

September 9, 2015  
FINAL

# **July 2015 Update to the Texas Water Quality Management Plan**





# **July 2015 Update to the Texas Water Quality Management Plan**

Prepared by the  
Office of Water  
Water Quality Division

Compiled and distributed by the  
Water Quality Assessment Section  
Water Quality Division  
Texas Commission on Environmental Quality  
P.O. Box 13087, MC-150  
Austin, Texas 78711-3087

September 2015

WQMP updates are also available on the TCEQ web site at:

< [http://www.tceq.texas.gov/permitting/wqmp/WQmanagement\\_updates.html](http://www.tceq.texas.gov/permitting/wqmp/WQmanagement_updates.html) >

Developed in accordance with Sections 205(j), 208,  
and 303 of the Federal Clean Water Act  
and applicable regulations thereto.



**Bryan W. Shaw, Ph.D., P.E.,** *Chairman*  
**Toby Baker,** *Commissioner*  
**Richard A. Hyde, P.E.,** *Executive Director*

Authorization for use or reproduction of any original material contained in this publication—that is, not obtained from other sources—is freely granted. The commission would appreciate acknowledgement.

**Table of Contents**

Introduction ..... 1  
Projected Effluent Limit Updates ..... 3  
Planning Information Summary ..... 6  
Designated Management Agencies ..... 9  
Total Maximum Daily Load Updates ..... 10

**Tables**

Table 1. Projected Effluent Limit Updates ..... 4  
Table 2. Service Area Population Updates ..... 8  
Table 3. Designated Management Agencies ..... 9

**Appendices**

Appendix I. Eighteen Total Maximum Daily Loads for Bacteria in Buffalo and Whiteoak Bayous  
and Tributaries For Segment Numbers 1013, 1013A, 1013C, 1014, 1014A, 1014B,  
1014E, 1014H, 1014K, 1014L, 1014M, 1014N, 1014O, 1017, 1017A, 1017B, 1017D,  
and 1017E..... 11  
Appendix II. Nine Total Maximum Daily Loads for Bacteria in Clear Creek and Tributaries:  
Segments 1101, 1101B, 1101D, 1102, 1102A, 1102B, 1102C, 1102D, and 1102E..... 12  
Appendix III. One Total Maximum Daily Load for Bacteria in the Guadalupe River Above  
Canyon Lake For Segment Number 1806 ..... 14  
Appendix IV. Four Total Maximum Daily Loads for Indicator Bacteria in Halls Bayou and  
Tributaries For Segment Numbers 1006D, 1006I, and 1006J ..... 15  
Appendix V. Fifteen Total Maximum Daily Loads for Indicator Bacteria in Watersheds Upstream  
of Lake Houston For Segment Numbers 1004E, 1008, 1008H, 1009, 1009C, 1009D,  
1009E, 1010, and 1011 ..... 17



# Introduction

The Texas Water Quality Management Plan (WQMP) is the product of a wastewater treatment facility planning process developed and updated in accordance with provisions of Sections 205(j), 208, and 303 of the federal Clean Water Act (CWA), as amended. The WQMP is an important part of the State's program for accomplishing its clean water goals.<sup>1</sup>

The Texas Department of Water Resources, a predecessor agency of the Texas Commission on Environmental Quality (TCEQ), prepared the initial WQMP for waste treatment management during the late 1970s. The Clean Water Act mandates that the WQMP be updated as needed to fill information gaps and revise earlier certified and approved plans. Any updates to the plan need involve only the elements of the plan that require modification. The original plan and its subsequent updates are collectively referred to as the State of Texas Water Quality Management Plan.

The WQMP is tied to the State's water quality assessments that identify priority water quality problems. The WQMPs are used to direct planning for implementation measures that control and/or prevent water quality problems. Several elements may be contained in the WQMP, such as effluent limitations of wastewater facilities, total maximum daily loads (TMDLs), nonpoint source management controls, identification of designated management agencies, and ground water and source water protection planning. Some of these elements may be contained in separate documents which are prepared independently of the current WQMP update process, but may be referenced as needed to address planning for water quality control measures.

This document, as with previous updates<sup>2</sup>, will become part of the WQMP after completion of its public participation process, certification by the TCEQ and approval by the United States Environmental Protection Agency (EPA).

The materials presented in this document revise only the information specifically addressed in the following sections. Previously certified and approved water quality management plans remain in effect.

The July 2015 WQMP update addresses the following topics:

1. Projected Effluent Limits Updates for water quality planning purposes
2. Service Area Population for Municipal Wastewater Facilities
3. Designation of Management Agencies for Municipal Wastewater Facilities
4. Total Maximum Daily Load Updates

---

<sup>1</sup> A formal definition for a water quality management plan is found in 40 Code of Federal Regulations (CFR) 130.2(k).

<sup>2</sup> Fiscal Years 1974, 1975, 1977, 1978, 1979, 1980, 1981, 1982, 1983, 1984/85, 1986/88, 1989, 1990, 1991, 1992, 1993/94, 1995, 1996, 1997/98, 02/1999, 05/1999, 07/1999, 10/1999, 01/2000, 04/2000, 07/2000, 10/2000, 01/2001, 04/2001, 07/2001, 10/2001, 01/2002, 04/2002, 07/2002, 10/2002, 01/2003, 04/2003, 07/2003, 10/2003, 01/2004, 04/2004, 07/2004, 10/2004, 01/2005, 04/2005, 07/2005, 10/2005, 01/2006, 04/2006, 07/2006, 10/2006, 01/2007, 04/2007, 07/2007, 10/2007, 01/2008, 04/2008, 07/2008, 10/2008, 01/2009, 04/2009, 07/2009, 10/2009, 01/2010, 04/2010, 07/2010, 10/2010, 01/2011, 04/2011, 07/2011, 10/2011, BPUB 2011, 01/2012, 04/2012, 07/2012, 10/2012, 01/2013, 04/2013, 07/2013, 10/2013, 01/2014, 04/2014, 07/2014, 10/2014, 01/2015, and 04/2015.

The public comment period for the July WQMP update was from August 7, 2015 through September 8, 2015.

The Projected Effluent Limit Update section provides information compiled from May 1, 2015 through July 31, 2015, and is based on water quality standards, and may be used for water quality planning purposes in Texas Pollutant Discharge Elimination System (TPDES) permit actions.

The Service Area Population and Designation of Management Agency sections for municipal wastewater facilities has been developed and evaluated by the TCEQ in cooperation with the Texas Water Development Board (TWDB) and regional water quality management planning agencies.

The Total Maximum Daily Load (TMDL) Update section provides information on proposed waste load allocations for new dischargers and revisions to existing TMDLs and has been developed by the Water Quality Planning Division, TMDL Program.



## Projected Effluent Limit Updates

Table 1 reflects proposed effluent limits for new dischargers and preliminary revisions to original proposed effluent limits for preexisting dischargers (MGD-Million Gallons per Day, CBOD<sub>5</sub> – 5 Day Carbonaceous Biochemical Oxygen Demand, NH<sub>3</sub>-N – Ammonia-Nitrogen, BOD<sub>5</sub> – 5 Day Biochemical Oxygen Demand and DO – Dissolved Oxygen).

Effluent flows indicated in Table 1 reflect future needs and do not reflect current permits for these facilities. These revisions may be useful for water quality management planning purposes. The effluent flows and constituent limits indicated in the table have been preliminarily determined to be appropriate to satisfy the stream standards for dissolved oxygen in their respective receiving waters. These flow volumes and effluent sets may be modified at the time of permit action. These limits are based on water quality standards (WQS) effective at the time of the TCEQ production of this update. WQS are subject to revision on a triennial basis.

Table 1. Projected Effluent Limit Updates

State Permit Number	Segment Number	EPA ID Number	Permittee Name County	Flow (MGD)	CBOD <sub>5</sub> (mg/L)	CBOD <sub>5</sub> (lbs/day)	NH <sub>3</sub> -N (mg/L)	NH <sub>3</sub> -N (lbs/day)	BOD <sub>5</sub> (mg/L)	BOD <sub>5</sub> (lbs/day)	DO (mg/L)	Months/ Comments
10134-008	1102	TX0117501	City of Pearland Brazoria	7	5	291.90	1.9	110.92			6	June-Aug.
				7	5	291.90	2	116.76			6	Sept.-May
10209-001	1415	TX0135968	City of Llano Llano	0.60	10	50.04	3	15.01			4	
10374-007	0304	TX0099287	City of Texarkana Bowie	2	7	116.76	2	33.36			4	Mar.-Nov.
				2	10	166.80	4	66.72			4	Dec.-Feb.
10414-001	1806	TX0116742	Kendall County WCID No. 1 Kendall	0.525	5	21.89	2	8.76			4	
10482-002	0302	TX0136409	City of New Boston Bowie	0.95	5	39.62	2	15.85			4	
11404-002	1008	TX0136468	Dowdell PUD Harris	0.90	10	75.06	3	22.52			4	
14635-001	1014	TX0128082	Harris County MUD No. 449 Harris	0.96	5	40.03	1.8	14.41			6	
15250-001	1229	TX0135373	Earth Promise Somervell	0.008					20	1.33	2	Relocation of Discharge Point
15344-001	1009	TX0136239	Goodman Manufacturing Co., L.P. Harris	0.24	10	20.02	3	6.00			4	
15345-001	1012	TX0136247	The Signorelli Co. Montgomery	0.250	10	20.85	2	4.17			4	
15349-001	1010	TX0136263	Crystal Springs Water Co., Inc. Montgomery	0.075	10	6.26	3	1.88			6	

State Permit Number	Segment Number	EPA ID Number	Permittee Name County	Flow (MGD)	CBOD <sub>5</sub> (mg/L)	CBOD <sub>5</sub> (lbs/day)	NH <sub>3</sub> -N (mg/L)	NH <sub>3</sub> -N (lbs/day)	BOD <sub>5</sub> (mg/L)	BOD <sub>5</sub> (lbs/day)	DO (mg/L)	Months/ Comments
15360-001	1902	TX0136352	Green Valley SUD Guadalupe	5.0	5	208.50	1.8	75.06			6	
15372-001	1012	TX0136379	Montgomery Ridge, Ltd. Montgomery	0.135	10	11.26	3	3.38			4	
15376-001	1204	TX0136395	OCP Tres Rios, L.L.C. Somervell	0.024					20	4.00	2	
15378-001	0507	TX0136425	Walton Texas, L.P. Hunt	0.39	10	32.53	3	9.76			4	
15381-001	1009	TX0136433	Nantucket Housing, L.L.C. Harris	0.055	10	4.59	3	1.38			6	
15385-001	1202	TX0136441	Woods Road & I-10 Investments, Inc. Waller	0.90	5	37.53	1.5	11.26			6	

## Planning Information Summary

The Water Quality Planning Division of the TCEQ coordinated with the TWDB and regional planning agencies to compile the wastewater facility information in this section. Domestic facility financing decisions under the State Revolving Loan Fund (SRF) program must be consistent with the certified and approved WQMP.

The purpose of this section is to present data reflecting facility planning needs, including previous water quality management plan needs requiring revision. Data are also presented to update other plan information for the TWDB's SRF projects. Table 2 contains the updated Service area population information. The table is organized in alphabetical order and includes the following 10 categories of information:

1. Planning Area – Area for which facility needs are proposed. The facility planning areas are subject to change during the facility planning process and any such changes will be documented in a later water quality management plan update. All planning areas listed are also designated management agencies (DMAs) unless otherwise noted in the “Comments” column.
2. Service Area – Area that receives the provided wastewater service.
3. Needs – A “T” indicates a need for either initial construction of a wastewater treatment plant, additional treatment capacity, or the upgrading of a wastewater treatment plant to meet existing or more stringent effluent requirements. A “C” indicates a need for improvements to, expansion of, rehabilitation of, or the initial construction of a wastewater collection system in the facility planning area. “T/C” indicates a need for both treatment and collection system facilities. More detailed facility planning conducted during a construction project may define additional needs and those needs will be reflected in a future update to the WQMP.
4. Needs Year – The year in which the needs were identified for the planning area.
5. Basin Name – The river basin or designated planning area where the entity is located. The seven water quality management planning areas designated by the Governor are Corpus Christi [Coastal Bend Council of Governments (CBCOG)], Killeen-Temple [Central Texas Council of Governments (CTCOG)], Texarkana [Ark-Tex Council of Governments (ATCOG)], Southeast Texas [South East Texas Regional Planning Council (SETRPC)], Lower Rio Grande Valley [Lower Rio Grande Valley Development Council (LRGVDC)], Dallas-Fort Worth [North Central Texas Council of Governments (NCTCOG)] and Houston [Houston-Galveston Area Council (H-GAC)]. Basin names are shown for agencies outside one of these areas.
6. Segment – The classified stream segment or tributary into which any recommended facility may discharge existing or projected wastewater. In the case of no-discharge facilities, this is the classified stream segment drainage area in which the facilities are located.
7. County – The county in which the facility planning area is located.
8. Date – The date the planning information was reviewed by the TCEQ.

9. Comments – Additional explanation or other information concerning the facility planning area.
10. Population – The base year and projected populations for each facility planning area. Population projections presented are consistent with the latest available statewide population projections or represent the most current information obtained from facility planning analyses.

The facility information in this section is intended to be utilized in the preparation of facility plans and the subsequent design and construction of wastewater facilities. Design capacities of the treatment and collection systems will be based upon the population projections contained in this document plus any additional needed capacity established for commercial/industrial flows and documented infiltration/inflow volumes (treatment or rehabilitation). The probable needs shown under the “Needs” heading are preliminary findings; specific needs for an area shall be as established in the completed and certified detailed engineering studies conducted during facility planning under the SRF and other state loan programs.

Specific effluent quality for any wastewater discharges resulting from any of the facilities recommended in this document will be in accordance with the rule on the Texas Surface Water Quality Standards in effect at the time of permit issuance for the specific facility.

Table 2. Service Area Population Updates

Planning Agency	Service Area	Needs	Needs Year	Basin Name / COG	Segment	County	WQMP Date	Comments	Year	Population
City of Buda	City of Buda	C	2015	Guadalupe	1810	Hays	7/22/2015	New wastewater collection system	2010	1,048
									2020	1,324
									2030	1,492
									2040	1,584
Harris County	Harris County MUD No. 50	T/C	2015	San Jacinto/ Houston- Galveston Area Council	1002	Harris	6/2/2015	Rehabilitation of collection systems	2010	3,334
									2020	3,612
									2030	3,885
									2040	4,156
Harris County	Northwest Harris County MUD No. 22	C	2015	San Jacinto/ Houston- Galveston Area Council	1016	Harris	6/2/2015	Rehabilitation of collection systems	2010	3,135
									2020	3,600
									2030	3,800
									2040	3,800
City of Hudson	City of Hudson	C	2015	Neches	0604	Angelina	6/1/2015	Construction of new WWTF	2010	4,687
									2020	5,263
									2030	6,108
									2040	7,088
City of Liberty	City of Liberty	C	2015	Trinity	0801	Liberty	6/22/2015	Rehabilitation of collection systems	2010	8,397
									2015	8,693
									2020	9,500
									2025	10,500
City of Whitewright	City of Whitewright	C	2015	Red River	0202	Grayson	6/5/2015	Construction of lift stations	2020	3,228
									2030	4,532
									2040	5,500
									2050	6,500

## Designated Management Agencies

In order to be designated as a management agency for wastewater collection or treatment, an entity must demonstrate the legal, institutional, managerial and financial capability necessary to carry out the entity's responsibilities in accordance with Section 208 (c) of the Clean Water Act (see below list of requirements). Before an entity can apply for a state revolving fund loan, it must be recommended for designation as the management agency in the approved WQMP. Designation as a management agency does not require the designated entity to provide wastewater services, but enables it to apply for grants and loans to provide the services. The facilities listed in Table 3 have submitted Designated Management Agencies (DMA) resolutions to the TCEQ. The TCEQ submits this DMA information to the EPA for approval as an update to the WQMP.

### Section 208 (c) (2) Requirements for Management Agency:

- 208(c)(2)(A): to carry out portions of an area-wide waste treatment plan.
- 208(c)(2)(B): to manage waste treatment works.
- 208(c)(2)(C): directly or by contract to design and construct new works.
- 208(c)(2)(D): to accept and utilize grants.
- 208(c)(2)(E): to raise revenues, including assessment of waste treatment charges.
- 208(c)(2)(F): to incur short and long term indebtedness.
- 208(c)(2)(G): to assure community pays proportionate cost.
- 208(c)(2)(H): to refuse to receive waste from non-compliant dischargers.
- 208(c)(2)(I): to accept for treatment industrial wastes.

Table 3. Designated Management Agencies

Planning Agency	Service Area	DMA Needs	DMA Date	DMA Area/Comments
City of Buda	City of Buda	C	10/30/2012	City Limits
City of Hudson	City of Hudson	C	4/9/2015	City Limits
City of Whitewright	City of Whitewright	C	2/3/2015	Facilities Planning Area

## Total Maximum Daily Load Updates

The Total Maximum Daily Load (TMDL) Program works to improve water quality in impaired or threatened waters bodies in Texas. The program is authorized by and created to fulfill the requirements of Section 303(d) of the federal Clean Water Act.

The goal of a TMDL is to restore the full use of a water body that has limited quality in relation to one or more of its uses. The TMDL defines an environmental target and based on that target, the State develops an implementation plan with waste load allocations for point source dischargers to mitigate anthropogenic (human-caused) sources of pollution within the watershed and restore full use of the water body.

The development of TMDLs is a process of intensive data collection and analysis. After adoption by the TCEQ, TMDLs are submitted to the EPA for review and approval.

The attached appendices may reflect proposed waste load allocations for new dischargers and revisions to TMDLs. To be consistent, updates will be provided in the same units of measure used in the original TMDL document. Also note that for bacteria TMDLs, loads may be expressed in counts for day, organisms per day, colony forming units per day, or similar expressions. These typically reflect different lab methods, but for the purposes of the TMDL program, these terms are considered synonymous.



## **Appendix I. Eighteen Total Maximum Daily Loads for Bacteria in Buffalo and Whiteoak Bayous and Tributaries For Segment Numbers 1013, 1013A, 1013C, 1014, 1014A, 1014B, 1014E, 1014H, 1014K, 1014L, 1014M, 1014N, 1014O, 1017, 1017A, 1017B, 1017D, and 1017E**

TMDL Updates to the Water Quality Management Plan (WQMP): Buffalo and Whiteoak Bayous and Tributaries (Segments 1013, 1013A, 1013C, 1014, 1014A, 1014B, 1014E, 1014H, 1014K, 1014L, 1014M, 1014N, 1014O, 1017, 1017A, 1017B, 1017D, and 1017E)

The document *Eighteen Total Maximum Daily Loads for Bacteria in Buffalo and Whiteoak Bayous and Tributaries For Segment Numbers 1013, 1013A, 1013C, 1014, 1014A, 1014B, 1014E, 1014H, 1014K, 1014L, 1014M, 1014N, 1014O, 1017, 1017A, 1017B, 1017D, and 1017E* was adopted by the TCEQ on 04/08/09 and approved by EPA on 06/11/09, and became an update to the state's Water Quality Management Plan (WQMP). Fourteen subsequent WQMP updates prior to this one have updated the list of individual waste load allocations (WLAs) found in the original TMDL document. Additionally, two addenda to the original TMDL were submitted through the April 2013 and April 2015 WQMP updates. These addenda added two new assessment units (AUs) to the original TMDL project.

The purpose of this update is to make the following changes to the TMDL, presented in Table 1:

- update the WLA for one facility that has increased its permitted discharge.

The changes reflected in this update resulted in the shifting of allocations between the sum of the individual WLAs and the allowance for future growth (AFG) in one AU. This was originally presented in Table 53 in the TMDL document, and the affected AU is included here as Table 2.

In Table 54 of the TMDL, the WLAs for permitted facilities are the sum of the individual WLAs and the allowance for future growth within each AU. Therefore, these overall numbers did not change, and Table 54 of the TMDL remains the same.

Table 1 – Change to Individual Waste Load Allocation (Updates Table 45, pp. 99-103 in the TMDL document.)

State Permit Number	Outfall	EPA Permit Number	Segment Number	Permittee Name	Flow (MGD)	Waste Load Allocation (WLA) – <i>E. coli</i> in Billion MPN/day	TMDL Comments
14635-001	001	TX0128082	1014H_02	HARRIS COUNTY MUD NO. 449	0.96	2.289	Increased discharge

Table 2 - *E. coli* TMDL Summary Calculations (Updates Table 53, pp. 118-119 in the TMDL document.)

Assessment Unit	TMDL (Billion MPN/day)	WLA <sub>WWTF</sub> (Billion MPN/day)	WLA <sub>StormWater</sub> (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)	Upstream Load (Billion MPN/day)	Future Growth (Billion MPN/day)
1014H_02	175.43	34.64	125.93	13.99	0	0	0.87

## **Appendix II. Nine Total Maximum Daily Loads for Bacteria in Clear Creek and Tributaries: Segments 1101, 1101B, 1101D, 1102, 1102A, 1102B, 1102C, 1102D, and 1102E**

---

TMDL Updates to the Water Quality Management Plan (WQMP): Clear Creek and Tributaries (Segments 1101, 1101B, 1101D, 1102, 1102A, 1102B, 1102C, 1102D, and 1102E)

The document *Nine Total Maximum Daily Loads for Bacteria in Clear Creek and Tributaries: Segments 1101, 1101B, 1101D, 1102, 1102A, 1102B, 1102C, 1102D, and 1102E* was adopted by the TCEQ on 09/10/08 and approved by EPA on 03/06/09, and became an update to the state's Water Quality Management Plan. A previous WQMP update provided changes to individual Waste Load Allocations (WLAs) and updated the TMDL equations. It has had three subsequent WQMP updates prior to this one that provided individual Waste Load Allocations (WLAs) for permitted facilities. Additionally, an addendum to the original TMDL was submitted through the October 2012 WQMP update. This addendum added four new assessment units (AUs) to the original TMDL project.

The purpose of this update is to make the following change to the TMDL, presented in Table 1:

- update the WLA for one facility that has increased its permitted discharge.

The change reflected in this update also affected the TMDL allocations for the AU and segment. These are presented in Tables 2 and 3.

Table 1 - Changes to Individual Waste Load Allocations (Updates Table 16, p. 47 in the TMDL document.)

State Permit Number / EPA Permit Number	Outfall	Segment Number	Permittee Name	Flow (MGD)	Waste Load Allocation (WLA) – Fecal Coliform MPN/day	Waste Load Allocation (WLA) – <i>E. coli</i> MPN/day	Waste Load Allocation (WLA) – Enterococci MPN/day	Comments
10134-008 / TX0117501	001	1102_01	CITY OF PEARLAND	7.0	5.30E+10	3.34E+10	NA	Increased discharge

Table 2 - *E. coli* and Fecal Coliform TMDL Calculations for Freshwater Segments (Table 18, p. 50 in original TMDL.)

Segment	Sampling Location	Stream Name	Indicator Bacteria	TMDL (counts/day)	WLA <sub>WWTF</sub> (counts/day)	WLA <sub>StormWater</sub> (counts/day)	LA (counts/day)	MOS (counts/day)	Future Growth (counts/day)
1102	14229	Clear Creek Above Tidal	<i>E. coli</i>	1.31E+11	7.58E+10	5.36E+09	2.49E+09	6.58E+09	4.10E+10

Table 3 – TMDL Allocation Table (Updates Table 21, p. 52 in the original TMDL.)

Segment	Stream Name	Assessment Unit	Indicator Bacteria	TMDL (counts/day)	WLA <sub>WWTF</sub> (counts/day)	WLA <sub>StormWater</sub> (counts/day)	LA (counts/day)	MOS (counts/day)	Future Growth (counts/day)
1102	Clear Creek Above Tidal	1102_01	<i>E. coli</i>	2.18E+10	3.34E+10	1.29E+09	6.01E+08	1.09E+09	9.28E+09 (-1.46E+10 <sup>1</sup> )

<sup>1</sup> AU 1102\_01 has insufficient Future Growth allocation for the increase in discharge. However, the segment as a whole does have sufficient allocation available, and some of this downstream capacity has been borrowed for use in 1102\_01 (which is the most upstream AU). Table 3 above leaves the 9.28E+09 counts/day for future growth that was available in this AU prior to this update in this column. (To make the numbers add up to the TMDL for this AU in Table 3, use a Future Growth value of -1.46E+10 counts/day. Again, this indicates future loading borrowed from downstream.) The new Future Growth allocation for the entire segment is presented in Table 2 above. This method of borrowing downstream capacity has been used in the WQMP updates for other TMDLs, including the January 2014 and April 2014 updates for *Watersheds Upstream of Lake Houston (1004E, 1008, 1008H, 1009, 1009C, 1009D, 1009E, 1010, and 1011)*.

## **Appendix III. One Total Maximum Daily Load for Bacteria in the Guadalupe River Above Canyon Lake For Segment Number 1806**

---

TMDL Updates to the Water Quality Management Plan (WQMP): Guadalupe River Above Canyon Lake (Segment 1806)

The document *One Total Maximum Daily Load for Bacteria in the Guadalupe River Above Canyon Lake For Segment Number 1806* was adopted by the TCEQ on 07/25/07 and approved by EPA on 09/25/07, and became an update to the state’s Water Quality Management Plan. It has had one subsequent WQMP update prior to this one that provided an individual Waste Load Allocation (WLA) for a permitted facility.

The purpose of this update is to make the following change to the TMDL, presented in Table 1:

- replace an expired permit with a new permit.

No existing point sources contributing to impaired reaches were identified in the original TMDL. One permitted facility was added in the January 2008 WMQP update, and is updated here.

Table 1 – List of Permitted Facilities

<b>State Permit Number / EPA Permit Number</b>	<b>Outfall</b>	<b>Segment Number</b>	<b>Permittee Name</b>	<b>Flow (MGD)</b>	<b>Waste Load Allocation (WLA) - <i>E. coli</i> in Billion MPN/day</b>	<b>TMDL Comments</b>
14832-001 / TX0129828	001	1806	HILL COUNTRY CAMP	NA	NA	Expired permit (replaced by new permit 14832-002 (TX0136298))
14832-002 / TX0136298	001	1806	HILL COUNTRY CAMP	0.025	0.12*	New permit (replaces expired permit 14832-001 (TX0129828))

\*In the January 2008 WQMP update, this facility was simply given “*E. coli* monitoring” rather than a limit, but the TMDL equation was adjusted by giving it a WLA of 0.12 billion MPN/day for *E. coli*, based on the water quality standard of 126 MPN/100 ml. The new permit will include this value as a permit limit, which is also consistent with the statewide bacteria rule.

As there is no change to the permitted flow (the only change is to the permit number of an existing facility), the TMDL equation is not affected.

## **Appendix IV. Four Total Maximum Daily Loads for Indicator Bacteria in Halls Bayou and Tributaries For Segment Numbers 1006D, 1006I, and 1006J**

---

TMDL Updates to the Water Quality Management Plan (WQMP): Halls Bayou and Tributaries (1006D, 1006I, and 1006J)

The document *Four Total Maximum Daily Loads for Indicator Bacteria in Halls Bayou and Tributaries For Segment Numbers 1006D, 1006I, and 1006J* was adopted by the TCEQ on 09/15/10 and approved by EPA on 09/27/10, and became an update to the state's Water Quality Management Plan (WQMP). It has had four subsequent WQMP updates prior to this one that provided individual Waste Load Allocations (WLAs) for permitted facilities.

The purpose of this update is to make the following changes to the TMDL, presented in Table 1:

- update the percentages of the areas of the subwatersheds of the assessment units (AUs) that are designated as urbanized areas (UAs) in the Decennial Census.

The proportional area of each AU's subwatershed designated as a UA in the 2000 Decennial Census was used to determine the percentage of the stormwater loading to be allocated to regulated sources (as an aggregate allocation for all permitted stormwater sources), referred to as the "WLA<sub>MS4</sub>" in the original TMDL document. Any remaining percentage was allocated to unregulated sources in the Load Allocation (LA) term. This update adjusts the stormwater allocation based on newer UA information from the 2010 Decennial Census.

The changes reflected in this update resulted in the shifting of allocations between WLA<sub>MS4</sub> and LA terms in two AUs. These were originally presented in Tables 18 and 19 in the original TMDL document, and the two affected AUs are updated here in Tables 2 and 3.

Table 1 – Percentage of MS4 Jurisdiction in the TMDL Area Watershed (Updates Table 10, p. 21 in the TMDL document.)

<b>Assessment Unit</b>	<b>Stream Name</b>	<b>TPDES Number</b>	<b>Total Area (Acres)</b>	<b>Area under MS4 Permit (Acres)</b>	<b>Percent of AU under MS4 Jurisdiction</b>	<b>TMDL Comments</b>
1006D_01	Halls Bayou (below US 59)	WQ0004685000	8,182	8,182	100%	Subwatershed designated as UA increased from 98% to 100%
1006I_01	Unnamed Tributary of Halls Bayou	WQ0004685000	452	452	100%	Subwatershed designated as UA increased from 83% to 100%

Table 2 - *E. coli* TMDL Summary Calculations for Halls Bayou AUs (Updates Table 18, p. 41 in the TMDL document.)

Assessment Unit	Sampling Location	Stream Name	TMDL (Billion MPN/day)	WLA <sub>WWTF</sub> (Billion MPN/day)	WLA <sub>MS4</sub> (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)	Future Growth (Billion MPN/day)
1006D_01	20023	Halls Bayou (below US 59)	463	44.6	385.4	0	23.2	9.8
1006I_01	16666	Unnamed Tributary of Halls Bayou	2.72	0	2.585	0	0.136	0

Table 3 - Final *E. coli* TMDL Allocations (Updates Table 19, p. 42 in the TMDL document)

Assessment Unit	TMDL (Billion MPN/day)	WLA <sub>WWTF</sub> (Billion MPN/day)	WLA <sub>MS4</sub> (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)
1006D_01	463	54.4	385.4	0.0	23.2
1006I_01	2.72	0	2.585	0.0	0.136

## **Appendix V. Fifteen Total Maximum Daily Loads for Indicator Bacteria in Watersheds Upstream of Lake Houston For Segment Numbers 1004E, 1008, 1008H, 1009, 1009C, 1009D, 1009E, 1010, and 1011**

TMDL Updates to the Water Quality Management Plan (WQMP): Watersheds Upstream of Lake Houston (1004E, 1008, 1008H, 1009, 1009C, 1009D, 1009E, 1010, and 1011)

The document *Fifteen Total Maximum Daily Loads for Indicator Bacteria in Watersheds Upstream of Lake Houston For Segment Numbers 1004E, 1008, 1008H, 1009, 1009C, 1009D, 1009E, 1010, and 1011* was adopted by the TCEQ on 04/06/11 and approved by EPA on 06/29/11, and became an update to the state's Water Quality Management Plan (WQMP). Fourteen subsequent WQMP updates prior to this one have updated the list of individual waste load allocations (WLAs) found in the original TMDL document. Additionally, an addendum to the original TMDL was submitted through the October 2013 WQMP update. This addendum added six new assessment units (AUs) to the original TMDL project

The purpose of this update is to make the following changes to the TMDL, presented in Table 1:

- update the WLA for one facility that has decreased its permitted discharge, and
- add three new permits.

The changes reflected in this update resulted in the shifting of allocations between the sum of the individual WLAs and the allowance for future growth (AFG) in eight AUs. This was originally presented in Table 18 in the original TMDL document, and the eight affected AUs are included here as Table 2.

In Table 19 of the original TMDL, the WLAs for permitted facilities are the sum of the individual WLAs and the allowance for future growth within each AU. Therefore, these overall numbers did not change, and Table 19 of the TMDL remains the same.

Table 1 - Changes to Individual Waste Load Allocations (Updates Table 16, pp. 49-56 in the TMDL document.)

State Permit Number	Outfall	EPA Permit Number	Segment Number	Permittee Name	Flow (MGD)	Waste Load Allocation (WLA) – <i>E. coli</i> in Billion MPN/day	TMDL Comments
11404-002	001	TX0136468	1008H_01	DOWDELL PUBLIC UTILITY DISTRICT	0.9	2.15	New permit
15381-001	001	TX0136433	1009_02	NANTUCKET HOUSING, LLC	0.055	0.13	New permit
15344-001	001	TX0136239	1009E_01	GOODMAN MANUFACTURING COMPANY, L.P.	0.24	0.57	Reduced discharge
15349-001	001	TX0136263	1010_04	CRYSTAL SPRINGS WATER COMPANY, INC.	0.075	0.18	New permit

Table 2 - *E. coli* TMDL Summary Calculations for Lake Houston Assessment Units (Updates Table 18, pp. 61 in the TMDL document.)

Assessment Unit	Sampling Location	Stream Name	TMDL (Billion MPN/day)	WLA <sub>WWTF</sub> (Billion MPN/day)	WLA <sub>StormWater</sub> (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)	Future Growth (Billion MPN/day)
1008_03	11313	Spring Creek	1420	96.85	141	1050	70.9	61.3
1008_04	11312	Spring Creek	1510	132.52	146	1090	75.7	65.8
1008H_01	11185	Willow Creek	166	18.40	14.9	104	8.28	20.4
1009_02	11331	Cypress Creek	615	82.40	141	325	30.8	35.8
1009_03	11328	Cypress Creek	1340	167.85	299	690	67.0	116.1
1009_04	11324	Cypress Creek	1550	206.45	338	779	77.4	149.2
1009E_01	14159	Little Cypress Creek	91.1	12.28	5.16	59.4	4.56	9.7
1010_04	11334	Caney Creek	493	17.71	28.2	413	24.7	9.4