



Authorization No. R10273-002
This authorization supersedes and
replaces No. R10273-002
approved May 4, 2007.

AUTHORIZATION FOR RECLAIMED WATER

Producer: City of San Marcos
630 East Hopkins
San Marcos, Texas 78666

Provider: City of San Marcos
630 East Hopkins
San Marcos, Texas 78666

Users: Any user located in the service area and authorized by the City.

Location: The wastewater plant is located on the north bank of the San Marcos River, approximately 4,000 feet east of the intersection of State Highway 123 and Interstate Highway 35 in the City of San Marcos in Hays County, Texas.

Authorization: Reclaimed water from the City of San Marcos Wastewater Treatment Plant (Permit No. WQ0010273002) to be used for: industrial process water, including aggregate washing, truck washing, and cooling tower makeup water; irrigation of golf course, city-owned park and recreation properties and unrestricted city owned properties; dust control; and kennel cleaning at the city's animal shelter. City of San Marcos is also authorized to use similar Type I and Type II activities in the revised service area as shown on Attachment "A".

This authorization contained the conditions that apply for the uses of the reclaimed water. The approval of a reclaimed water use project under Chapter 210 does not affect any existing water rights. If applicable, a reclaimed water use authorization in no way affects the need of a producer, provider and/or user to obtain a separate water right authorization from the commission.

This action is taken under authority delegated by the Executive Director of the Texas Commission on Environmental Quality.

Issued Date: September 9, 2008


Mark Vickery, Executive Director

The authorization is subject to the following requirements:

I. General Requirements

- (a) No producer or provider may begin transferring reclaimed water to a user without first notifying the commission.
- (b) Reuse of untreated wastewater is prohibited.
- (c) Food crops that may be consumed raw by humans must not be spray irrigated. Food crops including orchard crops that will be substantially processed prior to human consumption may be spray irrigated. Other types of irrigation that avoid contact of reclaimed water with edible portions of food crops are acceptable.
- (d) There must be no nuisance conditions resulting from the distribution, the use, and/or storage of reclaimed water.
- (e) Reclaimed water must not be used in a way that degrades groundwater quality to a degree adversely affecting its actual or potential uses.
- (f) Reclaimed water stored in ponds must be prevented from discharging into waters in the state, except for discharges directly resulting from rainfall events, in accordance with a permit issued by the commission, or as authorized under the City's wastewater treatment facility (TPDES Permit No. WQ0010273002). All other discharges are unauthorized. If any unauthorized overflow of a holding pond occurs causing discharge into or adjacent to waters in the state, the user or provider, as appropriate, shall report any noncompliance. A written submission of such information must be provided to the TCEQ Region 11 office in Austin and to the TCEQ Enforcement Division (MC-149) in Austin, within five (5) working days after becoming aware of the overflow. The written submission must contain a description of the noncompliance and its cause; the potential danger to human health, safety, or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and, steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance, and to mitigate its adverse effects.
- (g) Unless otherwise provided in this authorization, there must be no off-site discharge, either airborne or surface runoff, of reclaimed water from the user's property except to a wastewater treatment system or wastewater treatment collection system unless the reclaimed water user applies for and obtains a permit from the commission that authorizes discharge of the water.
- (h) All new reclaimed water piping must be separated from potable water piping when trenched by a distance of at least nine feet. All new exposed piping, hose bibs and faucets must be painted purple and designed to prevent connection to a standard water hose. All piping must be stenciled with a warning reading "NON-POTABLE WATER."
- (i) The design of any new distribution system that will convey reclaimed water to a user must require the approval of the executive director. Materials must be submitted to the executive director for approval in accordance with the Texas Engineering Practice Act (Article 3271a,

Vernon's Annotated Texas Statutes). The plans and specifications for any new distribution system constructed pursuant to this authorization must be approved pursuant to state law, and failure to secure approval before commencing construction of such works or making a transfer of reclaimed water is a violation of this authorization. Each day of a transfer is an additional violation until approval has been secured.

- (j) Nothing in this authorization modifies any requirements of the found in 30 TAC Chapter 290, *Public Drinking Water*.
- (k) A major change from a prior notification for use of reclaimed water must be approved by the executive director before it can be implemented. A major change includes:
 - (1) a change in the boundary of the approved service area not including the conversion of individual lots within a subdivision to reclaimed water use;
 - (2) the addition of a new producer;
 - (3) a major change in the intended use, such as conversion from irrigation of a golf course to residential irrigation; or
 - (4) a change from either Type I or Type II use to the other.
- (l) The reclaimed water producer, provider, and user shall maintain a current operation and maintenance plan on the sites over which they have operational control. The operation and maintenance plan must contain the following, as a minimum:
 - (1) a copy of the signed contract between the user and provider and/or a copy of the signed contract between the provider and the producer;
 - (2) a labeling and separation plan for the prevention of cross connections between reclaimed water distribution lines and potable water lines;
 - (3) the measures that will be implemented to prevent unauthorized access to reclaimed water facilities (e.g., secured valves);
 - (4) procedures for monitoring reclaimed water;
 - (5) a plan for how reclaimed water use will be scheduled to minimize the risk of inadvertent human exposure;
 - (6) schedules for routine maintenance;
 - (7) a plan for worker training and safety; and
 - (8) contingency plan for system failure or upsets.
- (m) One of the following requirements must be met by the user or provider, for any area where reclaimed water is stored or where there are hose bibs or faucets:

- (1) Signs having a minimum size of eight inches by eight inches must be posted at all storage areas and on all hose bibs and faucets reading, in both English and Spanish, **"Reclaimed Water, Do Not Drink"** or similar warning.
 - (2) The area must be secured to prevent access by the public.
- (n) Where a reclaimed water line parallels a sewer line, the reclaimed water line must be constructed in accordance with subsection (p) or (q) of this section. The horizontal separation distance must be three feet (outside to outside) with the reclaimed water line at the level of or above the sewer line. Reclaimed water lines that parallel sewer lines may be placed in the same benched trench. Where a reclaimed water line crosses a sewer line, the requirement of 30 TAC §290.44(e)(5)(B), *Location of Water Lines*, must be followed with the reclaimed water line substituted for the water line.
- (o) Reclaimed water lines that transport reclaimed water under pressure must be sized according to acceptable engineering practices for the needs of the reclaimed water users. The provider shall prevent high velocity scouring and maintain adequate fluid velocity to prevent the deposition of solids in the lines. Pipe specified for reclaimed water force mains must have an expected life of at least as long as that of the associated lift station and must be suitable for the reclaimed water being pumped and operating pressure to which it will be subjected. All pipe must be identified in the technical specifications with appropriate American Society for Testing and Materials, American National Standard Institute, or American Water Works Association standard numbers for both quality control (dimensions, tolerance, and installation such as bedding or backfill). All pipes and fittings must have a minimum working pressure rating of 150 pounds per square inch. Final plans and specifications must describe required pressure testing for all installed reclaimed water force mains. Minimum test pressure must be 1.5 times the maximum design pressure. Allowable leakage rates must be determined as described in 30 TAC Chapter 217, *Pressure Sewer Systems*.
- (p) Gravity flow reclaimed water lines must meet the requirements of 30 TAC Chapter 217, *The Design of Sewerage Systems*. The provider shall prevent high velocity scouring and maintain adequate fluid velocity to prevent the deposition of solids in the lines.
- (q) All exposed piping and piping within a building must be either purple pipe or painted purple. All exposed piping should be stenciled in white with a warning reading "NON-POTABLE WATER." All exposed or buried reclaimed water piping constructed at a wastewater treatment facility is exempt from the color-coding requirement of this section.
- (r) When applicable, in accordance with 30 TAC Chapter 217, *Design Criteria for Sewerage Systems*, the design of the distribution systems that will convey reclaimed water to a user must be submitted to the executive director and must receive an approval before the distribution system may be constructed. The design of the distribution systems must meet the criteria of 30 TAC Chapter 217, *Design Criteria for Sewerage Systems*. When a municipality is the plan review authority for certain sewer systems that transport primarily domestic waste, in lieu of the commission, design submittal will not be subject to submittal to the commission and instead must be approved by the municipality.

- (s) All ground level and elevated storage tanks must be designed, installed, and constructed in accordance with current AWWA standards with reference to materials to be used and construction practices to be followed, except for health-based standards strictly related to potable water storage and contact practices, where appropriately less restrictive standards may be applied.

II. Storage Requirements for Reclaimed Water

(a) Outside the Edwards Aquifer Recharge Zone and the DRASTIC Zone

- (1) Any holding pond designed to contain Type I or Type II effluent must have a lining with a permeability of no more than 1×10^{-4} cm/sec and conform to the following requirements:
 - (A) The ponds must be designed and constructed to prevent groundwater contamination;
 - (B) Soils used for pond lining must be free from foreign material such as paper, brush, trees, and large rocks; and
 - (C) All soil liners must be of compacted material, at least 24 inches thick, compacted in lifts no greater than 6 inches thick and compacted to 95% of Standard Proctor Density. In-situ clay soils meeting the soils liner requirements must be excavated and re-compacted a minimum of 6 inches below planned grade to assure a uniformly compacted finished surface.
 - (D) Soil liners must meet the following particle size gradation and Atterburg limits:
 - (i) 30% or more passing a number 200 mesh sieve; and
 - (ii) a liquid limit of 30% or greater; and a plasticity index of 15 or greater and have a permeability less than or equal to 1×10^{-4} cm/sec;
 - (E) Synthetic membrane linings must have a minimum thickness of 40 mils with a leak detection system. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1×10^{-4} cm/sec are acceptable alternatives;
 - (F) Certification by a Texas licensed professional engineer must be furnished that the pond lining meets the appropriate criteria prior to utilization of the facilities;
 - (G) Soil embankment walls must have a top width of at least five feet. The interior and exterior slopes of soil embankment walls must be no steeper than one foot vertical to three feet horizontal unless alternate methods of slope stabilization are utilized. All soil embankment walls must be protected by a

vegetative cover or other stabilizing material to prevent erosion. Erosion stops and water seals must be installed on all piping penetrating the embankments;

- (H) An alternative method of pond lining that provides equivalent or better water quality protection than provided under this section may be utilized with the prior approval of the executive director; and

- (2) Reclaimed water may be stored in leak-proof, fabricated tanks.

- (3) Subsequent holding ponds utilized for the receipt and storage of reclaimed water of a quality that could cause or causes a violation of a surface water quality standard or impairment of groundwater for its actual or intended use will be also subject to the storage requirements of this section.

(b) Within the Edwards Aquifer Recharge Zone or the DRASTIC Zone

- (1) Any holding pond designed to contain Type I or Type II effluent shall have a lining with a permeability of no more than 1×10^{-7} cm/sec and conform to the following requirements:

- (A) The ponds shall be designed and constructed to prevent groundwater contamination;

- (B) Soils used for pond lining shall be free from foreign material such as paper, brush, trees, and large rocks; and

- (C) All soil liners must be of compacted material, at least 24 inches thick, compacted in lifts no greater than 6 inches thick and compacted to 95% of Standard Proctor Density. In-situ clay soils meeting the soils liner requirements shall be excavated and re-compacted a minimum of 6 inches below planned grade to assure a uniformly compacted finished surface.

- (D) Soil liners must meet the following particle size gradation and Atterburg limits:

- (i) 30% or more passing a number 200 mesh sieve; and

- (ii) a liquid limit of 30% or greater; and a plasticity index of 15 or greater and have a permeability less than or equal to 1×10^{-7} cm/sec;

- (E) Synthetic membrane linings shall have a minimum thickness of 40 mils with a leak detection system. In situ liners at least 24 inches thick meeting a permeability less than or equal to 1×10^{-7} cm/sec are acceptable alternatives;

- (F) Certification by a Texas License Professional Engineer shall be furnished that the pond lining meets the appropriate criteria prior to utilization of the

facilities;

- (G) Soil embankment walls shall have a top width of at least five feet. The interior and exterior slopes of soil embankment walls shall be no steeper than one foot vertical to three feet horizontal unless alternate methods of slope stabilization are utilized. All soil embankment walls shall be protected by a vegetative cover or other stabilizing material to prevent erosion. Erosion stops and water seals shall be installed on all piping penetrating the embankments;
- (H) An alternative method of pond lining that provides equivalent or better water quality protection than provided under this section may be utilized with the prior approval of the executive director; and

(2) Reclaimed water may be stored in leak-proof, fabricated tanks.

(3) Subsequent holding ponds utilized for the receipt and storage of reclaimed water of a quality that could cause or causes a violation of a surface water quality standard or impairment of groundwater for its actual or intended use will be also subject to the storage requirements of this section.

III. Specific Uses and Quality Standards for Reclaimed Water

- (a) Numerical parameter limits pertaining to specific reclaimed water use categories are contained in this section. These limits apply to reclaimed water before discharge to initial holding ponds or a reclaimed water distribution system.
- (b) The reclaimed water producer shall establish that the reclaimed water meets the quality limits at the sample point for the intended use in accordance with the monitoring requirements identified in Section IV, *Sampling and Analysis*.
- (c) During the period starting from the date of issuance and lasting through the completion of the construction of the pump station, the authorization is subjected to the following requirements:

(1) Type II Reclaimed Water Use. The type of use is that where the public would not come in contact with the reclaimed water. The uses allowed by this authorization are:

- industrial process water including aggregate wash water and concrete plant cooling water;
- irrigation of sod farms, silviculture, limited access highway rights of way, and other areas where human access is restricted or unlikely to occur;
- irrigation of food crops where the reclaimed water is not likely to have direct contact with the edible part of the crop, or where the food crop undergoes pasteurization prior to distribution for consumption;
- irrigation of animal feed crops other than pasture for milking animals;
- maintenance of impoundments or natural water bodies where direct human contact is not likely;

- soil compaction or dust control where application procedures minimize aerosol drift to public areas;
- cooling tower makeup water (cooling towers that produce significant aerosols adjacent to public areas may have special requirements); and
- irrigation or other nonpotable uses of reclaimed water at a wastewater treatment facility.

- (2) The following conditions apply to Type II use of reclaimed water. At a minimum, the reclaimed water producer shall transfer only reclaimed water of the following quality as described for Type II reclaimed water use. Type II reclaimed water on a 30-day average must have a quality of no more than:

CBOD ₅	15 mg/l (30-day daily average)
Fecal Coliform	200 CFU/100 ml (geometric mean)
Fecal Coliform	800 CFU/100 ml (single grab sample)

- (3) Type I Reclaimed Water Use. The type of use is that where the public would come in contact with the reclaimed water. The uses allowed by this authorization are:

- residential irrigation, including: landscape irrigation at individual homes, public parks, schoolyards, athletic fields, or golf courses with unrestricted public access;
- urban uses;
- fire protection either in internal sprinkler systems or external fire hydrants;
- irrigation of food crops where the reclaimed water may have direct contact with the edible part of the crop;
- irrigation of pastures for milking animals;
- maintenance of impoundments or natural water bodies where recreational activities, such as wading or fishing, are anticipated even though the water body was not specifically designed for such a use;
- toilet or urinal flush water; and
- other similar activities where the potential for unintentional human exposure may occur.

- (4) The following conditions apply to Type I use of reclaimed water. At a minimum, the reclaimed water producer shall transfer only reclaimed water of the following quality as described for Type I reclaimed water use. Type I reclaimed water on a 30-day average must have a quality of no more than:

CBOD ₅	5 mg/l (30-day daily average)
Turbidity	3 NTU (30-day daily average)
Fecal Coliform	20 CFU/100 ml (geometric mean)
Fecal Coliform	75 CFU/100 ml (single grab sample)

IV. Sampling and Analysis

- (a) The reclaimed water producer shall sample the reclaimed water prior to distribution to user to assure that the water quality is in accord with the intended contracted use.

- (b) Analytical methods must be in accord with those specified in 30 TAC Chapter 319, *Monitoring and Reporting*.
- (c) The minimum sampling and analysis frequency for Type I reclaimed water is twice per week. The minimum sampling and analysis frequency for Type II reclaimed water is once per week.
- (d) The monitoring must be done after the final treatment unit.
- (e) The records of the monitoring must be done on a monthly basis and be available at the facility site for inspection by representatives of the Commission for at least five years.

V. Record Keeping and Reporting

- (a) The reclaimed water provider and user shall maintain records on site for a period of at least five years.
 - (1) Records to be maintained by the provider include:
 - (A) copies of notifications made to the commission concerning reclaimed water projects;
 - (B) as applicable, copies of contracts made with each reclaimed water user (this requirement does not include reclaimed water users at residences that have separate distribution lines for potable water);
 - (C) records of volume of water delivered to each reclaimed water user per delivery (this requirement does not apply to reclaimed water users at residences that have separate distribution lines for potable water); and
 - (D) reclaimed water quality analyses.
 - (2) The reclaimed water provider or producer shall report to the commission on a monthly basis the following information on forms furnished by the executive director. Such reports are due to the commission by the 20th day of the month following the reporting period.
 - (A) volume of reclaimed water delivered to provider; and
 - (B) quality of reclaimed water delivered to a user or provider reported as a monthly average for each quality criteria except those listed as "not to exceed" that must be reported as individual analyses.
- (b) The provider shall provide written notice to the Water Quality Application Team (MC 148) and the appropriate TCEQ regional office at least thirty (30) days prior to transfer of reclaimed water.

VI. Transfer of Reclaimed Water

- (a) Reclaimed water transferred from a provider to a user must be done on a demand only basis. A reclaimed water user may refuse delivery of such water at any time.
- (b) All reclaimed water transferred to a user must be of at least the treatment quality specified in Section IV, *Sampling and Analysis*.
- (c) Transfer must be accomplished via pipes or tank trucks.
- (d) The transfer of reclaimed water must be terminated immediately if a provider becomes aware of the misuse of the reclaimed water by the user, regardless of contract provisions.

VII. General Prohibitions

Storage facilities for retaining reclaimed water prior to use must not be located within a floodway and must be protected from a 100-year flood.

IX. Restrictions

This authorization does not convey any property right and does not grant any exclusive privilege.

X. Responsibilities and Contracts

- (a) The producer of reclaimed water will not be liable for misapplication of reclaimed water by users, except as provided in this section. Both the reclaimed water provider and user have, but are not limited to, the following responsibilities:
 - (1) The reclaimed water producer shall:
 - (A) transfer reclaimed water of at least the minimum quality required by this chapter at the point of delivery to the user for the specified use;
 - (B) sample and analyze the reclaimed water and report such analyses in accordance with Section IV, *Sampling and Analysis*, and Section V, *Record keeping and Reporting*; and
 - (C) notify the executive director in writing within five (5) days after obtaining knowledge of reclaimed water use not authorized by the executive director's reclaimed water use approval.
 - (2) The reclaimed water provider shall:

- (A) assure construction of reclaimed water distribution lines/systems in accordance with 30 TAC Chapter 217, *Design of Sewerage Systems*, and in accordance with approved plans and specifications;
 - (B) transfer reclaimed water of at least the minimum quality required by this chapter at the point of delivery to the user for the specified use;
 - (C) notify the executive director in writing within five (5) days after obtaining knowledge of reclaimed water use not authorized by the executive director's reclaimed water use approval; and
 - (D) not be found in violation of this chapter for the misuse of the reclaimed water by the user if transfer of such water is shut off promptly upon knowledge of misuse regardless of contract provisions.
- (3) The reclaimed water user shall:
- (A) use the reclaimed water in accordance with this authorization; and
 - (B) maintain and provide records as required by Section III, *Record Keeping and Reporting*.

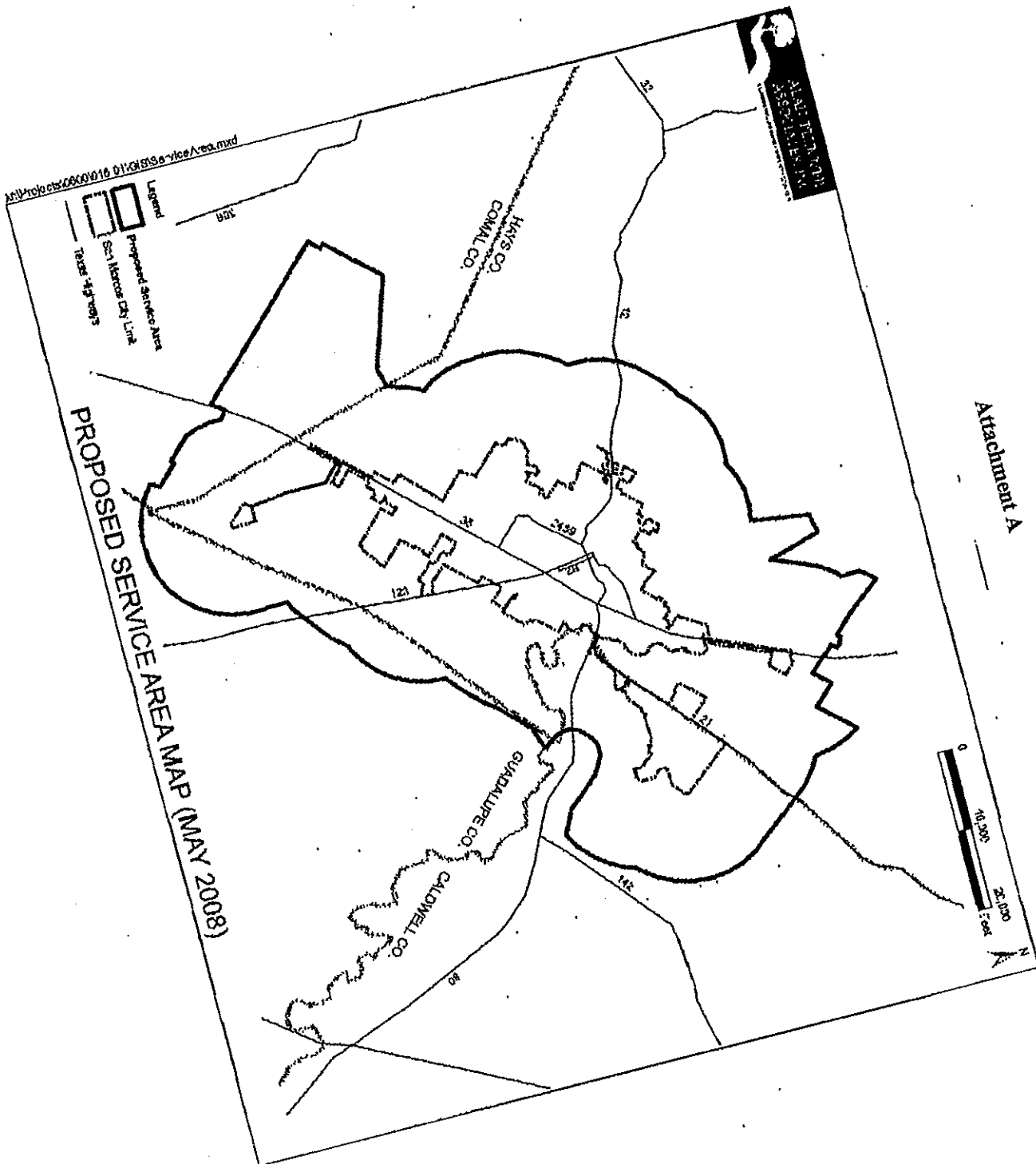
XI. Enforcement

If the producer, provider and/or user fail to comply with the terms of this authorization, the executive director may take enforcement action provided by the Texas Water Code §26.019 and §26.136.

XII. Standard Provisions

- (a) This authorization is granted in accordance with the rules and orders of the commission and the laws of the state of Texas.
- (b) Acceptance of this authorization constitutes an acknowledgment and agreement that the provider and user will comply with all the terms, provisions, conditions, limitations and restrictions embodied in this authorization and with the rules and other orders of the commission and the laws of the state of Texas. Agreement is a condition precedent to the granting of this authorization.

Attachment A



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Water Quality Applications Team