



June 8, 2010
FINAL

April 2010 Update to the Texas Water Quality Management Plan

Prepared by the:
Office of Permitting & Registration, Water Quality Division

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

April 2010 Update to the Texas Water Quality Management Plan

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

June 2010

WQMP updates are also available on the TCEQ web site at:
<www.tceq.state.tx.us/nav/eq/eq_wqmp.html>

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



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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.¹

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 updates², will become part of the WQMP after completion of its public participation process, certification by the TCEQ on behalf of the Governor of Texas, and approval by the 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 April 2010 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. Total Maximum Daily Load Updates

The Projected Effluent Limit Update section provides information compiled from February 1, 2010 through April 30, 2010, 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.

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

² Fiscal Years 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, and 01/2010.

The Service Area Population section 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, CBOD₅ – 5 Day Carbonaceous Biochemical Oxygen Demand, NH₃-N – Ammonia-Nitrogen, BOD₅ – 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 effective at the time of the TCEQ production of this update. Water Quality Standards 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 ₅ (mg/L)	CBOD ₅ (lbs/day)	NH ₃ -N (mg/L)	NH ₃ -N (lbs/day)	BOD ₅ (mg/L)	BOD ₅ (lbs/day)	DO (mg/L)	Months/ Comments
10296-001	0100	0132608	City of Sunray Moore	0.40					30	100.08	4	
10397-005	2494	0071340	Brownsville Public Utilities Board Cameron	10.00	20	1668.00	4	333.60			2	Ammonia Limit
10418-001	2107	0082589	City of Jourdanton Atascosa	0.98	10	81.73	3	24.52			4	
10490-003	2202	0047929	City of Harlingen - WWTP No. 2 Cameron	10.00	10	834.00	3	250.20			4	
10633-003	2202	0047449	City of McAllen Hidalgo	10.00	10	834.00	2	166.80			6	
12003-002	1245	0132225	Fort Bend County MUD No. 25 Fort Bend	0.50	5	20.85	2	8.34			4	
12159-001	1012	0035157	Gulf Coast Trades Center Walker	0.025					10	2.09	4	
14173-001	1207	0121797	Hill Country Harbor, L.P. Palo Pinto	0.20	10	16.68	3	5.00			4	
14246-001	0823	0023272	City of Celina Collin	0.95	10	79.23	2	15.85			5	
14961-001	1007	0132438	Nancy Chau-Laterna Villa MHP Harris	0.03	10	2.50	3	0.75			4	

State Permit Number	Segment Number	EPA ID Number	Permittee Name County	Flow (MGD)	CBOD ₅ (mg/L)	CBOD ₅ (lbs/day)	NH ₃ -N (mg/L)	NH ₃ -N (lbs/day)	BOD ₅ (mg/L)	BOD ₅ (lbs/day)	DO (mg/L)	Months/ Comments
14964-001	1008	0132471	Harris County Improvement District No. 18 Harris	1.185	10	98.83	3	29.65			6	
14966-001	1006	0132519	Sampogna Properties, L.P. Harris	0.02	10	1.67	3	0.50			6	
14970-001	0828	0132586	PHW, EMW, AWB & EB Texas, L.L.C. Tarrant	0.02					20	3.34	4	
14972-001	1005	0124087	Texas Parks & Wildlife Department - San Jacinto Battleground Harris	0.04	10	3.34	3	1.00			4	

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
Azle, City of	Azle, City of and Pelican Bay, City of	T/C	2010	Trinity River Basin / NCTCOG	0809	Tarrant	3/25/2010	Expansion of the wastewater treatment plant.	2005	12,002
									2010	12,953
									2020	16,445
									2030	20,810
Buffalo Gap, City of	Buffalo Gap, City of	T/C	2010	Brazos River Basin	1232	Taylor	4/5/2010	Collection system and irrigation treatment plan.	2010	499
									2020	511
									2030	522
									2040	528
Burnet, City of	Burnet, City of	T/C	2010	Colorado River Basin	1404	Burnet	3/23/2010	Expansion of the wastewater treatment plant.	2005	6,591
									2010	8,843
									2020	12,923
									2030	17,004
Liberty, City of	Liberty, City of	T/C	2007	Trinity River Basin	0801	Liberty	2/16/2010	Rehabilitation of the wastewater treatment facility.	2005	10,064
									2010	10,290
									2020	10,755
									2030	10,978
Trinity River Authority, Central Regional	Dallas Metroplex	T/C	2010	Trinity River Basin/NCTCOG	0841	Dallas/Tarrant	3/11/2010	Wastewater treatment plant and collection system improvements.	2000	2,954,322
									2010	3,435,269
									2020	3,938,015
									2030	4,327,783
Trinity River Authority, Denton Creek	Fort Worth, Haslet, Roanoke, Southlake, Keller, Flower Mound, & Denton County	T/C	2010	Trinity River Basin/NCTCOG	0826	Denton	3/11/2010	Expansion of the wastewater treatment plant.	2000	104,475
									2010	156,529
									2020	223,392
									2030	276,939
Trinity River Authority, Ten Mile Creek	Cedar Hill, DeSoto, Duncanville, Ferris, Lancaster	T/C	2010	Trinity River Basin/NCTCOG	0805	Dallas	3/10/2010	Rehabilitation of the collection system.	2005	156,607
									2010	183,179
									2020	236,611
									2030	276,939
Trinity River Authority, Mountain Creek	Grand Prairie, Midlothian, & Venus	T/C	2010	Trinity River Basin/NCTCOG	0838	Ellis	3/11/2010	Expansion of the wastewater treatment plant.	2000	9,418
									2010	15,942
									2020	25,697
									2030	39,261
Trinity River Authority, Red Oak Creek Regional	Cedar Hill, DeSoto, Glenn Heights, Lancaster, Ovilla, & Red Oak	T/C	2010	Trinity River Basin/NCTCOG	0805	Ellis	3/8/2010	Rehabilitation of the collection system.	2010	165,080
									2020	223,399
									2030	268,569
									2040	310,809

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 U.S. Environmental Protection Agency for review and approval.

The attached appendixes 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. And 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 Update to the WQMP: Whiteoak and Buffalo 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 4/08/2009 and approved by EPA on 6/11/09, and became an update to the state's Water Quality Management Plan. The TCEQ is working with the Bacteria Implementation Group (BIG) of the H-GAC to develop a plan to reduce bacteria concentrations in many watersheds in the Houston area, including the projects for Lake Houston, Clear Creek, the Houston Metropolitan Area, and this project.

The TMDL document included individual Waste Load Allocations (WLAs) for bacteria for entities within the Whiteoak and Buffalo Bayou watershed. The purpose of this update is to make the following changes and corrections to the TMDL:

- Assign WLAs to new permitted entities that have come online since the inception of the TMDL. The load assigned to the new entities will be taken out of the Allowance for Future Growth (AFG) category of the TMDL equation.
- Remove expired permits from the TMDL permit list and adjust the calculations accordingly.
- Correct TMDL calculations in instances where it was discovered that permits had been inappropriately assigned to an incorrect Assessment Unit (AU).
- Include WLAs from unimpaired AUs within the watershed to the nearest downstream AU. The load will be taken from the downstream AU's AFG category of the TMDL equation.

Table 1 updates the TMDL equations for bacteria (Table 54 in the TMDL document).

Table 1 – Updated TMDL Equations

Assessment Unit	TMDL (Billion MPN/day)	WLA_{WWTF} (Billion MPN/day)	WLA_{Storm Water} (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)
1013_01	1,574.77	1.19	267.95	1305.63	0
1013A_01	1,379.94	1.2	234.66	1144.08	0
1013C_01	102.08	1.99	16.37	83.72	0
1014_01	1841.94	134.2	837.68	870.06	0
1014A_01	195.04	38.15	141.2	15.69	0
1014B_01	626.91	105.87	482.44	38.6	0
1014E_01	236.83	84.05	145	7.78	0
1014H_01	39.18	2.38	33.12	3.68	0
1014H_02	175.43	35.51	125.93	13.99	0

Assessment Unit	TMDL (Billion MPN/day)	WLA _{WWTF} (Billion MPN/day)	WLA _{Storm Water} (Billion MPN/day)	LA (Billion MPN/day)	MOS (Billion MPN/day)
1014K_01	35.06	4.1	27.86	3.1	0
1014K_02	15.09	1.11	12.58	1.4	0
1014L_01	69.66	43.98	23.11	2.57	0
1014M_01	76.75	2.38	34.79	39.58	0
1014N_01	204.66	3.26	95.56	105.84	0
1014O_01	434.9	0.05	209.26	225.59	0
1017_01	173.57	108.08	58.94	6.55	0
1017_02	52.06	0.09	46.77	5.2	0
1017_03	149.47	2.38	132.38	14.71	0
1017_04	537.09	0.77	482.69	53.63	0
1017A_01	175.57	3.6	154.77	17.2	0
1017B_02	137.95	79.42	52.68	5.85	0
1017D_01	12.54	2.38	9.14	1.02	0
1017E_01	12.54	2.38	9.14	1.02	0

Table 2 updates the individual WLAs for bacteria (Table 45 of the TMDL document).

Table 2 – Updated Permit List

TPDES	NPDES	Facility Name	Segment	Assessment Unit	Flow (MGD)	Allocation (Billion MPN/day)
02104-000	TX0075370	NATIONAL OILWELL VARCO LP	1014	1014_01	0.036	0.086
04760-000	TX0089940	WEATHERFORD US LP	1014	1014_01	0.0108	0.026
10495-030	TX0063002	HOUSTON, CITY OF	1014	1014_01	26.4	62.952
10495-109	TX0035017	HOUSTON, CITY OF	1014	1014_01	12	28.615
10584-001	TX0047457	MEMORIAL VILLAGE WAT	1014	1014_01	3.05	7.273
12233-001	TX0083933	UA HOLDINGS 1994-5	1014	1014_01	0.005	0.012
12466-001	TX0089061	OCEANEERING INTER.	1014K	1014_01	0.012	0.029
12830-001	TX0094056	ROBINSON, J.W.	1014K	1014_01	0.006	0.014
13484-001	TX0104311	529 #35, LTD	1014K	1014_01	0.2	0.477
14117-001	TX0119571	AQUAUTILITIES INC	1014K	1014_01	0.9	2.146
14830-001	TX0104795	SASSON ELI GRAVRIEL	1014	1014_01	0.099	0.236
11290-001	TX0046621	JACKRABBIT ROAD PUD	1014A	1014A_01	5.1	12.161
11792-002	TX0070971	HARRIS CO MUD 105	1014A	1014A_01	2.5	5.961
12209-001	TX0083500	HARRIS CO MUD 127	1014A	1014A_01	1.15	2.742
12834-001	TX0094307	HARRIS COUNTY MUD NO 167	1014	1014A_01	0.49	1.170
12834-001	TX0094307	HARRIS COUNTY MUD NO 167	1014	1014A_01	0.49	1.170
12841-001	TX0094307	ROLLING CREEK UD	1014A	1014A_01	0.4	0.954
12949-001	TX0095532	HARRIS CO MUD 284	1014A	1014A_01	0.6	1.431
13921-001	TX0117421	HARRIS COUNTY	1014A	1014A_01	0.02	0.048

TPDES	NPDES	Facility Name	Segment	Assessment Unit	Flow (MGD)	Allocation (Billion MPN/day)
14683-001	TX0128309	ARO PARTNERS	1014	1014A_01	1.51	3.600
02229-000	TX0079057	IGLOO PRODUCTS CORP	1014	1014B_01	N/A	N/A
10495-135	TX0026395	HOUSTON, CITY OF	1014B	1014B_01	3.5	8.346
10706-001	TX0025747	KATY, CITY OF	1014B	1014B_01	3.075	7.333
11893-001	TX0074004	MEMORIAL MUD	1014B	1014B_01	3	7.154
12298-001	TX0085448	FORT BEND CO MUD 034	1014B	1014B_01	1	2.385
12298-002	TX0129062	FORT BEND CO MUD NO 34	1014	1014B_01	0.25	0.596
12356-001	TX0086690	HARRIS CO MUD 345	1014B	1014B_01	0.71	1.693
12370-001	TX0087157	FORT BEND CO MUD 037	1014B	1014B_01	0.175	0.417
12427-001	TX0088218	GEORGE AIVAZIAN	1014B	1014B_01	0.001	0.002
12682-001	TX0092584	HARRIS CO MUD 216	1014B	1014B_01	0.4	0.954
12858-001	TX0097373	HARRIS COUNTY, TEXAS	1014B	1014B_01	0.026	0.062
13021-001	TX0095702	BIG OAKS MUD	1014B	1014B_01	0.7	1.669
13172-002	TX0096911	CINCO MUD 001	1014B	1014B_01	0.91	2.170
13228-001	TX0098965	FORT BEND CO MUD 050	1014B	1014B_01	0.7	1.669
13245-001	TX0099856	GRAND LAKES MUD 004	1014B	1014B_01	0.9	2.146
13558-001	TX0098957	CINCO MUD 001	1014B	1014B_01	3.3	7.869
13775-001	TX0115894	HARRIS FTB MUD 005	1014B	1014B_01	0.99	2.361
14011-001	TX0118109	FT BEND MUD 130	1014B	1014B_01	0.3	0.715
14134-001	TX0119873	FT BEND MUD 124	1014B	1014B_01	0.4	0.954
14182-001	TX0122556	ANN ARUNDEL FARMS	1014B	1014B_01	0.992	2.366
14231-001	TX0123749	GRAND MISSION MUD 1	1014	1014B_01	2	4.770
14301-001	TX0124451	HARRIS-FORT BEND COUNTIES MUD 3	1014	1014B_01	0.99	2.360
14343-001	TX0124851	TERRABROOK CINCO RANCH SOUTHWEST LP	1014	1014B_01	2.25	5.360
14455-001	TX0126004	FORT BEND COUNTY MUD NO 146	1014	1014B_01	0.75	1.790
14514-001	TX0126624	FORT BEND COUNTY MUD NO 133	1014	1014B_01	1.36	3.240
14519-001	TX0126527	FORT BEND COUNTY MUD NO 57	1014	1014B_01	0.9	2.150
14520-001	TX0126675	FORT BEND COUNTY MUD NO 58	1014	1014B_01	0.9	2.150
14528-001	TX0126764	FORT BEND COUNTY MUD 151	1014	1014B_01	0.9	2.150
14571-001	TX0127264	WALLER COUNTY ROAD IMPROVEME	1014	1014B_01	0.98	2.340
14585-001	TX0127418	J.A.C. INTERESTS LTD	1014	1014B_01	0.25	0.596
14639-001	TX0128147	AUC GROUP LP	1014	1014B_01	0.205	0.489
14646-001	TX0128236	WEST I-10 KATY HOLDINGS I LTD	1014	1014B_01	0.33	0.787
14704-001	TX0128708	FORT BEND COUNTY MUD 185	1014	1014B_01	0.35	0.835
14763-001	TX0129267	FORT BEND CO MUD NO 50	1014	1014B_01	1.5	3.580
14793-001	TX0129518	SKYMARK DEVELOPMENT CO INC	1014	1014B_01	0.8	1.910
14943-001	TX0132063	KATY 884 PARTNERS LTD	1014	1014B_01	0.75	1.790
01402-000	TX0042129	WYMAN-GORDON FORGINGS LP	1014	1014E_01	0.225	0.537
03153-000	TX0074292	TOSHIBA INTERNATIONAL CORP	1014	1014E_01	0.05	0.119
03994-000	TX0062642	NATIONAL OILWELL VARCO LP	1014	1014E_01	0.05	0.119

TPDES	NPDES	Facility Name	Segment	Assessment Unit	Flow (MGD)	Allocation (Billion MPN/day)
10932-001	TX0068047	HARRIS COUNTY, TEXAS	1014A	1014E_01	0.042	0.100
11472-001	TX0026263	SPENCER ROAD PUD	1014E	1014E_01	0.98	2.337
11523-001	TX0052906	HARRIS CO MUD 102	1014E	1014E_01	1.3	3.100
11836-001	TX0091626	HARRIS CO MUD 149	1014E	1014E_01	0.645	1.538
11906-001	TX0074896	HARRIS CO MUD 157	1014E	1014E_01	2.3	5.485
12927-001	TX0094579	HARRIS CO MUD 276	1014E	1014E_01	0.75	1.788
13328-001	TX0100137	REMINGTON MUD 002	1014E	1014E_01	1.1	2.623
14655-001	TX0128287	DRIL-QUIP INC	1014	1014E_01	0.075	0.179
14740-001	TX0129071	CW SCOA WEST LP	1014	1014E_01	1.5	3.580
14954-001	TX0127434	MISCHER INVESTMENTS LP	1014	1014E_01	0.3	0.715
11486-001	TX0062031	HARRIS CO MUD 070	1014E	1014E_02	1.5	3.577
11682-001	TX0064734	LANGHAM CREEK UD	1014E	1014E_02	2	4.769
11935-001	TX0075981	NORTHWEST HC MUD 016	1014E	1014E_02	0.99	2.361
11947-001	TX0075884	HARRIS CO MUD 208	1014E	1014E_02	6.7	15.977
12124-001	TX0079707	HARRIS CO MUD 185	1014E	1014E_02	0.675	1.610
12128-001	TX0079537	HORSEPEN BAYOU MUD	1014E	1014E_02	0.95	2.265
12223-001	TX0083496	WEST HC MUD 015	1014E	1014E_02	0.6	1.431
12304-001	TX0085588	CHIMNEY HILL MUD	1014E	1014E_02	1.2	2.862
12310-001	TX0085871	R&K WEIMAN MHP	1014E	1014E_02	0.03	0.072
12447-001	TX0088838	HARRIS CO MUD 196	1014E	1014E_02	1.4	3.338
12474-001	TX0089494	HARRIS CO MUD 166	1014E	1014E_02	0.625	1.490
12726-001	TX0100161	HARRIS CO MUD 155	1014E	1014E_02	1.55	3.696
13778-001	TX0097985	FRIEDMAN, STEPHEN	1014E	1014E_02	0.01	0.024
14583-001	TX0127388	HARRIS COUNTY MUD NO 165	1014	1014E_02	2	4.770
14905-001	TX0131601	FRY ROAD VENTURE LP	1014	1014E_02	0.5	1.190
14905-002	TX0131610	FRY ROAD VENTURE LP	1014	1014E_02	0.5	1.190
11696-002	TX0112585	ADDICKS UD	1014H	1014H_01	0.8	1.908
12516-001	TX0089907	WEST HOUSTON AIRPORT	1014H	1014H_01	0.015	0.036
11284-001	TX0053091	WESTLAKE MUD 001	1014H	1014H_02	0.9	2.146
11917-001	TX0074403	HARRIS CO MUD 071	1014H	1014H_02	2.35	5.604
11969-001	TX0076660	MAYDE CREEK MUD	1014H	1014H_02	2	4.769
11989-001	TX0076775	FRY ROAD MUD	1014H	1014H_02	0.8	1.908
12110-001	TX0079201	KATY ISD	1014H	1014H_02	0.1	0.239
12140-001	TX0079618	WEST HC MUD 007	1014H	1014H_02	0.5	1.192
12189-001	TX0082830	TEX-SUN PARKS, LC	1014H	1014H_02	0.15	0.358
12247-001	TX0084468	WEST HC MUD 017	1014H	1014H_02	0.275	0.656
12346-001	TX0086185	WEST PARK MUD	1014B	1014H_02	0.5	1.192
12802-001	TX0093891	HARRIS CO MUD 238	1014H	1014H_02	0.825	1.967
14109-001	TX0119121	KATY-HOCKLEY	1014H	1014H_02	0.075	0.179
14362-001	TX0125164	HARRIS COUNTY MUD NO 287	1014	1014H_02	0.9	2.150

TPDES	NPDES	Facility Name	Segment	Assessment Unit	Flow (MGD)	Allocation (Billion MPN/day)
14589-001	TX0127647	HARRIS COUNTY MUD NO 432	1014	1014H_02	0.8	1.910
14635-001	TX0128082	CLAY/PEEK 640 LP	1014	1014H_02	0.6	1.430
14794-001	TX0129534	SOUTH CENTRAL WATER COMPANY	1014	1014H_02	0.36	0.858
03153-000	TX0074292	TOSHIBA INTERNATIONAL CORPORATION	1014K	1014K_02	0.05	0.119
11152-001	TX0021512	WEST MEMORIAL MUD	1014L	1014L_01	6.48	15.452
11883-001	TX0071625	CASTLEWOOD MUD	1014L	1014L_01	2	4.769
12289-001	TX0085332	GREEN TRAILS MUD	1014L	1014L_01	0.99	2.361
12479-001	TX0089346	NOTTINGHAM COUNTRY MUD	1014L	1014L_01	1.3	3.100
14956-001	TX0132276	WESTON MUNICIPAL UTILITY DISTRICT	1014	1014L_01	2.1	5.010
11598-001	TX0058408	WILLIAMSBURG REG SA	1014L	1014L_02	3	7.154
01899-000	TX0060933	PILOT INDUSTRIES OF TEXAS	1017	1017_01	0.028	0.067
04443-000	TX0124273	TEXAS UNITED PIPE INC	1017	1017_01		N/A
04627-000	TX0118095	QUALITY PRODUCT FINISHING INC	1017	1017_01	0.025	0.060
10495-099	TX0057347	HOUSTON, CITY OF	1017	1017_01	4	9.538
10876-001	TX0022853	HARRIS CO FWSD 061	1017	1017_01	1.6	3.815
10876-002	TX0091804	HARRIS CO FWSD 061	1017	1017_01	3	7.154
11188-001	TX0026697	ROLLING FORK PUD	1017	1017_01	0.49	1.168
11273-001	TX0026352	HARRIS CO MUD 006	1017	1017_01	0.75	1.788
11375-001	TX0026247	AQUASOURCE UTILITIES INC	1017	1017_01	0.184	0.439
11485-001	TX0062235	HARRIS CO MUD 023	1017	1017_01	0.75	1.788
11538-001	TX0057029	GULF COAST WASTE DA	1017	1017_01	4.5	10.731
11563-001	TX0053325	REID ROAD MUD 001	1017	1017_01	1.75	4.173
11670-001	TX0063479	SUNBELT FWSD	1017	1017_01	0.99	2.361
11979-002	TX0076651	WHITE OAK BEND MUD	1017	1017_01	0.4	0.954
12121-001	TX0079146	HARRIS CO MUD 170	1017	1017_01	2.5	5.961
12342-001	TX0085821	J & S WATER CO LLC	1017	1017_01	0.045	0.107
12397-001	TX0087416	DANIEL INDUSTRIES	1017	1017_01	0.012	0.029
12443-001	TX0088676	SUPERIOR DERRICK	1017	1017_01	0.0024	0.006
12465-001	TX0088927	TIFCO INDUSTRIES	1017	1017_01	0.035	0.084
12552-001	TX0090115	NCI BUILDING SYSTEMS	1017	1017_01	0.01	0.024
12552-002	TX0117064	NCI BUILDING SYSTEMS	1017	1017_01	0.01	0.024
12574-001	TX0091316	HARRIS CO MUD 130	1017	1017_01	0.95	2.265
12681-001	TX0092606	JERSEY VILLAGE	1017	1017_01	0.8	1.908
12795-001	TX0093726	NORTHWEST HC MUD 029	1017	1017_01	0.565	1.347
13433-001	TX0103705	AQUASOURCE DVLP. CO.	1017	1017_01	0.5	1.192
13509-001	TX0092746	TRINITY @ WINDFERN	1017	1017_01	0.04	0.095
13578-001	TX0118583	COOPER CAMERON CORP	1017	1017_01	0.008	0.019
13623-001	TX0109126	WEST HC MUD 021	1017	1017_01	0.5	1.192
13689-001	TX0111937	WEST HC MUD 11	1017	1017_01	1.5	3.577
13727-001	TX0113697	MOORPARK VILLAGE,INC	1017	1017_01	0.035	0.084

TPDES	NPDES	Facility Name	Segment	Assessment Unit	Flow (MGD)	Allocation (Billion MPN/day)
14072-001	TX0082317	WEST HC MUD 010	1017	1017_01	1.5	3.577
14316-001	TX0123650	NCI BUILDING SYSTEMS LP	1017	1017_01	0.055	0.131
14825-001	TX0075841	FERNCO DEVELOPMENT LTD LENCO DEV LTD NORCO DE	1017	1017_01	0.06	0.143
14843-001	TX0129933	GRAEME ANTHONY REED	1017	1017_01	0.015	0.036
14860-001	TX0095435	RESTAURANT SERVICE, L.L.C.	1017	1017_01	0.002	0.005
14873-001	TX0082597	MCDONALDS CORP.	1017	1017_01	0.003	0.007
14900-001	TX0090735	SMITH, WILLIAM D.	1017	1017_01	0.012	0.029
00785-000	TX0007234	TEXAS TILE MANUFACTURING LLC	1017	1017_04		N/A
12132-001	TX0079634	WHITE OAK OWNERS	1017	1017_04	0.059	0.141
13764-001	TX0092932	ALLIANCE CH F3 GP	1017/1017E	1017_04	0.15	0.358
10495-139	TX0026875	HOUSTON, CITY OF	1017A	1017A_01	0.995	2.373
12222-001	TX0083950	AQUA TEXAS INC	1017B	1017B_01	0.25	0.596
13996-001	TX0117684	CROW FAMILY HOLDINGS	1017B	1017B_01	0.05	0.119
11193-001	TX0075434	AQUA UTILITIES INC	1017B	1017B_01	0.96	2.290
10495-076	TX0063011	HOUSTON, CITY OF	1017B	1017B_02	21	50.076
11005-001	TX0020095	CHAMP'S WATER CO	1017C	1017C_01	0.28	0.668
12714-001	TX0092908	HARRIS CO MUD 119	1017C	1017C_02	0.25	0.596
13939-001	TX0082988	RIEDEL, ANTHONY	1017	1017C_02	0.003	0.007
14359-001	TX0119431	HARRIS CO MUD 366	1017C	1017C_02	0.2	0.477
14538-001	TX0020788	HARRIS COUNTY WCID 133	1017	1017C_02	3	7.150

Appendix II. One Total Maximum Daily Load for Zinc in Nueces Bay for Segment Number 2482

TMDL Update to the WQMP: Zinc in Oyster Tissue in Nueces Bay (Segment 2482)

The document *One Total Maximum Daily Load for Zinc in Nueces Bay for Segment Number 2482* was adopted by the TCEQ on 11/01/2006 and approved by EPA on 12/15/06, and became an update to the state's Water Quality Management Plan. The TCEQ approved its corresponding implementation plan on 10/24/07.

This update serves to clarify Waste Load Allocation (WLAs) for point source discharges identified in the TMDL and establish a (WLA) for an additional permitted discharger, the City of Odem. The following tables and calculations reflect this change and will become an update to the TMDL. These facilities will be assessed for their reasonable potential to exceed the established zinc WLAs during permitting processing using established TCEQ screening procedures. Depending on the outcome of the reasonable potential screening; permit limits, monitoring, or other measures may be included in their respective permits.

This update also serves to correct the maximum permitted flow and associated zinc WLA for the City of Corpus Christi Allison Plant. The Allison Plant is permitted to discharge from two outfall points: 5 MGD to Outfall 1 and 2 MGD to Outfall 2, with a combined flow limit of 5 MGD. The original TMDL document mistakenly combined the two flows and indicated a maximum permitted flow of 7 MGD for the plant.

Table 1 will replace the permitted dischargers list, found in Table 3 of the TMDL document.

Table 1 –Permitted Dischargers in Nueces Bay

Name	Permit No.	Segment No.	Permit type	Max permitted flow (MGD)	WLA (kg/d)
Nueces Bay Power Station	WQ0001244-000	2482	Industrial	500	15.90
City of Corpus Christi – Allison Plant-Outfall 1	WQ0010401-006	2101	Municipal	5*	3.12
City of Corpus Christi – Allison Plant Outfall 2	WQ0010401-006	2482	Municipal	2*	1.25
City of Portland	WQ0010478-001	2482	Municipal	2.5	1.56
Sublight Enterprises Inc.	WQ0011096-001	2482	Municipal	0.009	0.006
City of Odem	WQ0010237-002	2482	Municipal	0.475	0.297

* The City of Corpus Christi – Allison Plant is permitted to discharge to two outfalls. The combined flow released from the outfalls is not to exceed 5 MGD. Consequently, the maximum combined zinc load released from the facility is not to exceed 3.12 kg/d.

The municipal zinc load (L_{MUNP}) calculation below updates the TMDL equation shown on p. 15 of the TMDL document.

$$\begin{aligned}
 \text{(g)} \quad L_{\text{MUNP}} &= (\text{TPC}) (\text{permitted municipal flow}) (\text{conversion factor}) \\
 L_{\text{MUNP}} &= (0.165 \text{ mg/l}) (0.3498 \text{ m}^3/\text{s}) (86.4) \\
 L_{\text{MUNP}} &= 4.986 \text{ kg/d}
 \end{aligned}$$

The TMDL allocation equation has been updated to reflect the aforementioned changes. As shown below, load allocations have been taken from the Allowance for Future Growth (AFG) category and reallocated to the Waste Load Allocation (WLA) to account for the City of Odem addition. This leaves the ultimate TMDL allocation unchanged.

$$\begin{aligned}
 \text{(k)} \quad \text{TMDL} &= \sum \text{LA} + \sum \text{WLA} + \text{AFG, where} \\
 \text{TMDL} &= 26.6 \text{ kg/d} + 32.90^* \text{ kg/d} + 6.4^{**} \text{ kg/d} \\
 \text{TMDL} &= 65.9 \text{ kg/d} \\
 &^* \text{ Modified from } 32.60 \text{ kg/d,} \\
 &^{**} \text{ Modified from } 6.7 \text{ kg/d}
 \end{aligned}$$

Appendix III. One Total Maximum Daily Load for Bacteria in Upper Oyster Creek for Segment Number 1245

TMDL Update to the WQMP: One TMDL for Bacteria in Upper Oyster Creek (Segment 1245)

The document *One Total Maximum Daily Load for Bacteria in Upper Oyster Creek for Segment Number 1245* was adopted by the TCEQ on 08/08/2007 and approved by EPA on 09/28/07, and became an update to the state's Water Quality Management Plan.

The purpose of this update to the Water Quality Management Plan is to include a new permit authorizing the discharge of treated domestic wastewater into Allocation Reach 2 (the upper portion) of Upper Oyster Creek. Note that this TMDL was written for *E. coli* and that it used the single sample criterion of 394 cfu/100 mL. The new permit is shown in Table 1 below.

Table 1: Permitted Bacteria Allocation for New Facility

State Permit Number	EPA Permit Number	Segment Number	Permittee Name	Flow (MGD)	Waste Load Allocation (WLA)	TMDL/Comments
12003-002	TX0132225	1245	Fort Bend County MUD #134	0.5	7.5 x 10 ⁹ cfu <i>E. coli</i> per day	Updates pages 35-37

The addition of this new facility to Allocation Reach 2 also changes the TMDL equation for the reach, given in Table 11 of the TMDL document. Note that other changes have already taken place that affected this equation, which have been outlined in the April 2008, July 2008, and January 2009 WQMP Updates. The WLA Continuous for Allocation Reach 2 will now be 1.4 x 10¹¹ cfu *E. coli* per day.

The Allowable Loading for Allocation Reach 2 will also have to increase to allow for the increased flow (and therefore increased allowable *E. coli* concentration) in Upper Oyster Creek as a result of this new discharge. As established on pages 32 and 33 and in Table 9 of the TMDL document, this “additional loading” is determined by calculating the “...difference between loadings if WWTFs operated at their full allowable daily discharges and the loadings that would be allowable under the average WWTF discharges reported...” As this permit is pending and no discharge exists from which to obtain actual average discharge, it is not possible to calculate this additional loading at this time. However, as long as all new/increased discharges have *E. coli* concentrations at or below the criterion, they will result in a neutral impact on Segment 1245 by increasing stream flow while adding bacteria at concentrations meeting protective criteria, as explained in the Future Growth section of the TMDL document on page 37.

Appendix IV. Three Total Maximum Daily Loads for Bacteria in the San Antonio Area for Segments 1910, 1910A, and 1911

TMDL Update to the WQMP: Salado Creek (Segment 1910), Walzem Creek (Segment 1910A), and Upper San Antonio River (Segment 1911)

The document *Three Total Maximum Daily Loads for Bacteria in the San Antonio Area (Segments 1910, 1910A, and 1911)* was adopted by the TCEQ on July 25, 2007 and approved by the EPA on September 25, 2007. Upon adoption, the TMDL became an update to the state's Water Quality Management Plan. In April 2009, the TMDL was modified through a WQMP update to reflect outfalls and dischargers found in the segments' watersheds which were not included in the original TMDL document, or those for which the allocations have changed.

Subsequent to the changes described above, the San Antonio Water System Salado WRC has gone offline. The reclaimed water is now treated by the Dos Rios plant and is released to the same outfall points as before. In addition, the outfall described in the previous update as "San Antonio Water System Salado WRC, Outfall 1" has been changed to read "San Antonio Water System Reclaimed 006". This outfall's flow has also been increased from 20.4 MGD to 46 MGD. With the increase in discharge, the stream flow, and its corresponding assimilative capacity, has increased resulting in an increased TMDL number. As a result, the outfall has been given a higher WLA for Fecal Coliform and *E. coli* that conforms to the accepted concentration based standard for these constituents.

Table 1 – Changes to the Permitted Bacteria Allocations

State Permit Number	Segment Number	Permittee Name	Flow (MGD)	Waste Load Allocation (WLA) – Fecal Coliform 10 ⁶ org/day	Waste Load Allocation (WLA) – <i>E. coli</i> 10 ⁶ org/day ^a	TMDL / Comments
10137-033	1910	San Antonio Water Service Reclaimed 004	3	11,355	7,154	Updates p. 28
10137-033	1911	San Antonio Water System Reclaimed 002	10	37,850	23,846	Updates p. 28
10137-033	1911	San Antonio Water System Reclaimed 003	10	37,850	23,846	Updates p. 28
10137-033	1911	San Antonio Water System Reclaimed 005	2.6	9,841	6,200	Updates p. 28
10137-033	1911	San Antonio Water System Reclaimed 006	46	174,110	109,691	Updates p. 28

^a The criteria ratio of 0.63 (126/200 = 0.63) was applied to convert fecal coliform to *E. coli*.

As a result of the increased flow and WLA allocation for the San Antonio Water System Reclaimed 006 outfall, the TMDL allocation and WLA allocation for segment 1911 has been increased. See tables 2 and 3 below for the updated TMDL allocations for Fecal Coliform and *E. coli*.

Table 2 - Summary of Fecal Coliform TMDL for Impaired Reach (10^6 org/day)

Segment #	Segment Name	WLA	WLA-MS4	LA	MOS	TMDL
1911	USAR	264,762	17,321,548	10,221,066	1,291,723	29,099,099

Table 3 - Summary of *E. coli* TMDL for Impaired Reach (10^6 org/day)

Segment #	Segment Name	WLA	WLA-MS4	LA	MOS	TMDL
1911	USAR	166,803	10,912,575	6,439,271	813,787	18,332,436