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FINAL

# **July 2019 Update to the Texas Water Quality Management Plan**





# **July 2019 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  
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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.



**Jon Niermann, *Chairman***  
**Emily Lindley, *Commissioner***  
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# 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 2019 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 Update

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<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, 04/2015, 07/2015, 10/2015, 01/2016, 04/2016, 07/2016, 10/2016, 01/2017, 04/2017, 07/2017, 10/2017, 01/2018, 04/2018, 07/2018, 10/2018, 01/2019, 04/2019, and Terra Verde 2019.

The public comment period for the July WQMP update was from August 9, 2019 through September 9, 2019.

The Projected Effluent Limit Update section provides information compiled from May 1, 2019 through July 31, 2019, 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 wasteload 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
10048-001	1902	TX0022675	City of Marion Guadalupe	0.40	10	33.36	3	10.01			4	
10380-002	0832	TX0047724	City of Weatherford Parker	4.5	5	187.65	1.6	60.05			6	Outfall 003
10543-011	1428	TX0046981	City of Austin Travis	100.00	10	8340.00	2	1668.00			6	
10543-013	1428	TX0124800	City of Austin Travis	2.25	5	93.83	2	37.53			5	
10766-004	1011	TX0138380	City of Cleveland Montgomery	0.10	10	8.34	3	2.50			4	MOA
11324-001	1244	TX0025577	City of Hutto Williamson	3.25	5	135.53	1.7	46.08			6	
11324-002	1244	TX0132926	City of Hutto Williamson	15.50	10	1292.70	2	258.54			6	
12458-002	1202	TX0089028	Texas Dept. of Criminal Justice Grimes	0.38	10	31.69	3	9.51			4	
12971-001	1428	TX0097870	City of Austin Travis	0.99	5	41.28	2	16.51			4	
14129-002	1434	TX0137448	City of Manor Travis	0.50	5	20.85	2	8.34			5	
14431-001	1810	TX0128201	North Hays County MUD No. 1 Hays	0.611	5	25.48	2	10.19			5	
14779-001	1402	TX0129429	Pine Cove, Inc. Colorado	0.04					10	3.34	4	MOA

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
14805-002	1204	TX0139401	City of Cresson Hood	0.35	10	29.19	3	8.76			4	
14821-002	0836	TX0139009	White Rock Homeowners Association, Inc. Navarro	0.08					10	6.67	4	
15000-002	1248	TX0139181	Williamson County MUD No. 16 Williamson	0.60					10	50.04	4	
15012-001	1003	TX0133167	Utilities Investment Co., Inc. Liberty	0.490	10	40.87	3	12.26			4	
15101-001	1014	TX0134686	Quadvest, L.P. Waller	0.900	10	75.06	2	15.01			6	
15266-002	1808	TX0139131	Crystal Clear Special Utility District and MCLB Land, L.L.C. Hays	0.100	5	4.17	2	1.67			3	
15292-001	1014	TX0135704	Harris County MUD No. 536 Harris	0.72	5	30.02	1.8	10.81			6	
15478-001	1810	TX0137111	Windy Hill Utility Co., L.L.C. Hays	0.680	5	28.36	2	11.34			5	
15635-002	1810	TX0139122	Plum Creek Utility Co., L.L.C. Caldwell	0.15	10	12.51	3	3.75			5	

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
15688-001	1806	TX0138550	Silesia Properties, L.P. Comal	0.50	5	20.85	2	8.34			4	
15713-001	2114	TX0138673	RR 417, L.L.C. Bandera	0.049	10	4.09	3	1.23			4	MOA
15747-001	2432	TX0138894	KB Home Lone Star, Inc. Fort Bend	0.25					10	20.85	4	
15754-001	1202	TX0138967	Oakville Ranch RV Resort, L.L.C. Fort Bend	0.025	10	2.09	3	0.63			4	MOA
15778-001	2456	TX0139165	JW Development Partners, L.L.C. Calhoun	0.032					20	5.34	2	
15779-001	1009	TX0139173	93 Schiel Road, Ltd. Harris	0.30	10	25.02	3	7.51			4	
15781-001	1434	TX0139203	Great Escapes Opportunity Zone Fund, L.L.C. Travis	0.048	5	2.00	2	0.80			4	
15783-001	1009	TX0139220	Harris County MUD No. 43 Harris	0.21	10	17.51	3	5.25			4	
15790-001	2427	TX0139262	Houston Polymers Terminal, L.P. Harris	0.008	10	0.67	3.00	0.20			4	
15791-001	0826	TX0139271	Northlake Corners, L.L.C. Denton	0.03					10	2.50	4	

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
15794-001	1015	TX0139301	Rivers Edge Investments, Ltd. Montgomery	0.30	10	25.02	3	7.51			4	
15795-001	1009	TX0139297	Cypress Grand Parkway (Houston) ASLI IX, L.L.C. Harris	0.60	7	35.03	2	10.01			6	
15800-001	1008	TX0139327	Quadvest, L.P. Montgomery	0.75	10	62.55	2	12.51			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. A “F” indicates a need for flood mitigation.
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 Colordao City	City limits	T	2019	Colorado River Basin	1412	Mitchell	8/1/2019	WWTF improvements	2020	5149
									2025	5465
									2030	5781
									2040	5898
City of Dekalb	City limits	T	2018	Sulfur River Basin / ATCOG	0302	Bowie	8/1/2019	WWTF upgrades	2016	1667
									2020	1711
									2030	1748
									2040	1769
City of Marlin	City limits	C	2019	Brazos River Basin	1242	Falls	8/1/2019	Stormwater collection improvements. DMA is not required.	2017	5671
									2020	6483
									2025	6648
									2030	6812
Roman Forest Consolidated MUD	District boundaries	T	2019	San Jacinto River Basin / HGAC	1011	Montgomery	8/1/2019	New WWTF	2019	2385
									2020	2455
									2025	2805
									2030	3155

## 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
City of Colorado City	City limits	T	5/29/2019
City of Dekalb	City limits	T	3/25/2019
Roman Forest Consolidated MUD	District boundary	T	6/23/2019

## 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 wasteload 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 wasteload 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 per 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**

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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 WQMP. Twenty-three subsequent WQMP updates prior to this one have updated the list of individual wasteload 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 WLAs for two facilities that have increased their permitted discharges and update the permittee names for both facilities, and
- remove two canceled permits and three expired permits.

The change 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 four AUs. This was originally presented in Table 53 in the TMDL document, and the affected AUs are 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 Wasteload 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
15101-001	001	TX0134686	1014B_01	QUADVEST, L.P.	0.9	2.146	Increased discharge and updated name
12858-001	001	TX0094579	1014B_01	HARRIS COUNTY	NA	NA	Permit canceled
15100-001	001	TX0134660	1014B_01	CLAY DEVELOPMENT & CONSTRUCTION, INC.	NA	NA	Permit canceled
13778-001	001	TX0097985	1014E_02	STEPHEN JOEL FRIEDMAN	NA	NA	Permit expired
15292-001	001	TX0135704	1014H_02	HARRIS COUNTY MUD 536	0.72	1.717	Increased discharge and updated name
12397-001	001	TX0087416	1017_01	SPX FLOW US LLC	NA	NA	Permit expired
14827-001	001	TX0081256	1017_01	FESTIVAL PROPERTIES INC	NA	NA	Permit expired

Table 2 - *E. coli* TMDL Summary Calculations (Updates Table 53, pp. 116-117 in the TMDL document.)

AU	TMDL (Billion MPN/day)	WLA <sub>WWTF</sub> (Billion MPN/day)	WLA <sub>Storm Water</sub> (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)	Upstream Load (Billion MPN/day)	Future Growth (Billion MPN/day)
1014B_01	626.91	99.48	482.44	38.6	0	0	6.39
1014E_01	236.83	71.25	145	7.78	0	0	12.80
1014H_02	175.43	39.72	121.9	13.55	0	0	0.26
1017_01	173.57	73.05	58.94	6.55	0	0	35.03

## Appendix II. One Total Maximum Daily Load for Bacteria in in Gilleland Creek: Segment 1428C

TMDL Updates to the Water Quality Management Plan (WQMP): Gilleland Creek (Segment 1428C)

The document *One Total Maximum Daily Load for Bacteria in Gilleland Creek: Segment 1428C* was adopted by the TCEQ on 8/08/07 and approved by EPA on 04/21/09, and became an update to the state's WQMP. Five subsequent WQMP updates prior to this one have provided and updated the list of individual wasteload allocations (WLAs) for the original TMDL project.

The purpose of this update is to make the following changes (Table 1) to the TMDL:

- update the WLAs for two facilities that have increased their permitted discharges and update the permittee names for both facilities.

Table 1 - Permitted Bacteria Allocations (Table 6, p. 16 in original TMDL document)

State Permit Number	Outfall	EPA Permit Number	Segment Number	Permittee Name	Flow (MGD)	Waste Load Allocation (WLA) – <i>E. coli</i> cfu/day	TMDL/ Comments
12971-001	001	TX0097870	1428C	CITY OF AUSTIN	0.99	$4.50 \times 10^{09}$	Increase discharge and updated name
10543-013	001	TX0124800	1428C	CITY OF AUSTIN	2.25	$1.02 \times 10^{10}$	Increase discharge and updated name

In addition, the changes reflected in this update resulted in a change to the overall WLA for wastewater treatment facilities for the TMDL as is reflected on page 16 of the TMDL. The new WLA is  $8.28 \times 10^{10}$  cfu *E. coli* per day.

The change reflected in this update resulted in the shifting of allocations between the sum of the individual WLAs and the Load Allocation (LA) terms in the TMDL equations on page 17 of the TMDL (and later updated through a WQMP update in April 2009 to provide separate terms for the total WLA for wastewater treatment facilities and regulated stormwater). These equations are included here as Table 2. The overall TMDL values remain the same.

Table 2 - *E. coli* TMDL Summary Calculations (in cfu/day) for Gilleland Creek (updates page 17 in the TMDL document)

Flow Range	TMDL	WLA <sub>wwTF</sub>	WLA <sub>sw</sub>	LA
High Flow (0-10% Regime)	$2.61 \times 10^{13}$	$8.28 \times 10^{10}$	$1.52 \times 10^{13}$	$1.08 \times 10^{13}$
Moderate Flow (11-50% Regime)	$1.37 \times 10^{13}$	$8.28 \times 10^{10}$	$7.94 \times 10^{12}$	$5.68 \times 10^{12}$

## **Appendix III. 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**

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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 WQMP. Twenty-eight subsequent WQMP updates prior to this one have updated the list of individual wasteload 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:

- add five new permits, and
- remove a canceled permit.

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 in seven AUs. This was originally presented in Table 18 in the original TMDL document, and the seven 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 Wasteload 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
15800-001	001	TX0139327	1008_03	QUADVEST LP	0.75	1.789	New permit
13697-001	001	TX0090000	1008C_01	1960 HUMBLE WESTFIELD LIMITED	NA	NA	Permit canceled
15783-001	001	TX0139220	1009_04	HARRIS COUNTY MUD NO. 43	0.21	0.501	New permit
15779-001	001	TX0139173	1009E_01	93 SCHIEL ROAD, LTD.	0.3	0.715	New permit
15795-001	001	TX0139297	1009E_01	CYPRESS GRAND PARKWAY	0.6	1.431	New permit
10766-004	001	TX0138380	1011_01	CITY OF CLEVELAND	0.1	0.238	New permit

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

AU	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	102.06	322	869	70.9	56.04
1008_04	11312	Spring Creek	1510	137.73	334	902	75.7	60.57
1009_02	11314	Cypress Creek	615	102.93	196	270	30.8	15.27
1009_03	11313	Cypress Creek	1340	188.38	415	574	67.0	95.62
1009_04	11312	Cypress Creek	1550	227.70	469	648	77.4	127.90
1009E_01	14159	Little Cypress Creek	91.1	18.53	16.14	48.42	4.56	3.45
1011_02	17746	Peach Creek	422	16.87	34.5	348.5	21.1	1.03

In addition, Table 3 below provides an update to Table 11 found in the October 2013 addendum to this TMDL project (*Addendum One to Fifteen Total Maximum Daily Loads for Indicator Bacteria in Watersheds Upstream of Lake Houston: Six Additional Total Maximum Daily Loads for Indicator Bacteria in Watersheds Upstream of Lake Houston For Segments 1008B, 1008C, 1008E, and 1011 Assessment Units 1008B\_01, 1008B\_02, 1008C\_01, 1008C\_02, 1008E\_01, and 1011\_01*). One of the new permits discussed earlier in this update also affects an AU in this addendum. The canceled permit affects another AU in this addendum.

Table 4 below provides updates to Table 12 found in the October 2013 addendum to this TMDL project. The addendum added six AUs that were not included in the original TMDL. Five of these (1008B\_01, 1008B\_02, 1008C\_01, 1008C\_02, and 1008E\_01) were lumped together as contributing loading to 1008\_03 and 1008\_04 in the original TMDL. The sixth additional AU (1011\_01) was treated as an upstream contributing load to 1011\_02 in the original TMDL. The permit for one new facility (10766-004/ TX0138380) affects the loadings of both 1011\_01 as well as the original TMDL AU 1011\_02. The canceled permit for one facility (13697-001/ TX0090000) affects the loadings of both 1008C\_01 as well as the original TMDL AUs 1008\_03 and 1008\_04.

In Table 13 of the TMDL addendum, the WLAs for permitted facilities are the sum of the individual WLAs and the allowance for future growth within each assessment unit. Therefore, these overall numbers did not change, and Table 13 of the TMDL addendum remains the same.

Table 3 – Changes to Individual Waste Load Allocations and Permittee Names (Updates Table 11, p. 23 in the TMDL Addendum 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
13697-001	001	TX0090000	1008C_01	1960 HUMBLE WESTFIELD LIMITED	NA	NA	Permit canceled
10766-004	001	TX0138380	1011_01	CITY OF CLEVELAND	0.1	0.238	New permit

Table 4 – *E. coli* TMDL Summary for Impaired AUs of the Addendum (Updates Table 12, p. 26 in the TMDL Addendum document.) Loads are in billion MPN/day.

AU	Stream Name	TMDL	MOS	WLA <sub>WWTF</sub>	WLA <sub>SW</sub>	LA <sub>AU</sub>	LA <sub>RES</sub>	LA <sub>TOTAL</sub>	Future Growth
1008C_01	Lower Panther Branch	282.5	2.91	18.60	30.62	2.1	224.2	226.3	4.07
1011_01	Peach Creek	214.1	10.7	13.45	2.87	186.77	0	186.77	0.31

## **Appendix IV. Seven Total Maximum Daily Loads for Indicator Bacteria in Lake Houston, East Fork San Jacinto River, West Fork San Jacinto River, and Crystal Creek Watersheds For Segments 1002, 1003, 1004, and 1004D**

TMDL Updates to the WQMP: Lake Houston, East Fork San Jacinto River, West Fork San Jacinto River, and Crystal Creek Watersheds (1002, 1003, 1004, and 1004D)

The document *Seven Total Maximum Daily Loads for Indicator Bacteria in Lake Houston, East Fork San Jacinto River, West Fork San Jacinto River, and Crystal Creek Watersheds For Segments 1002, 1003, 1004, and 1004D* was adopted by the TCEQ on 08/24/16 and approved by EPA on 10/07/16, and became an update to the state's Water Quality Management Plan (WQMP). Three subsequent WQMP updates prior to this one have updated the list of individual wasteload allocations (WLAs) found in the original TMDL document. Additionally, an addendum to the original TMDL was submitted through the October 2018 WQMP update. This addendum added one new assessment unit (AU) to the original TMDL project.

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

- add a new permit,
- remove an expired permit, and
- update the WLA for one facility that has increased its permitted discharge and update the permittee name.

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 in four AUs. This was originally presented in Table 17 in the original TMDL document, and the four affected AUs are included here as Table 2.

In Table 18 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 18 of the TMDL remains the same.

Table 1 – Changes to Individual Waste Load Allocations (Updates Table 13, pp. 54-55 in the TMDL document.)

<b>State Permit Number</b>	<b>Outfall</b>	<b>EPA Permit Number</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>
15012-001	001	TX0133167	1003_01	UTILITIES INVESTMENT COMPANY, INC.	0.49	1.1686	Increased discharge and updated name
15794-001	001	TX0139301	1015_01*	RIVERS EDGE INVESTMENTS, LTD.	0.3	0.7154	New permit
11437-001	001	TX0092649	1015B_01*	GRIMES COUNTY MUD 1	NA	NA	Permit expired

\* This facility discharges via unimpaired segment 1015. This is a tributary to impaired AU 1004\_02, which includes its individual wasteload allocation.

Table 2 – *E. coli* TMDL Summary Calculations for Lake Houston Assessment Units (Updates Table 17, p. 59 in the TMDL document.) Loads are in billion MPN/day.

<b>AU</b>	<b>Segment Name</b>	<b>TMDL</b>	<b>MOS</b>	<b>WLA<sub>WWTF</sub></b>	<b>WLA<sub>SW</sub></b>	<b>LA<sub>AU</sub></b>	<b>LA<sub>TRIB</sub></b>	<b>LA<sub>RES</sub></b>	<b>LA<sub>TOTAL</sub></b>	<b>Future Growth</b>
1002_06	Lake Houston	6,197	106.57	96.04	288.17	1,535.70	3,106.9	958.7	5,601.30	104.92
1003_01	East Fork San Jacinto River	866.4	43.32	9.24	1.75	809.81	0	0	809.81	2.28
1004_01	West Fork San Jacinto River	2,779	88.77	92.82	196.81	1,294.21	44.86	958.7	2,297.77	102.83
1004_02	West Fork San Jacinto River	1,141	9.12	44.42	4.04	75.26	0	958.7	1,033.96	49.46