

Organized Sewage Collection System (SCS) Application
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(c), Effective June 1, 1999

REGULATED ENTITY NAME: _____

— **ATTACHMENT A – SCS Engineering Design Report.** This Engineering Design Report is provided to fulfill the requirements of 30 TAC Chapter 217, including 217.10 of Subchapter A, §§217.51 – 217.70 of Subchapter C, and Subchapter D as applicable, and is required to be submitted with this SCS Application Form.

CUSTOMER INFORMATION (if different than customer information provided on core data form)

1. The entity and contact person responsible for providing the required engineering **certification** of testing for this sewage collection system upon completion (including private service connections) and every five years thereafter to the appropriate TCEQ region office pursuant to 30 TAC §213.5(c) is:

Contact Person: _____
Entity: _____
Mailing Address: _____
City, State: _____ Zip: _____
Telephone: _____ Fax: _____

The appropriate regional office must be informed of any changes in this information within 30 days of the change.

2. The engineer responsible for the **design** of this sewage collection system is:

Contact Person: _____
Texas Licensed Professional Engineer's Number: _____
Entity: _____
Mailing Address: _____
City, State: _____ Zip: _____
Telephone: _____ Fax: _____

PROJECT DESCRIPTION

3. Anticipated type of development to be served (estimated future population to be served, plus adequate allowance for institutional and commercial flows):

— Residential: # of single-family lots: _____
— Multi-family residential units: _____
— Commercial _____
— Industrial _____
— Off-site system (not associated with any development) _____
— Other: _____

4. The character and volume of wastewater is shown below:

_____ % Domestic	_____ gallons/day
_____ % Industrial	_____ gallons/day
_____ % Commingled	_____ gallons/day
_____ Total	_____ gallons/day

5. Existing and anticipated infiltration/inflow is _____ gallons/day. This will be addressed by _____.
6. A Water Pollution Abatement Plan (WPAP) is required for construction of any associated commercial, industrial or residential project located on the Recharge Zone.
- ___ The WPAP application for this development was approved by letter dated _____. A copy of the approval letter is attached at the end of this application.
- ___ The WPAP application for this development was submitted to the TCEQ on _____, but has not been approved.
- ___ A WPAP application is required for an associated project, but it has not been submitted.
- ___ There is no associated project requiring a WPAP application.
7. Pipe description:

Pipe Diameter (Inches)	Linear Feet ¹	Pipe Material ²	Specifications ³
Total Linear Feet			
1) Include stub-outs. Do not include private service laterals. 2) If PVC, state SDR value. 3) ASTM / ANSI / AWWA specification and class numbers should be included.			

8. The following Wastewater Treatment Plant (WWTP) _____ (name) will receive project wastewater for treatment and disposal. This WWTP is an **EXISTING/PROPOSED** (circle one) facility.
9. All components of this sewage collection system will comply with:
- ___ The City of _____ standard specifications.
- ___ Other. Specifications are provided directly behind this page.
10. ___ No force main(s) and/or lift station(s) are associated with this sewage collection system.
- ___ A force main(s) and/or lift station(s) is associated with this sewage collection system and the Lift Station/Force Main System application is included with this application.

ALIGNMENT

11. ___ There are no deviations from uniform grade in this sewage collection system without manholes and with open cut construction.
12. ___ Joint Deflection - The maximum allowable joint deflection is the lesser of the following three alternatives:
- ___ equal to 5°; or
- ___ 80% of the manufacturer's recommended maximum deflection; or
- ___ 80% of the appropriate ASTM, AWWA, ANSI or nationally-established standard for joint deflection.
13. ___ There are no deviations from straight alignment in this sewage collection system without manholes.
- ___ **ATTACHMENT B - Justification and Calculations for Deviation in Straight Alignment Without Manholes.** Justification for deviations from straight alignment in this sewage collection system without manholes is provided in **ATTACHMENT B** at the

- end of this form.
 — For curved sewer lines, all curved sewer line notes (TCEQ-0596) are included on the construction plans for the wastewater collection system.

MANHOLES AND CLEANOUTS

14. Manholes or clean-outs exist at the end of each sewer line(s). These locations are listed below:

Line	Shown on Sheet	Station	Manhole or Clean-out?
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		
	Of		

15. — Manholes are installed at all Points of Curvature and Points of Termination of a sewer line.
16. — The maximum spacing between manholes on this project for each pipe diameter is no greater than:

Pipe Diameter (inches)	Max. Manhole Spacing (feet)
6 - 15	500
16 - 30	800
36 - 48	1000
≥54	2000

— **ATTACHMENT C – Justification for Variance from Maximum Manhole Spacing.**
 The maximum spacing between manholes on this project (for each pipe diameter used) is greater than listed in the table above. Justification for any variance from the maximum spacing provided as **ATTACHMENT C** at the end of the form must include a letter from the entity which will operate and maintain the system stating that it has the capability to maintain lines with manhole spacing greater than the allowed spacing.

17. — All manholes will be monolithic, cast-in-place concrete.
 — The owner/developer of this project is requesting the use of pre-cast manholes. The manufacturer's specifications and construction drawing, showing the method of sealing the joints, are attached.

SITE PLAN

Items 18 through 23 must be included on the Site Plan.

- 18. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = _____'.
- 19. The Site Plan must include the sewage collection system general layout, including manholes with station numbers, and sewer pipe stubouts (if any). Site plan must be overlain by topographic contour lines, using a contour interval of not greater than ten feet and showing the area within both the five-year floodplain and the 100-year floodplain of any drainage way.
- 20. Lateral stub-outs:
 - ___ The location of all lateral stub-outs are shown and labeled.
 - ___ No lateral stub-outs will be installed during the construction of this sewer collection system.
- 21. Location of existing and proposed water lines:
 - ___ The entire water distribution system for this project is shown and labeled.
 - ___ If not shown on the Site Plan, a Utility Plan is provided showing the entire water and sewer systems.
 - ___ There will be no water lines associated with this project.
- 22. 100-year floodplain:
 - ___ After construction is complete, no part of this project will be in or cross a 100-year floodplain, either naturally occurring or manmade. (Do not include streets or concrete-lined channels constructed above of sewer lines.)
 - ___ After construction is complete, all sections located within the 100-year floodplain will have water-tight manholes. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Line	Sheet	Station		Station
	of		to	
	of		to	
	of		to	
	of		to	

- 23. 5-year floodplain:
 - ___ After construction is complete, no part of this project will be in or cross a 5-year floodplain, either naturally occurring or man-made. (Do not include streets or concrete-lined channels constructed above sewer lines.)
 - ___ After construction is complete, all sections located within the 5-year floodplain will be encased in concrete or capped with concrete. These locations are listed in the table below and are shown and labeled on the Site Plan. (Do not include streets or concrete-lined channels constructed above sewer lines.)

Line	Sheet	Station		Station
	of		to	
	of		to	
	of		to	
	of		to	

Items 24 through 31 must be included on the Plan and Profile sheets.

24. — All existing or proposed water line crossings and any parallel water lines within 9 feet of sewer lines are listed in the table below. These lines must have the type of pressure rated pipe to be installed shown on the plan and profile sheets. Any request for a variance from the required pressure rated piping at crossings must include a variance approval from 30 TAC Chapter 290.
- There will be no water line crossings.
- There will be no water lines within 9 feet of proposed sewer lines.

Line	Station or Closest Point	Crossing or Parallel	Horizontal Separation Distance	Vertical Separation Distance

25. Vented Manholes:
- **No part** of this sewer line is within the 100-year floodplain and vented manholes are not required by 30 TAC Chapter 217.
- **A portion** of this sewer line is within the 100-year floodplain and vented manholes will be provided at less than 1500 foot intervals. These water-tight manholes are listed in the table below and labeled on the appropriate profile sheets.
- **A portion** of this sewer line is within the 100-year floodplain and an alternative means of venting shall be provided at less than 1500 feet intervals. A description of the alternative means is described on the following page.
- **A portion** of this sewer line is within the 100-year floodplain; however, there is no interval longer than 1500 feet located in the 100-year floodplain. No vented manholes will be used.

Line	Manhole	Station	Sheet
			of
			of
			of
			of
			of
			of

26. Drop manholes:

- There are no drop manholes associated with this project.
- Sewer lines which enter new or existing manholes or "manhole structures" higher than 24 inches above the manhole invert are listed in the table below and labeled on the appropriate profile sheets. These lines meet the requirements of 30 TAC §217.55(l)(2)(H).

Line	Manhole	Station	Sheet
			of
			of
			of
			of
			of
			of

27. Sewer line stub-outs (For proposed extensions):

- The placement and markings of all sewer line stub-outs are shown and labeled.
- No sewer line stub-outs are to be installed during the construction of this sewage collection system.

28. Lateral stub-outs (For proposed private service connections):

- The placement and markings of all lateral stub-outs are shown and labeled.
- No lateral stub-outs are to be installed during the construction of this sewage collection system.

29. Minimum flow velocity (From APPENDIX A)

- Assuming pipes are flowing full, all slopes are designed to produce flows equal to or greater than 2.0 feet per second for this system/line.

30. Maximum flow velocity/slopes (From APPENDIX A)

— Assuming pipes are flowing full, all slopes are designed to produce maximum flows of less than or equal to 10 feet per second for this system/line.

— **ATTACHMENT D – Calculations for Slopes for Flows Greater Than 10.0 Feet Per Second.** Assuming pipes are flowing full, some slopes produce flows which are greater than 10 feet per second. These locations are listed in the table below. Calculations are provided in **ATTACHMENT D** at the end of this form.

Line	Profile Sheet	Station		Station	FPS	% Slope	Erosion/Shock Protection
	of		to				
	of		to				
	of		to				
	of		to				

31. Assuming pipes are flowing full, where flows are ≥ 10 feet per second, the provisions noted below have been made to protect against pipe displacement by erosion and/or shock under 30 TAC §217.53(l)(2)(B).

— Concrete encasement shown on appropriate Plan and Profile sheets for the locations listed in the table above.

— Steel-reinforced, anchored concrete baffles/retards placed every 50 feet shown on appropriate Plan and Profile sheets for the locations listed in the table above.

ADMINISTRATIVE INFORMATION

32. — The **final plans and technical specifications** are submitted for TCEQ review. Each sheet of the construction plans and specifications are dated, signed, and sealed by the Texas Licensed Professional Engineer responsible for the design on each sheet.

33. Standard details are shown on the detail sheets, which are dated, signed, and sealed by the Texas Licensed Professional Engineer, as listed in the table below:

Standard Details	Shown on Sheet
Lateral stub-out marking [REQUIRED]	of
Manhole, showing inverts comply with 30 TAC §217.55(l)(2) [REQUIRED]	of
Alternate method of joining lateral to existing SCS line for potential future connections [REQUIRED]	of
Typical trench cross-sections [REQUIRED]	of
Bolted manholes [REQUIRED]	of
Sewer Service lateral standard details [REQUIRED]	of
Clean-out at end of line [REQUIRED, if used]	of

Baffles or concrete encasement for shock/erosion protection [REQUIRED, if flow velocity of any section of pipe >10 fps]	of
Detail showing Wastewater Line/Water Line Crossing [REQUIRED, if crossings are proposed]	of
Mandrel detail or specifications showing compliance with 30 TAC §217.57(b) and (c) [REQUIRED, if Flexible Pipe is used]	of
Drop manholes [REQUIRED, if a pipe entering a manhole is more than 24 inches above manhole invert]	of

- 34. ___ All organized sewage collection system general construction notes (TCEQ-0596) are included on the construction plans for this sewage collection system.
- 35. ___ All proposed sewer lines will be sufficiently surveyed/staked to allow an assessment prior to TCEQ executive director approval. If the alignments of the proposed sewer lines are not walkable on that date, the application will be deemed incomplete and returned.
- 36. ___ Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
- 37. ___ Any modification of this SCS application will require TCEQ approval, prior to construction, and may require submission of a revised application, with appropriate fees.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **ORGANIZED SEWAGE COLLECTION SYSTEM APPLICATION** is hereby submitted for TCEQ review and executive director approval. The system was designed in accordance with the requirements of 30 TAC §213.5(c) and 30 TAC §217 and prepared by:

Place engineer's seal here:

Print Name of Licensed Professional Engineer

Signature of Licensed Professional Engineer

Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

APPENDIX A
Flow Velocity Table

Flow Velocity (Flowing Full)

All gravity sewer lines on the Edwards Aquifer Recharge Zone shall be designed and constructed with hydraulic slopes sufficient to give a velocity when **flowing full** of not less than 2.0 feet per second, and not greater than 10 feet per second. The grades shown in the following table are based on Manning's formula and an n factor of 0.013 and shall be the minimum and maximum acceptable slopes unless provisions are made otherwise.

Pipe Diameter (Inches)	% Slope required for minimum flow velocity of 2.0 fps	% Slope which produces flow velocity of 10.0 fps
6	0.50	12.35
8	0.33	8.40
10	0.25	6.23
12	0.20	4.88
15	0.15	3.62
18	0.11	2.83
21	0.09	2.30
24	0.08	1.93
27	0.06	1.65
30	0.055	1.43
33	0.05	1.26
36	0.045	1.12
39	0.04	1.01
>39	*	*

*For lines larger than 39 inches in diameter, the slope may be determined by Manning's formula (as shown below) to maintain a minimum velocity greater than 2.0 feet per second when flowing full and a maximum velocity less than 10 feet per second when flowing full.

$$v = \frac{1.49}{n} \times R_h^{0.67} \times \sqrt{S}$$

Where:

v = velocity (ft/sec)

n = Manning's roughness coefficient (0.013)

R_h = hydraulic radius (ft)

S = slope (ft/ft)