water customers into three categories:

- 1) Existing SAWS' Commercial and Industrial Potable Customers
- 2) Edwards Well Owners (Exchange Customers)
- 3) New Customers

Important policy elements within the three customer categories that are addressed are, trading recycled water for Edwards Aquifer water withdrawal rights, distribution mains to service the customers, on-site retrofitting, and the recycled water rate structure. For a more definitive description of SAWS' recycled water policies, please refer to Appendix B of this document containing, "Chapter 34, San Antonio City Code, Recycled Water Service and Rates".

1.4.1 Existing SAWS Customers

In order for an organization to be considered an Existing SAWS customer the following criteria must be met:

- Commercial and Industrial potable water customer of SAWS on June 30 1997, who files a request for recycled water service with SAWS.

- Customer implements approved water conservation plan within one year.

If customer does not meet all above criteria, they will be considered a "New Customer."

If a SAWS Existing Customer contracts to purchase recycled water from SAWS in lieu of using Edwards Aquifer water, then the Existing Customer may be entitled to assistance for the distribution main installation and infrastructure improvements. The Conversion Benefit may also be used for and any potable water protection devices that need to be implemented. This financial assistance is in the form of a credit off the customers recycled water monthly bill for an agreed upon period of time.

SAWS will credit the Existing Customer a one time Conversion Benefit for approved on-site and/or distribution main recycled water system improvements equal to the sum of \$900 per acre foot of water per year that the Existing Customer contracts with SAWS to purchase. The Conversion Benefit may be used only by an Existing Customer to pay for the Existing Customer's off-site and on-site improvements for use of recycled water.

The Conversion Benefit will be used to pay first for the cost of a distribution and secondly, if any of the Conversion Benefit amount remains, the cost of approved on-site retrofitting and any potable water protection devices that need to be implemented. The Conversion Benefit may be used to pay for both design and construction costs. Recycled water customers should consider the property tax exemption for facilities that convert to water conserving and recycling equipment per 30 TAC 277.

1.4.2 Edwards Well Owners (Exchange Customers)

In order for a potential customer to be considered an Edwards Aquifer well owner the following criteria must be met:

- Potential customer has an existing Edwards well and has been recognized by the Edwards Aquifer Authority;
- Well owner agrees to transfer expected (or actual) Edwards Aquifer pumping rights in accordance with SAWS policy in exchange for a guarantee of recycled water to meet peak annual and daily current demand;
- Customer executes an agreement for service or letter of interest;
- Customer implements approved water conservation plan within one year;

If customer does not meet all above criteria, they will be considered a "New Customer."

The recycled water project has a fundamental goal of transferring water withdrawal rights as consideration for delivery of recycled water to customers who own their own well(s). The decision of a potential customer who owns Edwards well(s) to connect to the recycled water project may be contingent on the details of the water rights trade. If User is an Exchange Customer, User has to complete the transfer to SAWS of Edwards Aquifer water withdrawal rights which establish its Exchange Customer status and the transfer has to be fully approved by the Edwards Aquifer Authority pursuant to 31 Texas Administrative Code, Chapter 705, Subchapter H.

If an Edwards Aquifer (Exchange Customer) well owner contracts to a portion trade well rights for recycled water from SAWS in lieu of using Edwards Aquifer water, then the Existing Customer may be entitled to financial assistance for the cost of infrastructure improvements determined by SAWS to be necessary and appropriate for converting to recycled water and any potable water protection

devices that need to be implemented. This financial assistance is in the form of a credit off the customers recycled water monthly bill for an agreed upon period of time.

SAWS will credit the Edwards well owner customer a one time Conversion Benefit for approved on-site and/or distribution main recycled water system improvements equal to the sum of \$900 per acre foot of water per year that the well owner contracts with SAWS to take. The Conversion Benefit shall be computed utilizing the average acre feet of water the well owner contracts to purchase during the initial five (5) years of the recycled water purchase contract, not to exceed the customer's peak historic use, as the multiplier of the \$900 figure. The Conversion Benefit may be used only by an Edwards well owner to pay for the Existing Customer's off-site and on-site improvements for use of recycled water and any potable water protection devices that need to be implemented.

The Conversion Benefit will be used to pay first for the cost of a distribution and secondly, if any of the Conversion Benefit amount remains, the cost of on-site retrofitting and potable water devices needed. The Conversion Benefit may be used to pay for both design and construction costs. Recycled water customers should consider the property tax exemption for facilities that convert to water conserving and recycling equipment per 30 TAC 277.

The recycled water rate policy for those with an existing Edwards Aquifer well and, thus, an Edwards pumping right permit, the rate will be equivalent to the cost of producing water from their well which has been estimated at \$75 per acre foot plus the transfer of their pumping rights for their Edwards well for an amount of recycled water equal to their current use. For recycled water in excess of current use, the customer shall pay prevailing commercial and industrial rate. The acre foot charge may be adjusted in the future.

1.4.3 New Customer

A new customer is either a Developer-Customer, a potable customer of another purveyor, or an Edwards well owner or SAWS potable water customer that did not execute a request for recycled water before the designated June 1997, deadline. Subject to available supply, the new customer will design and construct the approach main from a transmission trunk main to the point of use and on-site storage facility if needed. New customers will pay for the cost of the modifications to the facility to receive, distribute, and apply recycled water inside the property line. The Conversion Benefit does not apply to new customers.

Subject to availability of supply, consideration of SAWS involvement with new customers/new development in an economic enterprise zone will be in accordance with Council direction or existing SAWS policy. Recycled water customers should consider the property tax exemption for facilities that convert to water conserving and recycling equipment per 30 TAC 277.

1.5 Rates

SAWS' recycled water rates structured to make recycled water service attractive to customers. The rate for Recycled Water supplied to User by SAWS shall be as set forth in Article VIII, Chapter 34 of the City Code, as it may be amended.

Please keep in mind that there is an there is a monthly meter charge based upon the size of the meter and recycled water rates may be subject to amendment at one time in the future. It is recommended that a separate recycled water irrigation meter is installed to assure that no sewer charge is imposed. Most importantly, SAWS' recycled water customers do not have to pay SAWS' Water Supply Fee

or the Edwards Aquifer Authority (EAA) Fee. This can be a significant factor when evaluating your organization's participation in SAWS' Recycled Water Program.

2.0 REGULATORY REQUIREMENTS

In June of 1997, SAWS' Water Recycling Program was approved by the Texas Commission on Environmental Quality (TCEQ) formally the Texas Natural Resources Conservation Commission (TNRCC). As a user of SAWS' recycled water, you will need to establish, report, and maintain certain records and documents required by TCEQ and SAWS. To assist your organization in meeting SAWS' and TCEQ rules and regulations, this document contains a summarization of these requirements. For a more definitive description of SAWS' recycled water policies, please refer to Appendix C of this document containing, "TCEQ, Title 30, Chapter §§210, Use of Reclaimed Water" of the TAC. Note that the definition of recycled water applies to reclaimed, reuse, and non-potable water.

2.1 Customer Contracts

Each recycled water customer has varying needs and requirements in order to be served with recycled water. Fundamental rules and regulations apply to all customers, however, SAWS requires a written contract that stipulates the terms and conditions of service which may be different for each customer. The TCEQ along with SAWS requires a clear indication of the means for compliance with Chapter §§210, including documentation that a customer will be apprised of the responsibilities under Chapter §§210 as part of a recycled water supply contract.

2.2 Responsibilities

The user of recycled water will designate a site supervisor; this individual will primarily be responsible to prevent cross connections and to serve as a single contact for SAWS, regulatory agencies, and employees at their facility. The site supervisor should also have oversight for all records, signage, and training of employees on the proper usage of recycled water. When choosing the site supervisor, consider the following qualities:

- knowledge of operational and maintenance activities
- authority to modify or change system to prevent cross connections and protect public health
- understanding of TCEQ and local regulations governing the use of recycled water
- available for contact by regulatory agencies and employees can communicate on numerous topics related to the application of recycled water

SAWS will not be found in violation of TCEQ Chapter §§210 for the misuse of the recycled water by the user. As the provider, SAWS is responsible for assuring the transfer of recycled water to the point of delivery, sampling and reporting of such analyses. SAWS will notify the TCEQ executive director in five days of knowledge of recycled water use not authorized.

The provider and user of recycled water will distribute and use recycled water in accordance with the established rules and regulations outlined in TCEQ, Chapter §§210, Use of Reclaimed Water and the rules and regulations and other regulatory agencies.

2.3 General Requirements

Most of the general rules and regulations are common sense. Below is a summarization of general

requirements outlined in the TCEQ rules and regulations,

- no nuisance conditions resulting from the distribution, use, and/ or storage of recycled water
- recycled water will not degrade ground water quality
- recycled water managed in ponds for storage will be designed to prevent discharge into waters of the state, except for discharges resulting from rainfall events
- hose bibs will be required on all potable water faucets on users onsite facilities.
- all exposed piping should have proper color coding or stenciled
- where recycled water is stored signs will be posted reading, in both English and Spanish, "RECYCLED WATER, DO NOT DRINK" or similar warning.
- quick couplers will be required for all recycled water faucets and signs will be posted reading, in both English and Spanish, "RECYCLED WATER, DO NOT DRINK" or similar warning. quick couplers shall be keyed entry to restrict access, painted purple and designed to prevent connection to a standard hose
- signs may be Educational in nature
- no recycled water usage over the Edwards Aquifer recharge zone / transition zone
- back-flow protection required

2.3.1 Irrigation Using Recycled Water

Irrigation systems will be designed and operated to minimize ponding and/or runoff. In existing systems, alterations, such as change of sprinkler nozzles or operating pressure may be required. Irrigation systems must use part-circle sprinklers along boundaries, sidewalks, and buildings to prevent overspraying onto adjacent properties or unintended uses. Food crops irrigated with recycled water can be eaten by humans if the food item is substantially processed or other irrigation means are used other than spray irrigation. User agrees to take steps to minimize the risk of inadvertent human exposure to the Recycled Water.

For recycled water customers that will use recycled water for irrigation purposes, SAWS will require soil samples collected and analyzed prior to recycled water service. Soil analyses will then be performed once a year thereafter. Sampling and cost of the soil analyses will be handled SAWS. The results of the sampling analysis will be made available to each recycled water customer. In addition, you must obtain a permit from SAWS and the City of San Antonio Plumbing Inspection Department before any modifications may be made to your on-site recycled water system, including extensions or reductions. Irrigation with recycled water can be used during the curtailment of potable water. **However , no day time irrigation with any water source including recycled water is allowed between 10:00 am and 8:00 pm per City Code.**

2.3.2 Industrial and Commercial Applications Using Recycled Water

SAWS' recycled water can be used for commercial and industrial applications other than irrigation and it is not surprising that this area of recycling comprises the newest, most innovative, and fastest growing applications for recycled water. Examples of these usage's are: process water, dust control and soil compaction, concrete mixing, manufacturing, laundries, and vehicle washing to name a few. Each potential recycled water user's specific recycled water needs will be evaluated on a case by case basis.

2.4 Recycled Water Quality

The recycled water quality furnished to the customers by SAWS will be in compliance with

parameters established by TCEQ for Type I usage under Chapter §210 TAC. As stated in Chapter 30 TAC § 210.33(1) the minimum recycled water quality for Type I will be:

BOD ₅ or CBOD ₅	5 mg/L ¹
Turbidity	3 NTU ¹
Fecal Coliform	20 CFU/100 ml ²
Fecal Coliform	75 CFU/100 ml ³

¹ thirty day average (not to exceed)

² geometric mean (the nth root, usually the positive nth root, of a product of n factors)

³ single grab sample (not to exceed)

In addition to the requirements identified in Chapter §§210, SAWS will also assure the following parameters:

Ammonia Nitrogen	≤ 2.0 mg/L
pH	6.0 - 9.0 Standard Units
Total Suspended Solids (TSS)	≤ 15 mg/L
Total Dissolved Solids (TDS)	≤ 1500 mg/L
Sodium Adsorption Ratio (SAR)	≤ 5.0 meq/L
Residual Sodium Carbonate (RSC)	≤ 1.50 meq/L

These additional parameters are three month running averages. The Recycled Water Service Agreement provides actions should these levels be exceeded. For a more definitive description of SAWS' recycled water quality vs Edwards Aquifer water, please refer to Appendix D of this document.

2.4.1 Sampling and Analysis

SAWS will sample the recycled water at a minimum of twice per week prior to distribution to a user to assure that the water quality is in accordance with intended contracted use. The results of the sampling analysis will be made available to each recycled water customer. SAWS will carry out periodic fecal coliform sampling at designated locations throughout the recycled water distribution system as a additional mechanism to ensure the quality of the recycled water to be delivered.

2.5 Record Keeping and Reporting

As a user of SAWS' recycled water, you will need to establish, report, and maintain certain records and documents required by TCEQ. TCEQ requires SAWS as a provider to report to the commission on a monthly basis the volume of recycled water delivered to each customer and the quality of recycled water delivered to each customer.

2.5.1 Notification Requirements

User agrees to notify SAWS by telephone, e-mail or fax of any Recycled Water use not authorized, including, but not limited to, spills, leaks, discharges, or releases of a material volume of Recycled Water into or adjacent to the waters of the State. The only exception is when the discharge or spill is caused by rainfall events or in accordance with a permit issued by the TCEQ.

Telephonic or faxed notice must be given to SAWS within 24 hours of obtaining knowledge of any such spill, leak, discharge, or release. SAWS personnel will then assist in (1) assessing the extent of the unauthorized discharge and (2) aid in determining what reports, if any, need to be made as well as assist in making the reports. SAWS will then provide written notice to TCEQ within 5 working

days of obtaining knowledge of any such spill, leak, discharge, or release. To assist the customer in collecting information, an example of the reporting form for the above mentioned requirements can be found in Attachment E of this document. Notification contacts are as follows:

San Antonio Water System
2800 U.S. Hwy. 281 North
San Antonio, Texas 78212
Phone Number: (210) 704-7297(SAWS)
Fax Number: (210) 233-4156 Attn: Dispatcher

In addition, you must obtain a permit from SAWS and the City of San Antonio Plumbing Inspection Department before any modifications may be made to your on-site recycled water system, including extensions or reductions. You must also obtain the written consent of SAWS before changing the intended purpose or location of use of SAWS recycled water. SAWS' encourages you to take steps to prevent unauthorized access to your recycled water system. As the user of recycled water, you are solely responsible for any use of SAWS recycled water not authorized under your SAWS Recycled Water Agreement and/or Chapters 210 and 290 of Title 30 of the Texas Administrative Code.

SAWS and the users will archive all records for a period of no less than five years. The contracted user of recycled water will archive copies of the recycled water contracts, records of volume of recycled water delivered, and recycled water and soil analyses. In the event of enforcement actions or litigation, certain records could be required for longer periods.

3.0 RECYCLED WATER SERVICE

3.1 Site Visit

Representatives from SAWS will schedule an initial site evaluation. The purpose of the site visit is to verify the facilities layout, to determine the general feasibility of servicing the site with recycled water, and to determine backflow prevention and cross-connection requirements for both recycled water and the potable water system. An initial site walk-through is the first step in evaluating any site for compatibility with recycled water.

3.2 Evaluation and Approval

From the information obtained from the site visit, SAWS will decide whether additional information is needed to determine the appropriateness of using recycled water at the proposed site. Should additional information be required from the prospective customer. Upon determination by SAWS that the site is appropriate for the use of SAWS' recycled water, a contract will be executed.

3.3 Recycled Water Service Agreement

The recycled Water Service Agreement definitively outlines the terms and conditions. It also spells out the desired gallons per minute (GPM) and psi. A generic copy of this document can be found in Attachment I of this document.

3.4 Training

The recycled water customer will need to attend a training session approved by SAWS relating to User's responsibilities and Applicable Laws prior to the initiation of Recycled Water service and once every twelve months. The training provided by SAWS will include education on lawful uses

of Recycled Water, regulations governing the operation and maintenance of Onsite Systems, and emergency notification procedures in the event of breaks, leaks, spills, cross-connections and answer any questions pertaining to recycled water use.

4.0 CONSTRUCTION PLANS

Before any customer can connect to the SAWS recycled water system or proceed to SAWS' Mains and Services Department, the customer must have a signed a Recycled Water Service Agreement. A customer will need to submit to SAWS the following:

- Application fee
- Drawings and Specifications
- Plan Review.

The construction plans drawn to scale should show:

- existing and/or new facilities to be used for distributing, controlling and applying recycled water to the site
- all potable water lines and facilities buildings and other improvements
- areas to be irrigated or recycled water usage to be located in these areas
- evidence that soil infiltration capacity and water rates have been assessed

Upon the approval of the connection application from SAWS' Mains and Services Department, a permit to proceed with the construction work shall be issued. Any work done by a customer/applicant before the permit to proceed with construction is performed at the customer/applicant's expense and risk that the permit will not be issued. The recycled water customer will also have to obtain an on-site plumbing permit from the City.

5.0 CONSTRUCTION REQUIREMENTS

5.1 Procedures and Construction Certificate of Conformity

All work will be done in accordance with SAWS' standard details and specifications. All on-site recycled water facilities are subject to periodic inspection by SAWS or other regulatory agencies. Upon satisfactory completion and inspection of the constructed distribution line, SAWS will issue a certificate of construction conformity.

5.2 Backflow Prevention

The recycled water user's responsibility for preventing contamination of the potable water system begins at the user's potable water service connections. All potable water service connections must be equipped with a reduced-pressure-principle backflow prevention assembly. After installation, the assembly will be tested annually by a certified tester approved by SAWS. When deemed a Fire Line a double check valve assembly will be required.

5.3 Cross Connection

The requirements of this section are designed to protect the public potable water system from contamination. The customer agrees to comply with all the provisions and requirements at User's expense. The Onsite System shall be constructed to prevent backflow of Recycled Water into the public potable water system. User agrees to install, operate, test and maintain approved backflow prevention assemblies as required herein or as may be required by SAWS' Cross Connection Control and Backflow Prevention Program, or Chapters 210 or 290 of Title 30 of the Texas Administrative Code, as each may be amended. User further agrees to provide SAWS, before Recycled Water service is initiated and thereafter upon request by SAWS, information to allow SAWS to determine the degree of hazard to the public potable water system presented by User's Onsite System or any other actual or potential contamination hazard that may exist on User's site. Such information shall include plumbing, construction, building and irrigation plans, and any other information SAWS reasonably deems necessary to making the determination. When it is determined by SAWS that a backflow prevention assembly is required for the protection of the public potable water system, User shall properly install an approved backflow prevention assembly at each service connection and/or at the hazard point (outside city limits), test annually or more often in those instances where successive inspections indicate repeated failure, and properly repair and maintain such assemblies. User also shall cause all backflow prevention assemblies used for health hazard protection to be inspected and tested by a certified backflow prevention tester to ensure that it is in proper operating condition at the time of installation (and before initiation of service), at the time of any repairing or relocation (and before resuming operations thereof), and at the completion of each year of service. User shall maintain accurate records of tests and repairs made to backflow prevention assemblies and provide SAWS with copies of such records via the SAWS Test & Maintenance Report form within 10 days of the inspection, test or maintenance. Repiping and relocation of any assembly shall require prior written approval of SAWS. SAWS reserves the right to perform periodic tests on backflow prevention assemblies on User's site. **SAWS shall prohibit or discontinue service to User if User maintains an actual or potential hazard to the public potable water system or if User's plumbing is susceptible to cross connections unless adequate protection against backflow is provided to the satisfaction of SAWS.**

A cross connection is any connection between the potable water supply and another water supply of unknown quality or any source which may contain contaminating or polluting substances.

5.4 Valves and Controls

All valves on the recycled system must be secured from unauthorized use. They will be operable with special tools available to authorized personnel. All recycled water systems must have a master cutoff valve located near the service connection.

If automatic controllers are used:

- A drawing of the area served by the controller will be sealed in plastic and placed in the controller box.
- The controller box will be keyed to allow access only by authorized personnel.

5.5 Recycle Water System Identification

The on-site recycled water system will be identified using purple pipe or purple tape whenever feasible. In new developments, all subsurface piping and fixtures will be marked in purple. During conversion of existing potable systems, all exposed subsurface piping and fixtures will be marked. All above ground parts of the recycled water system, including valves, valve boxes and covers, controllers, piping, quick couplers or other outlets and related appurtenances must be marked in accordance with SAWS specifications.

5.5.1 New Potable Water System Identification

The new on-site potable water system will be identified using tape green with white lettering or blue with black lettering marked "potable water buried below" attached to the pipe. All new fire line services will be identified using tape red with black lettering marked "fire line buried below" attached to the pipe. All above ground parts of the potable water system or fire line services including valves, valve boxes and covers, piping, hose bibs or other outlets and related appurtenances, must be marked in accordance with SAWS specifications.

5.5.2 Existing Potable Water System Identification

The existing on-site potable water system will need to be identified using tape green with white lettering or blue with black lettering marked "potable water buried below" whenever the pipe is exposed for repair or modification. All existing fire line services will be identified using tape red with black lettering marked "fire line buried below" whenever the pipe is exposed for repair or modification. All above ground parts of the potable water system or fire line services including valves, valve boxes and covers, piping, hose bibs or other outlets and related appurtenances, must be marked in accordance with SAWS specifications.

5.6 Public Notification

All sites using recycled water will prominently display signs reading in both English and Spanish, "RECYCLED WATER, DO NOT DRINK" or similar warning. Signs may be educational in nature. Also, all exposed piping should be purple, stenciled in black with a warning reading "RECYCLED WATER, DO NOT DRINK". Where recycled water is stored or where there exist hose bibs or faucets signs will be posted reading in both English and Spanish, "RECYCLED WATER, DO NOT DRINK" or similar warning.

Golf courses using recycled water may want to consider notices with language similar to that above on score cards.

6.0 SYSTEM INSTALLATION AND START-UP

6.1 Inspections During Construction

Representatives of SAWS and other regulatory agencies will have access to the site at all times. The applicant is required to notify SAWS at the following points during construction and at other times as requested.

6.2 System Start-up and Required Testing

Upon final inspection and approval of the system by SAWS, the final testing phase begins. Multiple tests will be conducted not limited to: two way shut down test, the backflow prevention assembly; cross-connection control; and ponding, runoff, and overspraying.

6.3 Backflow Prevention Assembly and Cross-Connection Testing

The backflow prevention assembly on potable water lines will be tested upon installation. Thereafter, at least once each year, the devices will be tested. Testing is also required whenever assembly(s) are relocated, repaired, or overhauled or if the supply has been changed in any way.

These tests shall be performed by a certified tester approved by SAWS. The results will be provided to SAWS, Cross-Connection Control Section.

A dye test will be requested and monitored by SAWS to test for possible cross-connections with the potable water system. Following a compliance dye test, a cross-connection dye test may be repeated each time a system change is made. Periodic dye tests may also be required by SAWS or regulatory agencies.

APPENDIX A

Recycled Water Program Definitions

SAN ANTONIO WATER SYSTEM RECYCLED WATER PROGRAM DEFINITIONS

This information was developed to aid users in comprehending the rules and regulations that are involved in the SAWS' Recycled Water Program. The following words and terms will have the following meanings unless the context of this document or TCEQ Chapter §§ 210, Use of Reclaimed Water, clearly indicates otherwise.

Air Gap Separation – Is an unobstructed vertical distance through free atmosphere between the lowest point of a water supply outlet and the flood level rim of the fixture or assembly into which the outlet discharges. These vertical, physical separations must be at least twice the diameter of the water supply outlet, but never less than 1 in. (25mm).

AFY - Acre-Feet a Year

Agricultural Use - Water used for production of crops and/or livestock and the preparation of these products for market.

Applicant -Any person, firm, corporation, association or agency who applies for recycled water service.

Application Rate - The rate at which water is applied to a use area, usually expressed in inches per hour.

Approved use - An application of recycled water in a manner and for a purpose, designated in a user permit issued by the purveyor and in compliance with all applicable regulatory agency requirements.

Automatic System - Controllers, valves and associated equipment used to program and systematically operate irrigation systems for the efficient application of recycled water.

Check Valve - A water automatic device which allows flow of water in one direction only.

Commercial/Industrial Use - Water used for toilets, urinals, decorative fountains; industrial process such as rinsing, washing, cooling, flushing, circulation or construction; and other related uses.

Contractor - Any person(s), firm or corporation entering into a legal agreement with the agency, owner or user for the performance of work on any portion of the facilities subject to these regulations.

Conversion Benefit - The sum of money paid by SAWS to, or cost incurred by SAWS specifically to the benefit of: (i) an Existing Customer of SAWS who contracts to purchase recycled water thereby reducing the Existing Customer's utilization of Edwards Aquifer water and (ii) any customer who exchanges with SAWS all or part of the customer's Edwards Aquifer water withdrawal rights for recycled water from SAWS.

Customer - Any person, group, firm, partnership, corporation, association or agency who accepts

recycled water service from a purveyor.

Distribution Main - A recycled water main offsite to a customer which is constructed at the expense of the recycled water customer and which connects one or more customers with a SAWS transmission main. Distribution mains terminate at: (i) the point of connection with a customer's recycled water meter, and (ii) the point of connection with SAWS' transmission mains. All distribution mains (including the recycled water meter connecting to a customer's on-site recycled water main) accepted by SAWS become the property of SAWS at the time the distribution main is accepted.

Double Check Valve Assembly – Consists of two internally loaded check valves, either spring-loaded or internally weighted, installed as a unit between two tightly closing resilient-seated shutoff valves as an assembly. The test cocks located on the assembly are for testing it's function in a backflow situation.

Existing Customer - A potable water customer of SAWS on June 30, 1997, who filed a request for recycled water service with SAWS.

Edwards Exchange Customer - A customer who exchanges Edwards Aquifer water withdrawal rights for a like volume of recycled water and who filed a request for recycled water service with SAWS. An Edwards Exchange Customer can only exchange Edwards Aquifer water withdrawal rights which have been recognized by the Edwards Aquifer Authority, either pursuant to: (i) interim authorization, (ii) an initial regular permit, or (iii) a regular permit, under Title 31, Chapter 705 et seq. of the Texas Administrative Code. An Edwards Exchange Customer may exchange all or a portion of its permitted Edwards Aquifer Water withdrawal rights. A transfer of permitted Edwards Aquifer water withdrawal rights from an Edwards Exchange Customer to SAWS must be approved by the Edwards Aquifer Authority pursuant to Title 31, Chapter 705, Subchapter H of the Texas Administrative Code or such future regulations as the State or Edwards Aquifer Authority may promulgate. In order to qualify for Edwards Exchange Customer status, the transfer of Edwards Aquifer water withdrawal rights to SAWS must be perpetual and unconditional. An Edwards Exchange Customer will only be provided recycled water in an amount which is equal to the Edwards Aquifer water withdrawal right which is transferred to SAWS. An Edwards Exchange Customer is not required to exchange the entirety of its Edwards Aquifer water withdrawal right, only that portion the Edwards Exchange Customer wishes to exchange for recycled water.

Landscaped Area - Is any area of land which has had its natural vegetive cover enhanced or modified to improve the aesthetic qualities or utilities of the property.

Nuisance - Any distribution, storage, or use of recycled water that is or may be injurious to or which adversely affects human health or welfare, animal life,

On-site Recycled Water Mains - Any recycled water transport or distribution lines on the customer's side of the recycled water meter. On-site recycled water mains are built by the customer and subject to permitting, SAWS and Title 30, Chapter 210, et seq. of the Texas Administrative Code minimum standards and inspection as set out in the SAWS Water Recycling Standards.

Pond System -Waste facility in which primary treatment followed by stabilization ponds that may be used for secondary treatment and in which the ponds have been designed and constructed in accordance with applicable design criteria.

Potable Water - Water which is pure and wholesome (e.g., Edwards Aquifer water), and conforms

to all current quality standards of federal, State and local authorities.

Producer - A person or entity that produces recycled water by treating wastewater.

Provider - A person or entity that distributes water to a user(s) of recycled water. Also, the recycled water provider may be a reclaimed water producer.

Purveyor - Agency or organization that sells and distributes reclaimed water to a customer.

Recharge Zone - Generally, that area where the stratigraphic units constituting the Edwards Aquifer outcrops, and including the outcrops of other geologic formations in proximity to the Edwards Aquifer, where caves, sinkhole, faults, fractures, or other permeable features would create a potential for recharge of surface waters into the Edwards Aquifer. The recharge zone is identified as that area designed as such on official maps located in the offices of the commission and the Edwards. At this time, the program is limited to restricted landscaped areas or to commercial or industrial sites, which are not located over the Edwards Aquifer Recharge Zone. The transition zone will be considered part of the recharge zone.

Recycled Water - Domestic and Municipal wastewater which has been treated to a quality suitable for a beneficial use. The term recycled water applies to reuse, non-potable and reclaimed water.

Recycled Water Facilities - System, structures, etc. used in the treatment, storage, pumping, transmission and distribution of recycled water.

Reduced pressure principle (R/P) – Consists of two independently acting, approved check valves together with a hydraulically operating, mechanically independent pressure differential relief valve located between the check valve and below the first check valve. These units are located between two tightly closing resilient-seated shutoff valves, as an assembly. The test cocks located on the assembly are for testing its function in a backflow situation.

Restricted Landscaped Area - is one which is not readily available to or intended for general public access and which has controls and limits on the times of access and the types of activities allowed on the property. For public property, the control can be legal means, such as a state law or city ordinance. Examples of such areas are: municipal golf courses, cemeteries, road right-of-way, and median dividers. In the case of private property, the more usual means of control is the placement of physical barriers, such as walls, fences, restricted vehicular access (e.g., manned or unmanned security gates), or other similar means of physically limiting access requirements and/or hours of operation. Examples of such (privately owned) areas are: golf courses, commercial or industrial facilities' landscaping, and private (non-residential) vehicle access drives. It is conceivable that differing interpretations could be made as to the designation of a particular site proposed for irrigation. SAWS, as the permitting authority, reserves the right to make final determination as to the designation of any property proposed for landscape irrigation.

Spray Irrigation - Application of finely divided water droplets using artificial means.

Transmission Main - A recycled water main including pumping and monitoring facilities built at the expense of SAWS.

Unrestricted Landscaped Area - is one which is generally open to the public or designated for uncontrolled private access, without mandatory time or use restrictions. Such areas generally lack

physical barriers to entry, although they may be partially or wholly fenced. These areas are also often designated for contact recreation (e.g., ball fields, picnicking, etc.) for both adults and children. Examples of such areas are: parks, school yards, and greenbelts.

It is conceivable that differing interpretations could be made as to the designation of a particular site proposed for irrigation. SAWS, as the permitting authority, reserves the right to make final determination as to the designation of any property proposed for landscape irrigation.

Users - person or entity utilizing recycled water for beneficial use. A recycled water user may also be a producer or a provider. The user can also be referred to as the customer.

APPENDIX B

Chapter 34, San Antonio City Code, Recycled Water Service and Rates

**ARTICLE VIII. RECYCLED WATER SERVICE
AND RATES***

DIVISION 1. RECYCLED WATER, GENERALLY

Sec. 34-1.01. Purpose of Recycled Water Program.

The purpose of the SAWS' recycled water program is the replacement of Edwards Aquifer water usage with recycled water for nonpotable uses of water thereby making the Edwards Aquifer water available for other uses. A fundamental goal of the program is the acquisition by SAWS of Edwards Aquifer water withdrawal rights from customers who are Edwards Aquifer water withdrawal rights owners. SAWS seeks to acquire such Edwards Aquifer withdrawal rights by exchange for a contractual commitment to deliver equivalent quantities of recycled water that unlike Edwards Aquifer water is not subject to reduction during drought periods.

Sec. 34-1.02. Contracting for purchase of recycled water.

SAWS and customers desiring to purchase recycled water from SAWS shall be required to enter into a written recycled water contract setting forth the terms and conditions upon which such transaction will be consummated. The recycled water contracts shall comply with the provisions of this Article VII, as well as any other applicable laws, rules and regulations.

Sec. 34-1.03. Authorized uses of recycled water.

Recycled water shall be used exclusively for commercial, industrial, irrigation, landscape maintenance, streamflow enhancement and other specific uses described in the recycled water contract between SAWS and a customer. Recycled water use shall be in compliance, where applicable, with Title 30, Chapter 210, *et seq.* of the Texas Administrative Code.

Sec. 34-1.04. Prohibited uses of recycled water.

Recycled water shall not be used for drinking, food preparation, domestic purposes or any type of human consumption. A violation of this section may be cause for the immediate termination of a recycled water contract between SAWS and a customer.

Sec. 34-1.05. Prohibited sales of recycled water.

It shall be unlawful for any person to sell recycled water to any other person for any purpose other than an authorized purpose described in Section 34-1.03.

DIVISION 2. QUALITY OF RECYCLED WATER

Sec. 34-2.01. Quality of recycled water.

All recycled water supplied, treated, transmitted and distributed by SAWS shall be in compliance with the parameters established by TCEQ for Type I usage under Title 30, Chapter 210, *et seq.* of the Texas Administrative Code. The minimum recycled water quality will be as follows:

BOD ₅ or CBOD ₅	5 mg/L
Turbidity	3 NTU

Fecal Coliform	20 CFU/100 ml*
Fecal Coliform	75 CFU/100 ml**

- * geometric mean (the n^{th} root, usually the positive n^{th} root, of a product of n factors)
- ** single grab sample (not to exceed).

SAWS shall provide periodic recycled water quality data to all recycled water customers. Specific recycled water quality issues and specific treatment requirements unique to any customer may be addressed by SAWS and the individual customers in recycled water contracts.

Sec. 34-2.02. Supplying below standard recycled water to another.

It shall be unlawful for any person to supply any other person with recycled water which does not comply with the recycled water standards described in Section 34-2.01.

Sec. 34-2.03. Analyses of recycled water required.

At a minimum, every official or other person responsible for any recycled water supply, who furnishes recycled water for any authorized recycled water use, shall have at least one (1) sanitary analysis of a representative sample of recycled water from the distribution system made twice weekly and shall retain records for a minimum of three (3) years.

DIVISION 3. RECYCLED WATER SYSTEM

Sec. 34-3.01. Definitions:

- (a) Conversion Benefit. The sum of money paid by SAWS to, or cost incurred by SAWS specifically to the benefit of: (i) an Existing Customer of SAWS who contracts to purchase recycled water thereby reducing the Existing Customer's utilization of Edwards Aquifer water and (ii) any customer who exchanges with SAWS all or part of the customer's Edwards Aquifer water withdrawal rights for recycled water from SAWS.
- (b) Distribution Main. A recycled water main off-site to a customer which is constructed at the expense of the recycled water customer and which connects one or more customers with a SAWS transmission main. Distribution mains terminate at: (i) the point of connection with a customer's recycled water meter, and (ii) the point of connection with SAWS' transmission mains. All distribution mains (including the recycled water meter connecting to a customer's on-site recycled water main) accepted by SAWS become the property of SAWS at the time the distribution main is accepted.
- (c) Existing Customer. A potable water customer of SAWS on June 30, 1997, who filed a request for recycled water service with SAWS.
- (d) Edwards Exchange Customer. A customer who exchanges Edwards Aquifer water withdrawal rights for a like volume of recycled water and who filed a request for recycled water service with SAWS. An Edwards Exchange Customer can only exchange Edwards Aquifer water withdrawal rights which have been recognized by the Edwards Aquifer Authority, either pursuant to: (i) interim authorization, (ii) an initial regular permit, or (iii) a regular permit, under Title 31, Chapter 705 *et seq.* of the Texas Administrative Code. An Edwards Exchange Customer may exchange all or a portion of its permitted Edwards Aquifer Water withdrawal rights. A transfer of permitted

Edwards Aquifer water withdrawal rights from an Edwards Exchange Customer to SAWS must be approved by the Edwards Aquifer Authority pursuant to Title 31, Chapter 705, Subchapter H of the Texas Administrative Code or such future regulations as the State or Edwards Aquifer Authority may promulgate. In order to qualify for Edwards Exchange Customer status, the transfer of Edwards Aquifer water withdrawal rights to SAWS must be perpetual and unconditional. An Edwards Exchange Customer will only be provided recycled water in an amount which is equal to the Edwards Aquifer water withdrawal right which is transferred to SAWS. An Edwards Exchange Customer is not required to exchange the entirety of its Edwards Aquifer water withdrawal right, only that portion the Edwards Exchange Customer wishes to exchange for recycled water.

- (e) On-site Recycled Water Mains. Any recycled water transport or distribution lines on the customer's side of the recycled water meter. Onsite recycled water mains are built by the customer and subject to permitting, SAWS and Title 30, Chapter 210, *et seq.* of the Texas Administrative Code minimum standards and inspection as set out in the SAWS Water Recycling Standards.
- (f) Transmission Main. A recycled water main including pumping and monitoring facilities built at the expense of SAWS.

Sec. 34-3.02. Extension policy.

SAWS will design and construct all recycled water transmission mains, recycled water treatment facilities, and recycled water pumping facilities SAWS determines are necessary and appropriate for providing recycled water to SAWS' recycled water customers. Recycled water shall be sold to customers whose water purchase volumes and/or decreases in Edwards Aquifer water withdrawals volumes due to recycled water purchases make it practicable and beneficial, in SAWS' opinion, to provide recycled water to the customer.

Sec. 34-3.03. SAWS not obligated to proceed.

- (a) In no event shall SAWS be obligated to proceed with the construction, maintenance or operation of the recycled water system, or any part thereof, unless there are sufficient funds available, or if in the opinion of the Board of Trustees of SAWS, the main extension or recycled water operation is not in the public interest.
- (b) The decision of the President/CEO of SAWS, or his designee, shall be final in the determination of line size, approval of plans and specifications, the decision to enter into a recycled water contract with a customer and the availability of funds for construction and/or reimbursement for construction of oversize lines.

Sec. 34-3.04. Specifications for service connections.

The specifications for recycled water service connections shall conform to the standards set by SAWS.

Sec. 34-3.05. Cross connections with potable water mains prohibited.

- (a) It shall be unlawful for any person to make or to maintain any cross connection or to allow any cross connection to exist at any place under the control of any person.

(b) The term cross connection, as used in this Section, is any mechanical union or any hydraulic union which, under any condition, might pass recycled water into the potable water supply system. Any switchover system potentially allowing use of potable water as a temporary substitute for recycled water if recycled water is not available shall be built to ensure that recycled water does not back flow into the potable water system.

(c) To ensure the complete separation of a customer's onsite potable water system from the lines supplying recycled water, SAWS will require an inspection of the customer's onsite potable water system by the local plumbing inspection department having jurisdiction prior to supplying recycled water. Facilities located outside incorporated city limits and not having access to municipal plumbing inspections, shall have the inspection conducted by a State Licensed Water Protection Specialist or a TCEQ approved Customer Service Inspector. The SAWS Backflow Prevention Section shall be notified of and participate in the inspections. The inspections will involve procedures to be established by SAWS. The inspections and any recommended piping modifications shall be completed prior to commencement of the recycled water service. A reinspection shut down dye test shall be conducted every three (3) years or as deemed necessary by the local plumbing inspection department and/or SAWS at the users expense.

DIVISION 4. RECYCLED WATER MAIN CONSTRUCTION

Sec. 34-4.01. Distribution Mains.

- (a) In the event a recycled water customer desires the extension of distribution mains to provide the customer with recycled water service, the customer shall bear all costs of extending the distribution main from the transmission main to the customer's property line. The size of such distribution mains are to be determined by SAWS, in its discretion, based on the customer's expected recycled water purchases.
- (b) SAWS shall review and approve the location of all recycled water distribution mains, as well as the plans and specifications for recycled water distribution mains and associated improvements including without limitation, pumps, monitoring devices and storage facilities. All construction of distribution mains shall be performed by the customer or a contractor selected by customer; provided, however, that the customer or contractor shall furnish a performance bond, executed by a corporate security authorized to do business in Texas and maintaining an agent in Bexar County upon whom service of citation may be had. Such performance bond shall be in an amount equal to the total construction cost under the contract. The bond shall be in favor of SAWS and the customer and shall assure: (i) completion of all construction required under the contract in full conformity with the plans and specifications approved by SAWS; (ii) maintenance of such construction for a period of at least ninety (90) days after acceptance of construction by SAWS; and (iii) payment in full by contractor of all subcontractors and materialmen providing labor and/or material in connection with the construction of the distribution main. All construction work on the distribution main shall be subject to inspection by City and SAWS officials and representatives. In no event shall any portion of any distribution main installed in an excavation be covered over unless and until it has been inspected and approved by SAWS.

Upon completion of construction of a recycled water distribution main and receipt of evidence acceptable to SAWS that all costs and fees for construction of the distribution main have been paid in full and all liens released, SAWS shall issue a written certificate of acceptance of the specific distribution main by SAWS, whereupon the distribution main covered by the acceptance

certificate shall be the property of SAWS.

Sec. 34-4.02. Distribution main oversizing.

SAWS may require that a distribution main being constructed by a recycled water customer be increased in diameter to a diameter larger than reasonably necessary to provide adequate recycled water service to a customer's property as a condition of approving the customer's plans and specifications for the distribution main. SAWS shall, upon completion of a distribution main constructed by a customer which meets SAWS' required sizing, reimburse the customer the reasonable incremental cost of the construction of the larger mains. The customer's responsibility for a share of the total cost of the oversized main will be limited to the greater of the scheduled charge for a 6-inch main or prorated share of the total cost of the oversize main. Cost sharing for distribution mains shall be based on the following examples:

Example 1:

Required Recycled Water Size Main 8"	- Flow Capacity, 848 GPM
Oversize Recycled Main Constructed 16"	- Flow Capacity, 3,393 GPM
Length of main constructed	= 1,980 ft.
Cost per linear foot	= \$33.33 / ft.
Total Main Construction Cost	= \$66,003

Prorated Customer Share of Main Cost:

$$\frac{848}{3393} = 0.2499$$

$$0.2499 \times \$66,003 = \$16,494$$

Customer pays cost of 6" main or prorated cost of \$16,494, whichever is greater.

Example 2:

Required Recycled Water Size Main 16"	- Flow Capacity, 3,393 GPM
Oversize Recycled Main Constructed 20"	- Flow Capacity, 5,729 GPM
Length of main constructed	= 2,013 ft.
Cost per linear foot	= \$49.76 / ft.
Total Main Construction Cost	= \$104,655

Prorated Customer Share of Main Cost:

$$\frac{3393}{5729} = 0.5922$$

$$0.5922 \times \$104,655 = \$61,976$$

Customer pays prorated cost of \$61,976.

Sec. 34-4.03. Construction of oversize distribution main.

Any distribution main construction by a customer which includes oversizing of a distribution

main at the request of SAWS and for which oversizing the customer is to be reimbursed by SAWS shall be advertised for bids in the manner generally required for SAWS construction. All qualified bids submitted shall be publicly opened and let in the same manner as other SAWS construction contracts are bid and let. The construction contract shall be between the customer and contractor.

Prior to commencement of the work under the contract for construction of an oversize distribution main, the contractor must have supplied SAWS with:

- (a) A copy of the fully-executed construction contract for the distribution main. The contract shall provide that SAWS is a beneficiary of the contract with rights to enforce such contract and that all warranties of the contractor under the contract also extend to SAWS once SAWS has accepted the distribution main. The contractor shall agree that SAWS may enforce any guaranty of contractor's work without joinder of the contractor;
- (b) An original executed copy of the payment and performance bond naming SAWS as an additional insured;
- (c) A sales tax certificate; and
- (d) Evidence that all insurance requested by SAWS is in place and where required evidence that SAWS is an additional insured. The minimum insurance requirements shall be the same as those required by SAWS from general contractors for a similar size project.

Sec. 34-4.04. Payment for oversize distribution main.

Any oversize reimbursement computed pursuant to Section Sec. 34-4.02. above shall be paid by SAWS to the customer who constructed and paid for the oversize distribution main, unless the customer and SAWS have previously agreed in writing to the payment of the oversize reimbursement in the manner set forth in Section 34-4.05. below. The payment shall be made within thirty (30) days of the final acceptance of the oversize distribution main by SAWS.

Sec. 34-4.05. Deferred reimbursement of oversize distribution main costs by credit application.

SAWS and a customer may agree in writing at any time before SAWS' acceptance of oversize work by SAWS that the oversize reimbursement will be paid by SAWS to the customer by SAWS, allowing the customer to apply the oversize reimbursement on a dollar-for-dollar basis as a credit against twenty (20) percent of the customer's recycled water bill each month until the oversize reimbursement credits are fully utilized.

Sec. 34-4.06. Third party use of oversize distribution main.

If a customer wishes to connect to a distribution line oversized at SAWS' expense, then SAWS, as a condition of allowing the customer to acquire recycled water from the oversize distribution main, shall require the customer to pay SAWS a prorata share of the distribution main's oversize costs based on a ratio of available oversize flow capacity and the contracted monthly purchases or expected monthly purchases of the customer.

Sec. 34-4.07. Requirements for oversize distribution main reimbursement.

In no event shall a customer be entitled to receive oversize distribution main credit reimbursements unless the customer has complied with all conditions and obligations of the

customer's recycled water contract and all applicable laws. SAWS shall provide customers with the form of the certification required from the customer before SAWS will accept the oversize distribution main.

Sec. 34-4.08. Distribution main constructed by SAWS.

SAWS may, at its discretion, construct distribution mains at its cost and expense where SAWS determines that such extensions are beneficial to the growth of the recycled water system and are practical in light of projected revenue, expected acquisition of Edwards Aquifer water withdrawal rights and/or impact of Edwards Aquifer water pumping reductions that will result from the availability of the distribution main. In said event, SAWS may charge recycled water customers their prorata share of the distribution main built at SAWS' expense. The customer's prorata share shall be based on the total capacity of the distribution main to the capacity to be used by the customer's system, but in no event less than the volume contracted for by the customer in relationship to the capacity of the main. If a customer oversizes its system for future expansion, the customer's share of the distribution main cost will be based on the projected volumes of recycled water to be purchased by the customer.

Sec. 34-4.09. Where mains may be located.

All recycled water mains and other recycled water infrastructure which are owned by SAWS shall be constructed in or located: (a) on SAWS, city, county or state-owned property, including any public street or alley or any platted or publicly owned drainage facility; (b) within the boundaries of any SAWS, city, county or state-owned creek or river bed; or (c) within a platted or otherwise dedicated easement or right-of-way which has been granted to SAWS, the city, the county or the state and recorded in the real property records of the county in which the land is located.

Sec. 34-4.10. Public property requirement.

Where SAWS as part of its recycled water transportation and distribution system requires pumps, treatment facilities, storage, testing sites or other facilities, all such facilities including all access roads to them, shall be located on public land or within an easement properly granted SAWS for such purpose as evidenced by a written instrument recorded in the real property records of the county in which it is located.

DIVISION 5. RECYCLED WATER CONSTRUCTION PERMITS AND INSPECTION

Sec. 34-5.01. Private construction permit required.

Before any customer shall apply for a permit for connection to the SAWS recycled water system, the customer must have completed application to SAWS and obtained a permit from SAWS to connect to the recycled water system. At the time of application the customer/applicant shall have completed the following:

- (a) Fees. Pay to SAWS the fees specified in the SAWS Recycled Water Specifications. The application fee is non-refundable and is not applied to recycled or other water purchases.
- (b) Drawings and Specifications. Whenever in the opinion of SAWS, drawings and specifications are required to show definitely the nature and character of the construction for which the application is made, the customer shall furnish such drawings

(to scale) and specifications for the customer construction to SAWS for review and approval. Such drawings and specifications shall detail all proposed construction from the SAWS recycled water meter to the place of use of the recycled water.

- (c) Plan Review. SAWS shall review the data submitted by the customer/applicant within thirty (30) working days of actual receipt. If SAWS, in its discretion, determines that the application (including the plans and specifications) does not conform with the requirements of this Article, SAWS shall note, in writing, all objections on the application and/or plans or on an attachment thereto and shall return the submitted plans and specifications with the basis for the rejection to the customer/applicant. The customer/applicant shall have thirty (30) days from the date the application was returned to customer/applicant to submit the plans to modify and resubmit the plans and application based on SAWS' comments. SAWS and the customer/applicant may continue the review procedure for one property up to three (3) submissions to SAWS without payment of added fees. Thereafter a resubmitted application fee as specified in the SAWS Recycled Water Specifications shall be required.
- (d) Recycled Water Contract. The customer/applicant and SAWS shall have executed a contract for the purchase of recycled water by the customer/applicant from SAWS.

Upon the approval of an application, a permit to proceed with the construction work shall be issued. Any work done by a customer/applicant before the permit to proceed with construction is performed at the customer/applicant's expense and risk that the permit will not be issued. A construction permit issued under this Article shall be valid for six (6) months from the later of: (i) the date of issue of the permit, or (ii) if the permit issued contains a notation that SAWS provided mains to which the customer/applicant's work is to be connected are not then available, six (6) months after SAWS notifies the customer/applicant that SAWS-provided mains for services of the customer/applicant are ready and available for connection to customer/applicant's work. If work is begun within the six (6)-month period, SAWS may extend the permit for an additional six (6) months on such terms as SAWS deems appropriate.

Sec. 34-5.02. Installation and inspection.

- (a) Construction Requests. All privately-constructed mains shall be installed in strict compliance with the construction requirements of the SAWS Recycled Water Specifications set forth in the SAWS Recycled Water Specifications.
- (b) Inspection. After installation, but prior to covering, all privately-constructed mains shall be inspected by SAWS to ensure that all construction is in accordance with SAWS Recycled Water Specifications. It is the duty of the customer to provide reasonable notice to SAWS when a main is or will be ready for inspection.
- (c) Reinspection. If the SAWS inspector finds that the main is not in accordance with SAWS Recycled Water Specifications, then the customer shall make the necessary corrections and the work shall be submitted for reinspection. The work shall be available for reinspection within ten (10) days of the date the customer or its representative is notified of the revisions required. For each reinspection the applicant shall pay a reinspection fee as specified in SAWS Recycled Water Specifications.
- (d) Certification. Upon satisfactory completion and inspection of a main, SAWS shall issue a certificate of construction conformity. The issuance of such certificate shall evidence

SAWS' acceptance of the distribution main and appurtenant improvements on SAWS' side of the recycled water meter as the property of SAWS. Such certificate is solely for the benefit of the customer and SAWS and shall not be relied upon by any third party.

Sec. 34-5.03. Unaccepted work.

- (a) Nonconforming Work. Any work determined by SAWS or a local plumbing inspection department for on-site work, in their sole discretion to be inferior in quality and not in conformance with the approved plans and specifications shall be replaced or corrected immediately. If the work is not corrected within ten (10) days (or such longer period as SAWS may have agreed to in writing, but not more than sixty (60) days), then the permit shall be revoked and no further permits shall be issued to the customer until the rejected work fully complies with all applicable requirements and is accepted by SAWS.
- (b) Revocation of Permit. SAWS or a local plumbing inspection department for onsite work, may revoke a permit in the event there have been any false statements or misrepresentations as to any material fact in connection with an application or plans on which the permit approval was based, or if unaccepted work is not corrected within the sixty (60)-day cure period.

DIVISION 6. RECYCLED WATER ONSITE IMPROVEMENTS

Sec. 34-6.01. Inspection of onsite improvements.

All on-site recycled water distribution piping within the City of San Antonio shall be installed by a licensed and bonded plumbing contractor. A permit and inspection by the City of San Antonio, Building Inspections Department shall be required. All piping and installation shall be in accordance and comply with Section 603 and Appendix J of the adopted Uniform Plumbing Code (UPC) or other adopted standards.

Sec. 34-6.02. Conversion Benefit for Existing Customers.

If a SAWS Existing Customer contracts to purchase recycled water from SAWS in lieu of using Edwards Aquifer water, then the Existing Customer may be entitled to financial assistance for the cost of infrastructure improvements determined by SAWS to be necessary and appropriate for converting to recycled water.

The financial assistance shall be extended only to the extent available and will initially be made available only to Existing Customers and Edwards Exchange Customers. If additional funds for financial assistance remain available after Existing Customers and Edwards Exchange Customers have had an opportunity to utilize financial assistance, financial assistance may be made available, at the discretion of SAWS, to other customers.

SAWS will credit the Existing Customer a one time Conversion Benefit for approved on-site and/or distribution main recycled water system improvements equal to the sum of \$900 per acre foot of water per year that the Existing Customer contracts with SAWS to take. The Conversion Benefit shall be computed utilizing the average acre feet of water the Existing Customer contracts to purchase during the initial five (5) years of the recycled water purchase contract, not to exceed the customer's peak historic use, as the multiplier of the \$900 figure.

The Conversion Benefit may be used only by an Existing Customer to pay for the Existing Customer's off-site and onsite improvements for use of recycled water, including but not limited to:

distribution mains; meters and appurtenances thereto; connection of the recycled water system from the meter to the common distribution points of recycled water on the Existing Customer's property; retrofit of irrigation and other water systems to take water from the separate recycled water source rather than from the existing Edwards water source; costs of modifying equipment to use the recycled water (e.g., pressure adjustments); storage facilities for recycled water to be stored onsite for use during peak demand periods when there is determined by SAWS to be a benefit to the entire recycled water system from such storage; and switchover equipment allowing the Existing Customer to switch from the recycled water source to a substitute water source should recycled water not be available. The Conversion Benefit shall be used to pay first for the cost of a distribution main to be built at the Existing Customer's expense and secondly, to the extent of any Conversion Benefit remaining, for the cost of the Existing Customer's onsite improvements. Conversion Benefit may be used to pay for both design and construction costs.

SAWS may approve use of the Conversion Benefit funds for specialized recycled water equipment based on Existing Customer's needs. Such additional authorized uses for the funds may include onsite testing facilities for recycled water quality or water quality improvement facilities. Conversion Benefit funds may be used only for construction and equipping such specialized recycled water facilities, but specifically not to reimburse the Existing Customer's operating and maintenance costs for the water quality and/or recycled water monitoring procedures.

Sec. 34-6.03. Conversion Benefit for Edwards Exchange Customers.

An Edwards Exchange Customer may be entitled to receive a Conversion Benefit payment, because of its transfer of Edwards Aquifer water withdrawal rights to SAWS, in addition to any Conversion Benefit the Edwards Exchange Customer might qualify for as an Existing Customer for SAWS potable water. An Edwards Exchange Customer's additional Conversion Benefit may be computed by multiplying \$900 by the number of acre feet of Edwards Aquifer water withdrawal rights the owner has transferred to SAWS. In addition to the permitted use of Conversion Benefits set out in this Article, the Edwards Exchange Customer may use the Conversion Benefit payment to cap or plug closed wells and to construct onsite transportation facilities from the recycled water main to the points of use of the recycled water.

Sec. 34-6.04. Payment of Conversion Benefit.

A Conversion Benefit shall be credited when all of the following have occurred:

- (a) the Existing Customer or Edwards Exchange Customer has executed a recycled water contract with SAWS specifying the volume of recycled water anticipated to be purchased each year for not less than five (5) years;
- (b) the Existing Customer or Edwards Exchange Customer agrees to pay all costs associated with recycled water service not covered by SAWS;
- (c) the Existing Customer or Edwards Exchange Customer has prepared and submitted to SAWS a water conservation plan which is to be implemented within one (1) year;
- (d) the Existing Customer or Edwards Exchange Customer has completed all on-site and offsite retrofitting which is to be paid for by Conversion Benefit funds, as well as any other onsite work reasonably necessary to begin use of the recycled water in accordance with the approved recycled water plan within six (6) months; and

- (e) the Edwards Exchange Customer has completed the transfer of Edwards Aquifer water withdrawal rights which establish its Edwards Exchange Customers status and such transfer has been fully approved by the Edwards Aquifer Authority pursuant to Title 31, Chapter 705, Subchapter H of the Texas Administrative Code.

Sec. 34-6.05. Conversion Benefit refund.

If a customer fails to perform all conditions for payment of a Conversion Benefit and such breach continues uncured for sixty (60) days after written notice of the breach by SAWS, then SAWS may require the immediate refund of the Conversion Benefit, which sum shall be payable to SAWS on demand.

DIVISION 7. RECYCLED WATER SERVICE

Sec. 34-7.01. Priority for certain new recycled water customers.

SAWS will prioritize its provision of recycled water service, where possible, to potential new customers as follows:

- (a) first priority shall be given to potential customers who are U.S. military installations and potential customers located in the areas of former U.S. military installations;
- (b) second priority shall be given to potential customers located in economic enterprise zones or associated with economic development projects targeted by SAWS, the City of San Antonio, or Bexar County;
- (c) third priority shall be given to potential customers who are Edwards Exchange Customers;
- (d) fourth priority shall be given to potential customers who are current SAWS potable water customers and who will be replacing the use of potable water for non-potable with recycled water for such purposes; and
- (e) fifth priority shall be given to all remaining potential customers.

Sec. 34-7.02. Delivery of recycled water.

Specific conditions relating to the delivery point, delivery quantities and pressure, metering requirements and maintenance responsibilities will be set forth for each recycled water customer in the recycled contract for such customer.

Sec. 34-7.03. Quantity of recycled water delivered.

The quantity and rate of delivery of recycled water to be purchased by any customer shall be set forth in the recycled water contract between SAWS and such customer.

Sec. 34-7.04. Quality of recycled water delivered.

If any time the recycled water available from SAWS fails to meet the requirements of Title 30, Chapter 210, *et seq.* of the Texas Administrative Code, SAWS shall, upon the request of the customer, provide the customer substitute water of at least comparable quality in a quantity equal to

the quantity of contracted recycled water that SAWS is unable to provide, at rates not to exceed the rate for recycled water then applicable.

Sec. 34-7.05. Reliability of recycled water service.

SAWS will provide recycled water on a regular basis in such quantities set forth in the recycled water contract between SAWS and each customer. Recycled water service may be interrupted in the event of recycled water main or pipeline breaks or repairs, recycled water main or pipeline construction or upgrades, or due to Acts of God or other extraordinary circumstances. In the event of any interruption in recycled water service, SAWS shall provide substitute water of comparable quality to each affected customer at rates not to exceed the rate for recycled water then applicable. Except as specified in this Article, SAWS shall not be liable for an interruption in recycled water service.

Sec. 34-7.06. SAWS' duty to supply substitute water.

If after a customer has performed all of its obligations under its contract to purchase the recycled water, including construction of a distribution main and onsite improvements, SAWS is unable to provide the quantity of contracted recycled water for any reason, SAWS shall, upon request of the customer, provide the customer substitute water of at least comparable quality in a quantity equal to the quantity of contracted recycled water that SAWS is unable to provide, at rates not to exceed the rate for recycled water then applicable.

Sec. 34-7.07. Interruption in service to Edwards Exchange Customers.

If SAWS is unable to provide recycled water in compliance with the terms of an Edwards Exchange Customer's recycled water contract, or substitute water of at least comparable quality in a quantity equal to the quantity of contracted recycled water that SAWS is unable to provide, an Edwards Exchange Customer may, at the Edwards Exchange Customer's cost and expense, withdraw and utilize Edwards Aquifer water under the Edwards Aquifer water withdrawal right which has been transferred to SAWS in an amount equal to the lesser of: (i) the Edwards Exchange Customer's actual onsite beneficial use without waste, as that term is defined under Edwards Aquifer Authority regulations set forth at Title 31, Chapter 703, Section 703.1(B) of the Texas Administrative Code, or (ii) the quantity specified in the Edwards Exchange Customer's recycled water contract with SAWS.

The right to the Edwards Exchange Customer to utilize a portion of SAWS Edwards Aquifer water withdrawal right after an interruption of service is expressly conditioned on no objection to the procedure being made by the Edwards Aquifer Authority. It shall be the joint duty of the Edwards Aquifer Exchange Customer who utilizes a portion of the SAWS Edwards Aquifer water withdrawal right pursuant to this section and of SAWS to notify the Edwards Aquifer Authority of the Edwards Exchange Customer's intention to do so.

Sec. 34-7.08. Exemption from reduction measures.

The quantity of recycled water which SAWS agrees to provide pursuant to any recycled water contract between SAWS and a recycled water customer shall be exempt from compliance with the specific water use reduction measures set forth in Division 4, of Article 4 of this Chapter (Aquifer Management Plan), but not from other provisions in this Chapter. In the event a recycled water customer purchases recycled water from SAWS in excess of the contracted amount, SAWS, as it determines to be necessary, may reduce such customer's purchase of the recycled water in excess of the contracted amount.

Sec. 34-7.09. Disconnection for noncompliance.

It shall be the duty of SAWS to disconnect the recycled water service from any place where provisions of Title 30, Chapter 210 *et seq.* of the Texas Administrative Code or of this Article or of the recycled water contract in question are violated.

Sec. 34-7.10. Unlawful connection with recycled water main.

It shall be unlawful for any person who is not a party to a valid recycled water contract to bore or drill into any recycled water main or make attachments to or connections with any recycled water service pipe.

Sec. 34-7.11. Unlawful taking of recycled water.

It shall be unlawful for any person who is not a party to a valid recycled water contract to make an attachment to any recycled water main, service line or branches thereof or to otherwise take recycled water therefrom.

Sec. 34-7.12. Maintenance of recycled water service pipes.

All persons using recycled water furnished by SAWS shall keep their recycled water service system in good repair, so as to prevent leakage. Maintenance is the owner's responsibility. All customer on-site transportation, holding and distribution facilities for recycled water shall comply with the standards of Title 30, Chapter 210, *et seq.* of the Texas Administrative Code.

Sec. 34-7.13. Damage to recycled water system.

It shall be unlawful for any person, in any way, to intentionally or carelessly break, deface or in any manner damage or destroy any recycled water main, service line or branch thereof, or any hydrant, meter, standpipe or other property belonging to the City, SAWS or others, and used in connection with the collection, treatment, metering, storage, supply, transmission and distribution of recycled water.

Sec. 34-7.14. Title to recycled water service apparatus.

Title to all recycled water meters, curb-cocks and appurtenances that are attached through service lines or branches thereof to the recycled water mains of the SAWS recycled water system, including the meter and enclosing curb-cock boxes, shall be vested in the City for the singular use and benefit of the SAWS Board of Trustees. No person other than a duly authorized agent or representative of the Board of Trustees of SAWS shall open the meter or curb-cock or appurtenances thereto. SAWS shall maintain, repair and replace all meters, curb-cocks and appurtenances in connection therewith at its cost and expense.

DIVISION 8. RECYCLED WATER RATES AND CHARGES

Section 34-8.01. Establishment of rates.

The rates for recycled water contained in this Section shall be effective at 12:01 a.m. on

_____, 1997, shall be applied only after one monthly billing cycle has been completed; and shall be the lawful rates for recycled water service to be charged by SAWS.

The Monthly Meter Charge (minimum bill) for all general recycled water service furnished through meters of the following sizes together with the Monthly Volume Charge measured per 100 gallons for water usage in every instance of service for each month or fraction thereof shall be as follows:

(a) For Edwards Exchange Customers.

(i) Monthly Meter Charge

<u>Meter Size</u>	<u>Net Meter Charge</u>	<u>Gross Meter Charge</u>
5/8"	\$8.00	\$8.40
3/4"	\$10.40	\$10.92
1"	\$13.55	\$14.22
1-1/2"	\$21.55	\$22.63
2"	\$31.51	\$33.08
3"	\$83.81	\$88.00
4"	\$124.56	\$130.79
6"	\$237.61	\$249.49
8"	\$358.16	\$376.33
10"	\$491.12	\$515.68
12"	\$605.96	\$635.26

(ii) Monthly Volume Charge

<u>Usage in Gallons</u>	<u>Rate Per 100 Gallons</u>	
	<u>Standard</u>	<u>Seasonal</u>
Transferred amount	\$0.0230	\$0.0230
All in excess of transferred amount	\$0.0863	\$0.0917

The Volume Charge "Seasonal" Rate Per 100 Gallons shall be applied to all billings beginning July 1 and ending on or about October 31 of each year. At all other times the Volume Charge "Standard" Rate Per 100 Gallons shall be utilized.

(b) For Existing Customers.

(i) Monthly Meter Charge

<u>Meter Size</u>	<u>Net Meter Charge</u>	<u>Gross Meter Charge</u>
5/8"	\$8.00	\$8.40
3/4"	\$10.40	\$10.92
1"	\$13.55	\$14.22
1-1/2"	\$21.55	\$22.63
2"	\$31.51	\$33.08
3"	\$83.81	\$88.00
4"	\$124.56	\$130.79
6"	\$237.61	\$249.49
8"	\$358.16	\$376.33

10"	\$491.12	\$515.68
12"	\$605.96	\$635.26

(ii) Monthly Volume Charge

<u>Step in Gallons</u>	<u>Rate Per 100 Gallons</u>	
	<u>Standard</u>	<u>Seasonal</u>
First 748,100	\$0.0924	\$0.0992
All in excess of 748,100	\$0.0943	\$0.1002

The Volume Charge "Seasonal" Rate Per 100 Gallons shall be applied to all billings beginning July 1 and ending on or about October 31 of each year. At all other times the Volume Charge "Standard" Rate Per 100 Gallons shall be utilized.

Sec. 34-8.02. Credits for retrofit costs.

To the extent Existing Customers and Edwards Exchange Customers incur approved retrofit costs as described in the SAWS Recycled Water Specifications, such Existing Customers and Edwards Exchange Customers shall be entitled to a credit against their recycled water bill. To the extent the Existing Customers are seasonal users of recycled water, the credit received pursuant to this Section for retrofit costs shall be annualized and applied against recycled water during the months the water is used.

Sec. 34-8.03. Discount rates for recycled water utilized in certain operations.

The purpose of this provision is to allow an alternate method of establishing a recycled water rate for customers who utilize recycled water in certain operations. To qualify for this method a customer/applicant must file with SAWS a report by a registered professional engineer detailing the increased volume of recycled water used in the customer/applicant's specific operation compared with the volume of potable water used in the customer/applicant's specific operation as a result of a lesser water quality of recycled water that will be utilized for the specific operation and including a proposed monthly flow recommendation. If the report is acceptable to SAWS, at its discretion, the rate for recycled water provided to the applicant/customer for operations will be discounted to reflect the increased usage so that the total cost to the customer/applicant will be the same as if the customer/applicant utilized an amount of recycled water equal to its prior use of non-recycled water in the customer/applicant to specific operation.

The SAWS Flat Rate Sewer Program set forth in Section 34-226.2 of this Chapter may also be available to cooling tower customers. The Flat Rate Sewer Program provides for an alternate method of establishing a sewer charge for users. A flat rate sewer account may be established for any recycled water user upon determination by the SAWS Customer Service Department that the costs to administer the account would not exceed the projected annual savings to the user.

Section 34-8.04. Remedies for breach.

In the event of breach of a recycled water contract by any customer, specifically including but not limited to failure to pay SAWS, SAWS may impose each of the charges described in Section 34-5.02 (a)-(f) inclusive against a customer for each account of SAWS serving the customer. Fees shall be assessed against each customer on a service by service basis.

Section 34-8.05. Calculation of quantity of recycled water delivered.

The amount of recycled water received by a customer shall be based on monthly meter readings performed by SAWS.

DIVISION 9. ENFORCEMENT.

Section 34-9.01. Authority.

SAWS' Legal Department is hereby granted the authority to seek legal and/or equitable remedies for violations of this division, including the filing of criminal charges. For the purpose of enforcing this Division the SAWS' Environmental Counsel shall represent the City of San Antonio in civil enforcement actions, by and through SAWS, and is hereby authorized to seek legal and/or equitable remedies against any person or entity which is reasonably believed to be violating or to have violated this Division. A legal proceeding pursued under this Division does not constitute a waiver by SAWS of any right the City of San Antonio may have to join in a legal action originating from an alternative source of law. SAWS may commence such actions for appropriate legal and/or equitable relief in courts having proper jurisdiction and may seek civil penalties and any other legal or equitable relief available under common law, Chapter 54 of the Texas Local Government Code, under Section 26.124 of the Texas Water Code, or any other applicable local, state, or federal code or statute.

Section 34-9.02. Penalties.

- (a) Criminal. A conviction for violation of this Division shall constitute a "Class C" misdemeanor. A person convicted of a violation of this Division shall be fined not less than two hundred dollars (\$200.00) nor more than two thousand dollars (\$2,000.00) per violation. Each violation of a particular section of this Division shall constitute a separate offense, and each day an offense continues shall be considered a new violation for purposes of enforcing this Division.
- (b) Civil. A civil penalty in an amount not to exceed one thousand dollars (\$1,000.00) per violation of this Division may be imposed. Each violation of a particular section of this Division shall constitute a separate offense, and each day such an offense continues shall be considered a new violation for purposes of assessing civil penalties and otherwise enforcing this Division. All civil penalties collected by reason of enforcing this Division shall be deposited in the Water Quality and Environmental Education and Enforcement Account as established by Article I, Division 8 of this Chapter.

Section 34-9.03. Authority of City Attorney to enforce.

The grant of the authority set out in this Section shall in no way diminish the authority and responsibility of the Office of the City Attorney to ensure that this Division is properly and diligently enforced, to prosecute violations of this division, and to defend the legality of this Division if challenged.

APPENDIX C

TCEQ/TNRCC. Chapter §§ 210, Use of Reclaimed Water

APPENDIX D

Recycled Water Quality Data

San Antonio Water System POTABLE vs RECYCLED WATER COMPARISON

(Parameters for Water Recycling Centers represent the higher ranges of the measured constituents)

PARAMETERS ANALYZED	POTABLE MCL ¹ (EPA SDWA) ²	SAWS POTABLE WATER ³	LEON CREEK ⁴ (WATER RECYCLING CENTER)	SALADO CREEK ⁵ (WATER RECYCLING CENTER)
Texas Natural Resource Conservation Commission (TNRCC) MINIMUM RECYCLED WATER REQUIREMENTS (Type I)⁶				
1. BOD ₅ - 5.0 mg/L	NA ⁷	NT ⁸	<2.0 mg/L	<2.0 mg/L
2. Turbidity (NTU) - 3	NA	NT	0.8 NTU	1.1 NTU
3. Fecal Coliform (CFU/100) - <20	NA	0 CFU/100 ml	<10 CFU/100 ml	<10 CFU/100 ml
INORGANIC plus PHYSICAL PARAMETERS:				
<i>Units Measured</i> (Unless Otherwise Noted)	<i>Parts per Million</i> (ppm)	<i>Parts per Million</i> (ppm)	<i>Parts per Million</i> (ppm)	<i>Parts per Million</i> (ppm)
1. Arsenic	0.05	<0.002	<0.001	<0.001
2. Barium	2.0	0.055	0.25	0.25
3. Cadmium	0.005	<0.0001	<0.02	<0.02
4. Chromium	0.1	<0.004	<0.01	<0.01
5. Lead	0.015 ⁹	<0.005	<0.1	<0.1
6. Mercury	0.002	<0.00013	<0.0002	<0.0002
7. Selenium	0.05	<0.002	0.0023	<0.002
8. Silver	0.1 ¹⁰	<0.003	<0.02	<0.02
9. Copper	1.3 ⁹ /1 ¹⁰	0.003	<0.02	0.02
10. Iron	0.3 ¹⁰	<0.004	0.05	0.08
11. Manganese	0.05 ¹⁰	<0.0005	NT	NT
12. Zinc	5 ¹⁰	<0.005	0.04	0.03
13. Sodium	NA	10	90	102
14. Antimony	0.006	<0.002	<0.003	<0.003

PARAMETERS ANALYZED	POTABLE MCL¹ (EPA SDWA)²	SAWS POTABLE WATER³	LEON CREEK⁴ (WATER RECYCLING CENTER)	SALADO CREEK⁵ (WATER RECYCLING CENTER)
15. Aluminum	0.05-0.2 ¹⁰	<0.02	NT	NT
16. Beryllium	0.004	<0.0003	<0.005	<0.005
17. Molybdenum	NA	<0.013	NT	NT
18. Nickel	0.1	0.006	<0.04	<0.04
19. Thallium	0.002	<0.0008	0.0059	<0.002
20. Vanadium	NA	<0.013	NT	NT
21. Calcium	NA	82	82	94
22. Magnesium	NA	14	14	14
23. Potassium	NA	<0.2	11	11
24. Cyanide	0.2	<0.02	<0.02	<0.02
25. TDS (Total Dissolved Solids)	500 ¹⁰	297	710	720
26 TSS (Total Suspended Solids)	NA	NT	4	5
27. Total Hardness (as CaCO ₃)	NA	263	280	272
28. Total Alkalinity (as CaCO ₃)	NA	228	213	250
29. Sodium Absorption Ratio (SAR)	NA	NT	2.41	2.59
30. Residual Sodium Carbonate (RSC)	NA	NT	(Negative Values)	(Negative Values)
31. Boron	NA	NT	0.25	0.28
32. Ammonia Nitrogen ¹¹	NA	NT	1.5	1.5
33. pH ¹¹	6.6-8.5 ¹⁰	7.2	7.2	7.5
34. Residual Chlorine	NA	<1.0	1	1
35. Dissolved Oxygen ¹¹	NA	NA	6	6
36. Bicarbonate Alkalinity	NA	279	NT	NT
37. Carbonate Alkalinity	NA	0	NT	NT
38. Bromide	NA	<0.5	NT	NT
39. Chloride	250 ¹⁰	17	135	190
40. Fluoride	4/2 ¹⁰	0.2	NT	NT
41. Nitrate-Nitrogen	10	1.8	13.88	14.6

PARAMETERS ANALYZED	POTABLE MCL¹ (EPA SDWA) ²	SAWS POTABLE WATER³	LEON CREEK⁴ (WATER RECYCLING CENTER)	SALADO CREEK⁵ (WATER RECYCLING CENTER)
42. Nitrite-Nitrogen	1	<0.01	0.03	0.12
43. NO ₃ +NO ₂	10	1.8	13.88	13.94
44. Sulfate	250 ¹⁰	28	81	61
45. Phosphorus (total)	NA	NT	2.2	2.3
46. Oil & Grease	NA	NT	<1.0	<1.0
VOLATILE ORGANIC COMPOUNDS:				
<i>Units Measured</i>	<i>Parts per Billion (ppb)</i>	<i>Parts per Billion (ppb)</i>	<i>Parts per Billion (ppb)</i>	<i>Parts per Billion (ppb)</i>
1. Dichlorodifluoromethane	NA	<2	NT	NT
2. Chloromethane	NA	<2	NT	NT
3. Vinyl Chloride	2	<0.4	<10	<10
4. Bromomethane	NA	<2	NT	NT
5. Chloroethane	NA	<2	<10	<10
6. Trichlorofluoromethane	NA	<1	NT	NT
7. 1,1-Dichloroethylene	7	<1	<5	<5
8. Methylene Chloride	5	<0.5	<5	<5
9. Trans 1,2-Dichloroethylene	100	<0.5	<5	<5
10. 1,1-Dichloroethane	NA	<0.5	<5	<5
11. 2,2-Dichloropropane	NA	<1	NT	NT
12. Cis 1,2-Dichloroethylene	70	<0.5	NT	NT
13. Chloroform	NA ¹²	<0.5	9.1,6.6,9.4	13.8,17.1,16.4
14. Bromochloromethane	NA	<1	NT	NT
15. 1,1,1-Trichloroethane	200	<0.5	<5	<5
16. 1,1-Dichloropropylene	NA	<1	NT	NT
17. Carbon Tetrachloride	5	<0.5	<5	<5
18. Benzene	5	<0.5	<5	<5

PARAMETERS ANALYZED	POTABLE MCL¹ (EPA SDWA) ²	SAWS POTABLE WATER³	LEON CREEK⁴ (WATER RECYCLING CENTER)	SALADO CREEK⁵ (WATER RECYCLING CENTER)
19. 1,2-Dichloroethane	5	<0.5	<5	<5
20. Trichloroethylene	5	<0.5	<5	<5
21. 1,2-Dichloropropane	5	<0.5	<5	<5
22. Bromodichloromethane	NA ¹²	<0.5	9.9,<5,12	13.5,17.7,15.7
23. Dibromomethane	NA	<1	NT	NT
24. Trans 1,3-Dichloropropylene	NA	<1	<5	<5
25. Toluene	1000	<0.5	<5	<5
26. Cis 1,3-Dichloropropylene	NA	<0.2	<5	<5
27. 1,1,2-Trichloroethane	5	<0.5	<5	<5
28. Tetrachloroethylene	5	<1	<5	<5
29. 1,3-Dichloropropane	NA	<1	NT	NT
30. 1,2-Dibromoethane (EDB)	0.05	<0.05	NT	NT
31. Chlorobenzene	100	<0.5	<5	<5
32. 1,1,1,2-Tetrachloroethane	NA	<1	NT	NT
33. Ethyl Benzene	700	<0.5	<5	<5
34. Total Xylene	10000	<1	NT	NT
35. Styrene	100	<0.5	NT	NT
36. Bromoform	NA ¹²	1.3	<5	<5
37. Isopropyl Benzene	NA	<1	NT	NT
38. 1,1,2,2-Tetrachloroethane	NA	<1	<5	<5
39. Bromobenzene	NA	<1	NT	NT
40. 1,2,3-Trichloropropane	NA	<1	NT	NT
41. n-Propyl Benzene	NA	<1	NT	NT
42. 2-Chlorotoluene	NA	<1	NT	NT
43. 1,3,5-Trimethylbenzene	NA	<1	NT	NT
44. 4-Chlorotoluene	NA	<1	NT	NT
45. Tert-Butylbenzene	NA	<1	NT	NT
46. 1,2,4-Trimethylbenzene	NA	<1	NT	NT

PARAMETERS ANALYZED	POTABLE MCL¹ (EPA SDWA) ²	SAWS POTABLE WATER³	LEON CREEK⁴ (WATER RECYCLING CENTER)	SALADO CREEK⁵ (WATER RECYCLING CENTER)
47. Sec-Butylbenzene	NA	<1	NT	NT
48. p-Isopropyltoluene	NA	<1	NT	NT
49. 1,3-Dichlorobenzene	NA	<1	<5	<5
50. 1,4-Dichlorobenzene	75	<0.5	<5	<5
51. n-Butylbenzene	NA	<1	NT	NT
52. 1,2-Dichlorobenzene	600	<0.5	<5	<5
53. 1,2-Dibromo-3-Chloropropane	0.2	<0.2	NT	NT
54. 1,2,4-Trichlorobenzene	70	<0.2	<10	<10
55. Hexachlorbutadiene	NA	<0.2	<10	<10
56. Naphthalene	NA	<0.2	<10	<10
57. 1,2,3-Trichlorobenzene	NA	<0.2	NT	NT
SEMI-VOLATILE ORGANIC				
<i>Units Measured</i>	<i>Parts per Billion (ppb)</i>	<i>Parts per Billion (ppb)</i>	<i>Parts per Billion (ppb)</i>	<i>Parts per Billion (ppb)</i>
1. Acenaphthylene	NA	<0.1	<10	<10
2. Anthracene	NA	<0.1	<10	<10
3. Benzo(a)anthracene	NA	<0.2	<10	<10
4. Benzo(b)fluoranthene	NA	<0.3	NT	NT
5. Benzo(k)fluoranthene	NA	<0.3	<10	<10
6. Benzo(a)pyrene	0.2	<0.1	<10	<10
7. Benzo(ghi)perylene	NA	<0.1	<10	<10
8. Benzylbutylphthalate	NA	<0.5	<10	<10
9. Bis-(2-ethylhexyl) phthalate	6	<0.6	<10	<10
10. Chrysene	NA	<0.3	<10	<10
11. Dibenzo(a,h)anthracene	NA	<0.1	<10	<10
12. Dibenzofuran	NA	<0.6	NT	NT
13. Diethylphthalate	NA	<0.6	<10	<10

PARAMETERS ANALYZED	POTABLE MCL¹ (EPA SDWA)²	SAWS POTABLE WATER³	LEON CREEK⁴ (WATER RECYCLING CENTER)	SALADO CREEK⁵ (WATER RECYCLING CENTER)
14. Dimethylphthalate	NA	<0.3	<10	<10
15. Fluorene	NA	<0.1	<10	<10
16. Hexachlorobenzene	1	<0.2	<10	<10
17. Hexachlorocyclopentadiene	50	<0.1	<10	<10
18. Indeno(1,2,3-cd) pyrene	NA	<0.1	<10	<10
19. Phenanthrene	NA	<0.2	<10	<10
20. Pyrene	NA	<0.1	<10	<10
21. Pentachlorophenol	1	<0.3	<50	<50
22. Di (2-ethylhexyl) adipate	400	<0.6	NT	NT
23. 2-Chlorobiphenyl	Total of 0.5	<0.1	NT	NT
24. 2,3-Dichlorobiphenyl		<0.2	NT	NT
25. 2,2',3,3',4,4',6-Heptachlorobiphenyl		<0.1	NT	NT
26. 2,2',4,4',5,6'-Hexachlorobiphenyl		<0.1	NT	NT
27. 2,2',3,3',4,5',6,6'-Octachlorobiphenyl		<0.1	NT	NT
28. 2,2',3',4,6-Pentachlorobiphenyl		<0.1	NT	NT
29. 2,2',4,4'-Tetrachlorobiphenyl		<0.1	NT	NT
30. 2,4,5-Trichlorobiphenyl		<0.2	NT	NT
31. Benzidine		NT	NT	NT
PESTICIDES:				
<i>Units Measured</i>	<i>Parts per Billion (ppb)</i>	<i>Parts per Billion (ppb)</i>	<i>Parts per Billion (ppb)</i>	<i>Parts per Billion (ppb)</i>
1. 1,2-Dibromoethane (EDB)	0.05	<0.05	NT	NT
2. 1,2Dibromo-3-chloropropane (DBCP)	0.2	<0.05	NT	NT
3. 2,4-D	70	<0.2	NT	NT
4. 2,4,5-TP (Silvex)	50	<0.1	NT	NT

PARAMETERS ANALYZED	POTABLE MCL¹ (EPA SDWA)²	SAWS POTABLE WATER³	LEON CREEK⁴ (WATER RECYCLING CENTER)	SALADO CREEK⁵ (WATER RECYCLING CENTER)
5. Alachlor	2	<0.1	NT	NT
6. Aldicarb	3	<0.2	NT	NT
7. Aldicarb Sulfoxide	4	<0.2	NT	NT
8. Aldicarb Sulfone	2	<0.2	NT	NT
9. Aldrin	NA	<0.05	<10	<10
10. Alpha-BHC	NA	<0.05	<10	<10
11. Atrazine	3	<0.3	NT	NT
12. Beta-BHC	NA	<0.05	<10	<10
13. Carbofuran	40	<0.2	NT	NT
14. Chlordane	2	<0.5	<50	<50
15. Dalapon	200	<10	NT	NT
16. Delta-BHC	NA	NT	NT	<10
17. Dieldrin	NA	<0.1	<10	<10
18. 4,4'-DDE	NA	<0.1	NT	<0.02
19. Diquat	20	NT	NT	NT
20. Dinoseb	7	<1	NT	NT
21. Endosulfan I	NA	<0.05	NT	<0.05
22. Endosulfan II	NA	<0.1	NT	<0.02
23. Endosulfan Sulfate	NA	<0.1	NT	<0.05
24. 4,4'-DDT	NA	<0.1	NT	<0.02
25. 4,4'-DDD	NA	<0.4	NT	<0.02
26. Endothall	100	<0.05	NT	NT
27. Endrin	2	<0.1	NT	<0.05
28. Gama-BHC (Lindane)	0.2	<0.05	NT	<0.02
29. Glyphosate	700	<0.1	NT	NT
30. Heptachlor	0.4	<0.05	NT	<0.02
31. Heptachlor Epoxide	0.2	<0.05	NT	<0.05
32. Methoxychlor	40	<0.3	NT	<0.2

PARAMETERS ANALYZED	POTABLE MCL¹ (EPA SDWA)²	SAWS POTABLE WATER³	LEON CREEK⁴ (WATER RECYCLING CENTER)	SALADO CREEK⁵ (WATER RECYCLING CENTER)
33. Oxamyl (Vydate)	200	<4	NT	NT
34. Picloram	500	NT	NT	NT
35. Simazine	4	<0.2	NT	NT
36. 2,3,7,8-TCDD (Dioxin)	0.00003	NT	NT	NT
37. Toxaphene	3	<1	<50	<50
38. Diazinon	NA	NT	NT	NT

KEY TO NOTATIONS

- ¹ MCL - Maximum Concentration Level
- ² EPA SDWA - Environmental Protection Agency Safe Drinking Water Act
- ³ San Antonio Water System's Potable Water data is from 1993 composite data from 12 site stations
- ⁴ Leon Creek Water Recycling Center data represents the higher range of a measured constituent, performed in the 4th quarter of 1996 or 1997
- ⁵ Salado Creek Water Recycling Center data represents the higher range of a measured constituent, performed in the 4th quarter of 1996 or 1997
- ⁶ Texas Natural Resource Conservation Commission, Type I reclaimed water quality will be the minimum water quality to be supplied to recycled water customers.

Type I reclaimed water use-This type of use includes irrigation or other uses in areas where the public would normally be present during the time when irrigation normally takes place or other uses where the public might normally come in contact with the reclaimed water. Frequency of analysis required is twice per week.

- ⁷ Not Applicable
- ⁸ Not Tested
- ⁹ Action Level, not a Maximum Concentration Level
- ¹⁰ Secondary Standard
- ¹¹ National Pollution Discharge Elimination System (NPDES) permit parameters, not to exceed limits for SAWS' Water Recycling Centers are:

Ammonia Nitrogen = ≤ 2.0 mg/L
pH = 6.0-9.0 mg/L
Dissolved Oxygen = ≥ 5.0 mg/L
TSS = ≤ 15 mg/L

- ¹² Regulated as one of four compounds with a total Maximum Concentration Limit of 100 ppb

APPENDIX E

Written Notification Form

APPENDIX F

Cross Connection Shut Down Procedures

APPENDIX G

Backflow Dye Test

APPENDIX H

Annual Inspection

APPENDIX I

Recycled Water Service Agreement