

Amendment # 1 Update to Appendix B Sampling Process Design and Monitoring Schedule to the Houston- Galveston Area Council Clean Rivers Program FY 2014/2015 QAPP

***Prepared by the Houston-Galveston Area
Council (H-GAC) in Cooperation with the
Texas Commission on Environmental
Quality (TCEQ)***

Effective: Immediately upon approval by all parties

Questions concerning this QAPP should be directed to:

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CRP Quality Assurance Officer

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Justification

This document details the changes made to the basin-wide Quality Assurance Project Plan to update Appendix B for fiscal year 2015. This document also updates the field quality control activities and bacteria holding time requirements to match those of the TCEQ SWQM program to ensure a consistent state-wide monitoring program.

Summary of Changes

Section A4, page 17: REPLACE Chris Barry's name with Michael Cantu. Chris Barry retired and Michael is the new Lab Manager and CRP Project Manger.

Figure A4.1b, page 25: REPLACE Chris Barry's name with Michael Cantu's name in the Organizational Chart. Chris Barry retired and Michael is the new Lab Manager and CRP Project Manger.

Section B2, pages 51-55: CHANGE Tables B2 footnote regarding *E. coli* sample hold time is amended to allow a maximum of 30 hours between sample collection and analysis. This change affects all B2 tables except the table for HCPCS because they do not collect *E. coli* samples. HCPCS collects only Enterococci samples.

Section B5 Quality Control, pages 63-64, is amended to remove the requirement for field split collection.

The following tables in Appendix A have an amended footnote on the Bacteria worksheet to allow a maximum of 30 hours time elapsed between sample collection and analysis

- TABLE A7.1a Measurement Performance Specifications for Houston-Galveston Area Council (H-GAC)
- TABLE A7.1c Measurement Performance Specifications for City of Houston, Health & Human Services (HHS)
- TABLE A7.1d Measurement Performance Specifications for City of Houston, Water Quality Control (WQC)
- TABLE A7.1e Measurement Performance Specifications for San Jacinto River Authority - Lake Conroe samples (SJRA-LC)
- TABLE A7.1f Measurement Performance Specifications for San Jacinto River Authority - samples from The Woodlands (SJRA-W)
- TABLE A7.1g Measurement Performance Specifications for Environmental Institute of Houston (EIH)

The following information in Appendix B is amended to reflect changes to:

- Sample design rationale FY 2015
- Monitoring Sites table with updated legends
- Maps of sampling sites

Detail of Changes

Sample Design Rationale FY 2015

The following items were changes made to the Environmental Institute of Houston – UHCL (EIH) monitoring schedule:

- ADD site 16485 (Jarbo Bayou at Lawrence Road) to make additional monitoring location on Jarbo Bayou to support TMDL and WPP activities.
- DROP site 20477 (Unnamed tributary of Dickinson Bayou at Avenue L) to move resources to Jarbo Bayou. TCEQ Region 12 agreed to pick up site since EIH was adding Jarbo Bayou site.

The following items were changes made to the San Jacinto River Authority (SJRA) – Lake Conroe and Woodlands Divisions monitoring schedule:

- MOVE site 16627 upstream to footbridge for easier access to water. Changed station location lat/long and description.
- DROP site 16628 (Lower Panther Branch 91 M downstream of Sawdust Rd) because banks too steep to safely access water.
- ADD site 16422 (Panther Branch 295 M downstream of Sawdust Road in The Woodlands). Downstream of a confluence and more accessibility to stream.

There were no changes in frequency of sample collection or parameters analyzed. All other partner sites, frequency, and parameters remained the same.

Monitoring Sites Table

The attached monitoring table in Appendix B titled “H-GAC Coordinated Monitoring Schedule for FY2015” is added to reflect monitoring for FY 2015.


Maps

The attached maps are added to Appendix C to reflect monitoring sites for FY 2015.

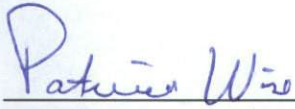
These changes will be incorporated into the QAPP document and TCEQ and the Houston-Galveston Area Council and all local partners will acknowledge and accept these changes by signing this document.

Texas Commission on Environmental Quality

Water Quality Planning Division


Allison Fischer
Project Manager
Clean Rivers Program

8/25/2014
Date

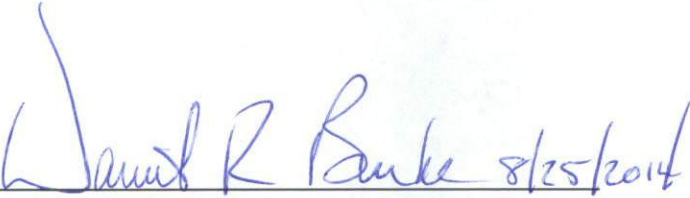

Patricia Wise, Work Leader
Clean Rivers Program

8/25/2014
Date


Allison Fischer
Project Quality Assurance Specialist
Clean Rivers Program

8/25/2014
Date

Monitoring Division


Daniel R. Burke
Lead CRP Quality Assurance Specialist

8/25/2014
Date

Houston-Galveston Area Council (H-GAC)



Todd Running
H-GAC Project Manager

8/8/14
Date



Jean Wright
H-GAC Quality Assurance Officer

8/8/14
Date

The H-GAC will provide copies of this project plan and any amendments or appendices of this plan to each person on this list and to each sub-tier project participant, e.g., subcontractors, other units of government. The H-GAC will document distribution of the plan and any amendments and appendices, maintain this documentation as part of the project's quality assurance records, and will ensure the documentation is available for review.

Harris County Pollution Control Services (HCPCS)

Michael Cantu 7/31/14

Michael Cantu
HCPCS CRP Project Manager

Date

Tim Duffey 7.31.14

Tim Duffey
Field Quality Assurance Officer

Date

Michael Cantu 7/31/14

Michael Cantu
HCPCS Laboratory Manager

Date

Debra Burney 7/31/14

Debra Burney
Laboratory Quality Assurance Officer

Date

City of Houston, Health and Human Services (HHS)



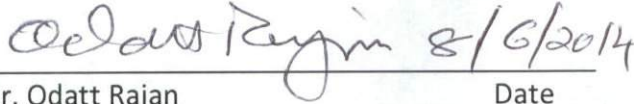
Arturo Blanco
HHS CRP Project Manager

8/5/14
Date



Lisa Groves
HHS Field Quality Assurance Officer

8/6/14
Date



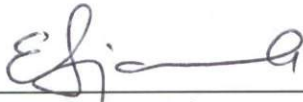
Dr. Odatt Rajan
HHS CRP Laboratory Director

8/6/2014
Date



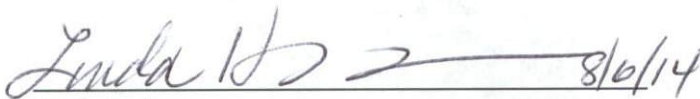
Cyndie Boulé
HHS Laboratory Quality Assurance Officer

8/6/2014
Date



Emina Marjanovich
HHS Lab Inorganic Chemistry Section Technical Supervisor

8/6/2014
Date



Linda Holman
HHS lab Microbiology Section Technical Supervisor

8/6/14
Date

City of Houston, Department of Water Quality Control (WQC)



Fabian Heaney
WQC Laboratory Director

8-6-14

Date



Desta Takie
WQC Field Quality Assurance Officer

Date



Ying Wei
WQC CRP Project Manager & Laboratory Manager

8/5/14

Date



Shubha Thakur
WQC Laboratory Quality Assurance Officer

8/6/14

Date

San Jacinto River Authority (SJRA)



Randy Acreman
SJRA Project Manager

8-7-14

Date



Randy Acreman
Field Quality Assurance Officer

8-7-14

Date

**Environmental Institute of Houston, University of Houston –
Clear Lake (EIH)**



Dr. George Guillen
EIH CRP Project Manager

8/5/14

Date



Jenny Oakley
EIH Field Quality Assurance Officer

8/4/14

Date

Eastex Environmental Laboratory

Pam D. Hickman 8-8-14
Pam Hickman Date
Eastex Lab Manager

Daniel Bowen 8/8/14
Daniel Bowen Date
Eastex Lab Quality Assurance Officer

Jean Wright**H-GAC Quality Assurance Officer**

Responsible for coordinating the implementation of the QA program. Responsible for writing and maintaining the QAPP and monitoring its implementation. Responsible for maintaining records of QAPP distribution, including appendices and amendments. Responsible for maintaining written records of sub-tier commitment to requirements specified in this QAPP. Responsible for identifying, receiving, and maintaining project QA records. Responsible for coordinating with the TCEQ QAS to resolve QA-related issues. Notifies the H-GAC Project Manager of particular circumstances which may adversely affect the quality of data. Coordinates and monitors deficiencies and corrective action. Coordinates and maintains records of data verification and validation. Coordinates the research and review of technical QA material and data related to water quality monitoring system design and analytical techniques. Conducts monitoring systems audits on project participants to determine compliance with project and program specifications, issues written reports, and follows through on findings. Ensures that field staff is properly trained and that training records are maintained.

Bill Hoffman**H-GAC Data Manager**

Responsible for ensuring that field data are properly reviewed and verified. Responsible for the transfer of basin quality-assured water quality data to the TCEQ in a format compatible with SWQMIS. Maintains quality-assured data on the H-GAC internet sites.

Eastex Environmental Laboratory (Eastex)**Pam Hickman****Laboratory Director - Eastex Environmental Laboratory (Contract Lab)**

Responsible for producing quality analytical data for samples collected and submitted by H-GAC. Maintains verification of procedures establishing the level of quality. Responsible for sending data and COC forms to H-GAC within time specified in contract.

Daniel Bowen**Eastex Lab QAO**

Checks training, competency, and re-training of technicians. Performs verification and validation procedures to confirm quality data is issued to clients. Performs other QA/QC duties and checks associated with lab activities. Resolves out-of-control issues. Conducts internal lab audits.

Harris County Pollution Control Services (HCPCS)**Michael Cantu****CRP Project Manager / Manager-Laboratory Services**

Responsible for project oversight, and maintaining communication with H-GAC Project Manager, and between field and laboratory personnel. Responsible for producing quality analytical data and maintaining verification of procedures establishing the level of quality.

Figure A4.1b. The Harris County Pollution Control Services (HCPCS) CRP Organizational Chart.

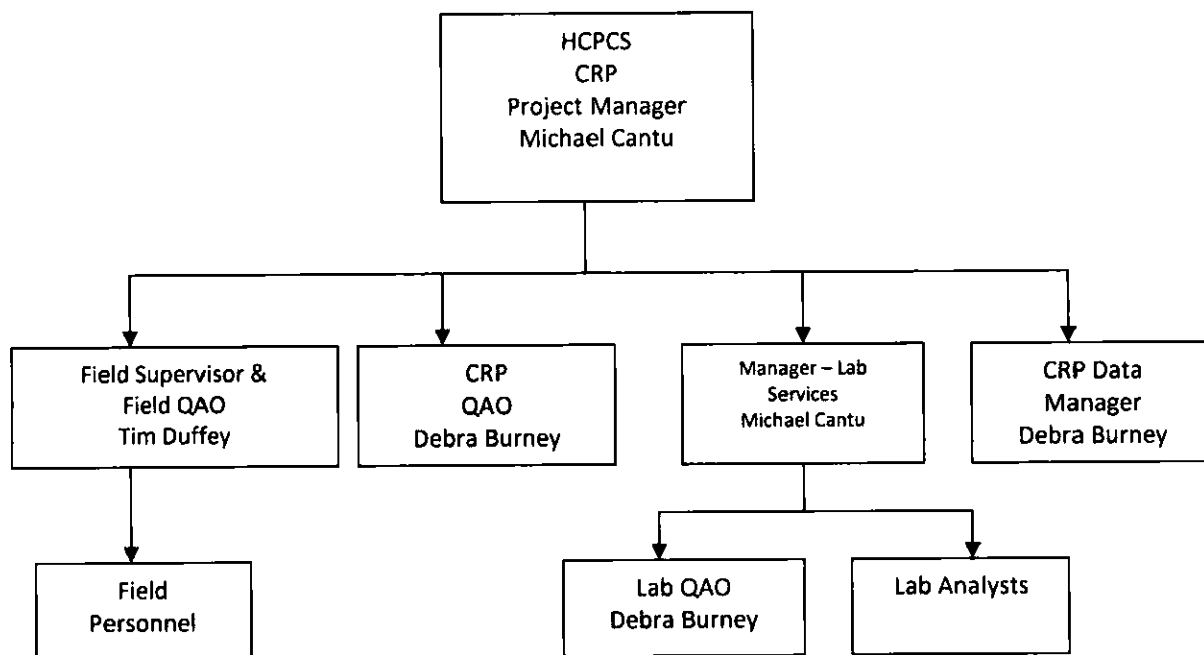


Table B2.1a Sample Storage, Preservation and Handling Requirements for H-GAC. Samples Analyzed at Eastex Environmental Laboratory

Parameter	Matrix	Container	Preservation	Sample Volume	Holding Time
TSS	water	Plastic	Cool to 4°C	1 L	7 days
Turbidity	water	Plastic	Cool to 4°C	50 mL ⁴	48 hours
Sulfate	water	Plastic	Cool to 4°C	100 mL ⁴	28 days
Chloride	water	Plastic	Cool to 4°C	100 mL ⁴	28 days
<i>E. coli</i> IDEXX Coliart	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours ¹
Enterococci IDEXX Enterolert	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours
TKN	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	500 mL ³	28 days
Ammonia-N	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL ³	28 days
Nitrite + nitrate-N	water	Plastic	Cool to 4°C, H ₂ SO ₄ to pH <2	125 mL ³	28 days
Phosphorus-P, total	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL ³	28 days
Hardness, Total	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL ³	28 days
Orthophosphate Phosphorus	water	Plastic	Cool to 4°C	250 mL	48 hours
Chlorophyll- <i>a</i>	water	Brown plastic	Dark & iced before filtration; Dark & frozen after filtration	4 L	Filtered w/in 48 hours; after filtered, then frozen up to 23 days

¹ *E. coli* samples should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

³ Five tests are analyzed from one 1L plastic bottle.

⁴ One 500 mL plastic container is used to collect these three samples.

Table B2.1b Sample Storage, Preservation and Handling Requirements for HCPCS

Parameter	Matrix	Container	Preservation	Sample Volume	Holding Time
TSS	water	Plastic	Cool to 4°C	½ Gal	7 days
Enterococci IDEXX Enterolert	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours
Ammonia-N	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	50 mL ³	28 days
TKN	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	500 mL	28 days ²
Nitrite + nitrate- N	water	Plastic	Cool to 4°C, H ₂ SO ₄ to pH <2	50 mL ³	28 days
Phosphorus-P, total	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	50 mL ³	28 days
Chlorophyll-a	water	Brown plastic	Dark & iced before filtration; Dark & frozen after filtration	4 L	Filtered w/in 48 hours; after filtered, then frozen up to 23 days ²

² Contract lab will pick up and analyze samples(s).

³ Three nutrient tests are collected from one 250 mL plastic container.

Table B2.1c Sample Storage, Preservation and Handling Requirements for HHS

Parameter	Matrix	Container	Preservation	Sample Volume	Holding Time
TSS	water	Plastic	Cool to 4°C	700 mL ³	7 days
Sulfate	water	Plastic	Cool to 4°C	100 mL ³	28 days
Chloride	water	Plastic	Cool to 4°C	100 mL ³	28 days
<i>E. coli</i> IDEXX Collert-18	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours ¹
Enterococci IDEXX Enterolert	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours
TKN	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	250 mL	28 days ²
Ammonia-N	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	100 mL ⁴	28 days
Nitrate-N	water	Plastic	Cool to 4°C	100 mL ³	48 hours
Phosphorus-P, total	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	100 mL ⁴	28 days

¹ *E. coli* samples should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

³ Multiple tests are collected from one 1-liter plastic cubitainer with no preservative added.

⁴ Multiple tests are conducted out of one 1 liter plastic cubitainer which has been preserved with acid.

Table B2.1d Sample Storage, Preservation and Handling Requirements for WQC

Parameter	Matrix	Container	Preservation	Sample Volume	Holding Time
TSS	water	Plastic	Cool to 4°C	100 mL ³	7 days
Sulfate	water	Plastic	Cool to 4°C	50 mL ³	28 days
Chloride	water	Plastic	Cool to 4°C	50 mL ³	28 days
<i>E. coli</i> IDEXX Colilert	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours ¹
Enterococci IDEXX Enterolert	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours
TKN	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	500 mL	28 days ²
Ammonia-N	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	500 mL	28 days
Nitrate-N	water	Plastic	Cool to 4°C,	50 mL ³	48 hours
Nitrite-N	water	Plastic	Cool to 4°C,	50 mL ³	48 hours
Phosphorus-P, total	water	Brown, glass bottle	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL	28 days
Chlorophyll- <i>a</i>	water	Brown plastic	Dark & iced before filtration; Dark & frozen after filtration	4 L	Filtered w/in 48 hours; after filtered, then frozen up to 23 days ²
Alkalinity, Total	water	Plastic	Cool to 4°C	50 mL ³	28 days

¹ *E. coli* samples should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

² Contract lab will pick up and analyze sample(s).

³ All tests are collected in one 500 mL plastic bottle.

Table B2.1e Sample Storage, Preservation and Handling Requirements for SJRA Samples Collected from Lake Conroe and Analyzed by WQC Laboratory

Parameter	Matrix	Container	Preservation	Sample Volume	Holding Time
TSS	water	Plastic	Cool to 4°C	100 mL ³	7 days
Sulfate	water	Plastic	Cool to 4°C	50 mL ³	28 days
Chloride	water	Plastic	Cool to 4°C	50 mL ³	28 days
<i>E. coli</i> IDEXX Colilert	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours ²
TKN	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	500 mL	28 days ²
Ammonia-N	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	500 mL	28 days
Nitrate-N	water	Plastic	Cool to 4°C,	50 mL ³	28 days
Nitrite-N	water	Plastic	Cool to 4°C,	50 mL ³	48 hours
Phosphorus-P, total	water	Brown, glass bottle	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL	28 days
Chlorophyll- <i>a</i>	water	Brown plastic	Dark & iced before filtration; Dark & frozen after filtration	4 L	Filtered w/in 48 hours; after filtered, then frozen up to 23 days ²
Alkalinity, Total	water	Plastic	Cool to 4°C	50 mL ³	28 days

¹ *E. coli* samples should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

² Contract lab will pick up and analyze sample(s).

³ All tests are collected in one 500 mL plastic bottle.

Table B2.1f Sample Storage, Preservation and Handling Requirements for SJRA Samples Collected from The Woodlands and Analyzed at Eastex Environmental Laboratory

Parameter	Matrix	Container	Preservation	Sample Volume	Holding Time
TSS	water	Plastic	Cool to 4°C	1 L	7 days
Sulfate	water	Plastic	Cool to 4°C	100 ml ⁴	28 days
Chloride	water	Plastic	Cool to 4°C	100 mL ⁴	28 days
<i>E. coli</i> IDEXX Colilert	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours ¹
Enterococci IDEXX Enterolert	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours
Ammonia-N	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL ³	28 days
TKN	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	500 mL	28 days ²
Nitrite+Nitrate-N	water	Plastic	Cool to 4°C, H ₂ SO ₄ to pH <2	125 mL ³	28 days
Nitrate-N	water	Plastic	Cool to 4°C, H ₂ SO ₄ to pH <2	125 mL ³	28 days
Phosphorus-P, total	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL ³	28 days
Chlorophyll- <i>a</i>	water	Brown plastic	Dark & iced before filtration; Dark & frozen after filtration	4 L	Filtered w/in 48 hours; after filtered, then frozen up to 23 days ²
Hardness, Total	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	100 mL	28 days
Copper, Total	water	Plastic	Cool to 4°C HNO ₃ to pH <2	100 mL ⁵	6 months
Selenium, Total	water	Plastic	Cool to 4°C HNO ₃ to pH <2	100 mL ⁵	6 months

¹ *E. coli* samples should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

² Contract lab will pick up and analyze sample(s).

³ Nutrient tests are collected from one 1 L plastic bottle.

⁴ One 1 L plastic container is used to collect these two samples.

⁵ All 3 "Total Metals" are collected in one 1-L plastic container and split at the lab for the various parameter

Table B2.1g Sample Storage, Preservation and Handling Requirements for EIH. Samples Analyzed by Eastex Environmental Laboratory

Parameter	Matrix	Container	Preservation	Sample Volume	Holding Time
TSS	water	Plastic	Cool to 4°C	1 L	7 days
Turbidity	water	Plastic	Cool to 4°C	50 mL ⁴	48 hours
Sulfate	water	Plastic	Cool to 4°C	100 mL ⁴	28 days
Chloride	water	Plastic	Cool to 4°C	100 mL ⁴	28 days
<i>E. coli</i> IDEXX Colilert*	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours ¹
Enterococci IDEXX Enterolert	water	Sterile Plastic w/ sodium thiosulfate	Cool to <6°C but not frozen	100 mL	8 hours
TKN	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	500 mL ³	28 days
Ammonia-N	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL ³	28 days
Nitrite + nitrate-N	water	Plastic	Cool to 4°C, H ₂ SO ₄ to pH <2	125 mL ³	28 days
Phosphorus-P, total	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL ³	28 days
Hardness, Total	water	Plastic	Cool to 4°C H ₂ SO ₄ to pH <2	125 mL ³	28 days
Ortho phosphate Phosphorus	water	Plastic	Cool to 4°C	250 mL	48 hours
Chlorophyll- <i>a</i>	water	Brown plastic	Dark & iced before filtration; Dark & frozen after filtration	4 L	Filtered w/in 48 hours; after filtered, then frozen up to 23 days

¹ *E. coli* samples should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

³ Five tests are analyzed from one 1L plastic bottle.

⁴ One 500 mL plastic container is used to collect these three samples.

B5 Quality Control

Sampling Quality Control Requirements and Acceptability Criteria

Original paragraph remains the same.

Field blank

Original 3 paragraphs remain the same.

Field Split

Field split samples are not required as part of the routine Clean Rivers Program, but if needed, may be inserted into the sample regime. The frequency is determined by the needs of the project.

Laboratory Measurement Quality Control Requirements and Acceptability Criteria

Batch

A batch is defined as environmental samples that are prepared and/or analyzed together with the same process and personnel, using the same lot(s) of reagents. A preparation batch is composed of one to 20 environmental samples of the same NELAP-defined matrix, meeting the above mentioned criteria and with a maximum time between the start of processing of the first and last sample in the batch to be 25 hours. An analytical batch is composed of prepared environmental samples (extract, digestates, or concentrates) which are analyzed together as a group. An analytical batch can include prepared samples originating from various environmental matrices and can exceed 20 samples.

Method Specific QC requirements

QC samples, other than those specified later this section, are run (e.g., sample duplicates, surrogates, internal standards, continuing calibration samples, interference check samples, positive control, negative control, and media blank) as specified in the methods and in SWQM Procedures. The requirements for these samples, their acceptance criteria or instructions for establishing criteria, and corrective actions are method-specific.

Detailed laboratory QC requirements and corrective action procedures are contained within the individual laboratory quality manuals (QMs). The minimum requirements that all participants abide by are stated below.

Comparison Counting

For routine bacteriological samples, repeat counts on one or more positive samples are required, at least monthly. If possible, compare counts with an analyst who also performs the analysis. Replicate counts by the same analyst should agree within 5 percent, and those between analysts should agree within 10 percent. Record the results.

Appendix A: Measurement Performance Specifications (Table A7.1)

TABLE A7.1a Measurement Performance Specifications for Houston-Galveston Area Council (H-GAC)

Field Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
TEMPERATURE, WATER (DEGREES CENTIGRADE)	DEG C	water	SM 2550 B and TCEQ SOP V1	00010	NA*	NA	NA	NA	NA	Field
TRANSPARENCY, SECCHI DISC (METERS)	meters	water	TCEQ SOP V1	00078	NA*	NA	NA	NA	NA	Field
SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C)	us/cm	water	EPA 120.1 and TCEQ SOP, V1	00094	NA*	NA	NA	NA	NA	Field
OXYGEN, DISSOLVED (MG/L)	mg/L	water	SM 4500-O G and TCEQ SOP V1	00300	NA*	NA	NA	NA	NA	Field
PH (STANDARD UNITS)	s.u.	water	EPA 150.1 and TCEQ SOP V1	00400	NA*	NA	NA	NA	NA	Field
SALINITY - PARTS PER THOUSAND	PPT	water	SM 2520 and TCEQ SOP V1	00480	NA*	NA	NA	NA	NA	Field
DAYS SINCE PRECIPITATION EVENT (DAYS)	days	other	TCEQ SOP V1	72053	NA*	NA	NA	NA	NA	Field
DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE	meters	water	TCEQ SOP V2	82903	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL WIDTH AT TIME OF STUDY (METERS)***	meters	other	TCEQ SOP V2	89864	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL DEPTH AT TIME OF STUDY(METERS)***	meters	other	TCEQ SOP V2	89865	NA*	NA	NA	NA	NA	Field
POOL LENGTH, METERS***	meters	other	TCEQ SOP V2	89869	NA*	NA	NA	NA	NA	Field
% POOL COVERAGE IN 500 METER REACH***	%	other	TCEQ SOP V2	89870	NA*	NA	NA	NA	NA	Field
WIND INTENSITY (1=CALM,2=SLIGHT,3=MOD.,4=STRONG)	NU	other	NA	89965	NA	NA	NA	NA	NA	Field
PRESENT WEATHER (1=CLEAR,2=PTCLDY,3=CLDY,4=RAIN,5=OTHER)	NU	other	NA	89966	NA	NA	NA	NA	NA	Field
WATER SURFACE(1=CALM,2=RIPPLE,3=WAVE,4=WHIT ECAP)	NU	water	NA	89968	NA	NA	NA	NA	NA	Field
TIDE STAGE (1=LOW,2=FALLING,3=SLACK,4=RISING,5=HI)	NU	water	NA	89972	NA	NA	NA	NA	NA	Field
WATER COLOR (1=BROWNISH, 2=REDDISH, 3=GREENISH, 4=BLACKISH, 5=CLEAR, 6=OTHER)	NU	water	NA	89969	NA	NA	NA	NA	NA	Field
WATER ODOR (1=SEWAGE, 2=OILY/CHEMICAL, 3=ROTTEN EGG, 4=MUSKY, 5=FISHY, 6=NONE, 7=OTHER)	NU	water	NA	89971	NA	NA	NA	NA	NA	Field
WATER CLARITY (1=EXCELLENT, 2=GOOD, 3=FAIR, 4=POOR)	NU	water	NA	20424	NA	NA	NA	NA	NA	Field
TURBIDITY, OBSERVED (1=LOW, 2=MEDIUM, 3=HIGH)	NU	water	NA	88842	NA	NA	NA	NA	NA	Field
PRIMARY CONTACT, OBSERVED ACTIVITY (# OF PEOPLE OBSERVED)	# of people observed	other	NA	89978	NA	NA	NA	NA	NA	Field
EVIDENCE OF PRIMARY CONTACT RECREATION (1 = OBSERVED, 0 = NOT OBSERVED)	NU	other	NA	89979	NA	NA	NA	NA	NA	Field

* Reporting to be consistent with SWQM guidance and based on measurement capability.

*** To be routinely reported when collecting data from perennial pools.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
 TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1a Measurement Performance Specifications for Houston-Galveston Area Council (H-GAC)

Flow Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
FLOW STREAM, INSTANTANEOUS (CUBIC FEET PER SEC)	cfs	water	TCEQ SOP V1	00061	NA*	NA	NA	NA	NA	Field
FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High,6=Dry	NU	water	TCEQ SOP V1	01351	NA*	NA	NA	NA	NA	Field
STREAM FLOW ESTIMATE (CFS)	cfs	Water	TCEQ SOP V1	74069	NA*	NA	NA	NA	NA	Field
FLOW MTH 1=GAGE 2=ELEC 3=MECH 4=WEIR/FLU 5=DOPPLER	NU	other	TCEQ SOP V1	89835	NA*	NA	NA	NA	NA	Field

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
 TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods 2012 (RG-415).
 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1a Measurement Performance Specifications for Houston-Galveston Area Council (H-GAC)

24 Hour Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
TEMPERATURE, WATER (DEGREES CENTIGRADE), 24HR AVG	DEG C	Water	TCEQ SOP V1	00209	NA	NA	NA	NA	NA	field
WATER TEMPERATURE, DEGREES CENTIGRADE, 24HR MAX	DEG C	Water	TCEQ SOP V1	00210	NA	NA	NA	NA	NA	field
TEMPERATURE, WATER (DEGREES CENTIGRADE) 24HR MIN	DEG C	Water	TCEQ SOP V1	00211	NA	NA	NA	NA	NA	field
SPECIFIC CONDUCTANCE, US/CM, FIELD, 24HR AVG	uS/cm	Water	TCEQ SOP V1	00212	NA	NA	NA	NA	NA	field
SPECIFIC CONDUCTANCE, US/CM, FIELD, 24HR MAX	uS/cm	Water	TCEQ SOP V1	00213	NA	NA	NA	NA	NA	field
SPECIFIC CONDUCTANCE, US/CM, FIELD, 24HR MIN	uS/cm	Water	TCEQ SOP V1	00214	NA	NA	NA	NA	NA	field
PH, S.U., 24HR MAXIMUM VALUE	std. units	Water	TCEQ SOP V1	00215	NA	NA	NA	NA	NA	field
PH, S.U., 24HR, MINIMUM VALUE	std. units	Water	TCEQ SOP V1	00216	NA	NA	NA	NA	NA	field
SALINITY, 24-HR, MAXIMUM, PPT	ppt	Water	TCEQ SOP V1	00217	NA	NA	NA	NA	NA	field
SALINITY, 24-HR, AVERAGE, PPT	ppt	Water	TCEQ SOP V1	00218	NA	NA	NA	NA	NA	field
SALINITY, 24-HR, MINIMUM, PPT	ppt	Water	TCEQ SOP V1	00219	NA	NA	NA	NA	NA	field
SALINITY, # OF MEASUREMENTS IN 24-HRS	NU	Water	TCEQ SOP V1	00220	NA	NA	NA	NA	NA	field
WATER TEMPERATURE, # OF MEASUREMENTS IN 24-HRS	NU	Water	TCEQ SOP V1	00221	NA	NA	NA	NA	NA	field
SPECIFIC CONDUCTANCE, # OF MEASUREMENTS IN 24-HRS	NU	Water	TCEQ SOP V1	00222	NA	NA	NA	NA	NA	field
pH, # OF MEASUREMENTS IN 24-HRS	NU	Water	TCEQ SOP V1	00223	NA	NA	NA	NA	NA	field
DISSOLVED OXYGEN, 24-HOUR MIN. (MG/L) MIN. 4 MEA	mg/l	Water	TCEQ SOP V1	89855	NA	NA	NA	NA	NA	field
DISSOLVED OXYGEN, 24-HOUR MAX. (MG/L) MIN. 4 MEA	mg/l	Water	TCEQ SOP V1	89856	NA	NA	NA	NA	NA	field
DISSOLVED OXYGEN, 24-HOUR AVG. (MG/L) MIN. 4 MEA	mg/l	Water	TCEQ SOP V1	89857	NA	NA	NA	NA	NA	field
DISSOLVED OXYGEN, # OF MEASUREMENTS IN 24-HRS	NU	Water	TCEQ SOP V1	89858	NA	NA	NA	NA	NA	field
References: United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.) TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods for Water, 2012 (RG-415). TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)										

TABLE A7.1a Measurement Performance Specifications for Houston-Galveston Area Council (H-GAC)

Conventional Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540 D	00530	4	1	NA	NA	NA	Eastex
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	SM 4500 NH ₃ -G	00610	0.1	0.1	70-130	20	80-120	Eastex
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	SM 4500-N _{org} -C and SM 4500-NH ₃ -B	00625	0.2	0.2	70-130	20	80-120	Eastex
NITRITE PLUS NITRATE, TOTAL ONE LAB DETERMINED VALUE (MG/L AS N)	mg/L	water	SM 4500-NO ₃ -F	00630	0.05	0.02	70-130	20	80-120	Eastex
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	SM 4500-P E	00665	0.06	0.02	70-130	20	80-120	Eastex
ORTHOPHOSPHATE PHOSPHORUS, DISS, MG/L, FLDILT<15MIN	mg/L	water	SM 4500-P E	00671	0.04	0.02	70-130	20	80-120	Eastex
ORTHOPHOSPHATE PHOSPHORUS, DISS, MG/L, FILTER >15MIN	mg/L	water	SM 4500-P E	70507	0.04	0.02	70-130	20	80-120	Eastex
HARDNESS, TOTAL (MG/L AS CaCO ₃)*	mg/L	water	SM 2340 C	00900	5	5	NA	20	80-120	Eastex
CHLORIDE (MG/L AS CL)	mg/L	water	SM 4500 Cl- C	00940	5	5	70-130	20	80-120	Eastex
SULFATE (MG/L AS SO ₄)	mg/L	water	ASTM D516	00945	5	5	70-130	20	80-120	Eastex
CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH	ug/L	water	EPA 446.0	32211	3	3	NA	20	80-120	Eastex
TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	NTU	water	SM 2130B	82079	0.5	0.5	NA	NA	NA	Eastex

*Hardness is not used for regulatory purposes but is used to assess metals in water at inland sites (estuarine sites do not require hardness analysis).

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
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 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1a Measurement Performance Specifications for Houston-Galveston Area Council (H-GAC)

Bacteriological Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	Colilert-18 **	31699	1	1	NA	0.50*	NA	Eastex
ENTEROCOCCI, ENTEROLERT, IDEXX, (MPN/100 ML)	MPN/100 mL	water	Enterolert	31701	10***	10	NA	0.50*	NA	Eastex
E.COLI, COLILERT, IDEXX, HOLDING TIME	hours	water	NA	31704	NA	NA	NA	NA	NA	Eastex

* This value is not expressed as a relative percent difference. It represents the maximum allowable difference between the logarithm of the result of a sample and the logarithm of the duplicate result. See Section B5.

** E. coli samples analyzed by IDEXX Colilert-18 should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery longer than 6 hours, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

***Enterococcus Samples should be diluted 1:10 for all waters.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).

TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1c Measurement Performance Specifications for City of Houston, Health & Human Services (HHS)

Field Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
TEMPERATURE, WATER (DEGREES CENTIGRADE)	DEG C	water	SM 2550 B and TCEQ SOP V1	00010	NA*	NA	NA	NA	NA	Field
TRANSPARENCY, SECCHI DISC (METERS)	meters	water	TCEQ SOP V1	00078	NA*	NA	NA	NA	NA	Field
SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C)	us/cm	water	EPA 120.1 and TCEQ SOP, V1	00094	NA*	NA	NA	NA	NA	Field
OXYGEN, DISSOLVED (MG/L)	mg/L	water	SM 4500-O G and TCEQ SOP V1	00300	NA*	NA	NA	NA	NA	Field
PH (STANDARD UNITS)	s.u.	water	EPA 150.1 and TCEQ SOP V1	00400	NA*	NA	NA	NA	NA	Field
SALINITY - PARTS PER THOUSAND	PPT	water	SM 2520 and TCEQ SOP V1	00480	NA*	NA	NA	NA	NA	Field
DAYS SINCE PRECIPITATION EVENT (DAYS)	days	other	TCEQ SOP V1	72053	NA*	NA	NA	NA	NA	Field
DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE	meters	water	TCEQ SOP V2	82903	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL WIDTH AT TIME OF STUDY (METERS)***	meters	other	TCEQ SOP V2	89864	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL DEPTH AT TIME OF STUDY(METERS)***	meters	other	TCEQ SOP V2	89865	NA*	NA	NA	NA	NA	Field
POOL LENGTH, METERS***	meters	other	TCEQ SOP V2	89869	NA*	NA	NA	NA	NA	Field
% POOL COVERAGE IN 500 METER REACH***	%	other	TCEQ SOP V2	89870	NA*	NA	NA	NA	NA	Field
WIND INTENSITY (1=CALM,2=SLIGHT,3=MOD,4=STRONG)	NU	other	NA	89965	NA	NA	NA	NA	NA	Field
PRESENT WEATHER (1=CLEAR,2=PTCLDY,3=CLDY,4=RAIN,5=OTHER)	NU	other	NA	89966	NA	NA	NA	NA	NA	Field
WATER SURFACE(1=CALM,2=RIPPLE,3=WAVE,4=WHIT ECAP)	NU	water	NA	89968	NA	NA	NA	NA	NA	Field
TIDE STAGE (1=LOW,2=FALLING,3=SLACK,4=RISING,5=HI)	NU	water	NA	89972	NA	NA	NA	NA	NA	Field
WATER COLOR (1=BROWNISH, 2=REDDISH, 3=GREENISH, 4=BLACKISH, 5=CLEAR, 6=OTHER)	NU	water	NA	89969	NA	NA	NA	NA	NA	Field
WATER ODOR (1=SEWAGE, 2=OILY/CHEMICAL, 3=ROTTEN EGG, 4=MUSKY, 5=FISHY, 6=NONE, 7=OTHER)	NU	water	NA	89971	NA	NA	NA	NA	NA	Field
PRIMARY CONTACT, OBSERVED ACTIVITY (# OF PEOPLE OBSERVED)	# of people observed	other	NA	89978	NA	NA	NA	NA	NA	Field
EVIDENCE OF PRIMARY CONTACT RECREATION (1 = OBSERVED, 0 = NOT OBSERVED)	NU	other	NA	89979	NA	NA	NA	NA	NA	Field

* Reporting to be consistent with SWQM guidance and based on measurement capability.
 *** To be routinely reported when collecting data from perennial pools.

References:
 United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
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 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1c Measurement Performance Specifications for City of Houston, Health & Human Services (HHS)

Flow Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
FLOW STREAM, INSTANTANEOUS (CUBIC FEET PER SEC)	cfs	water	TCEQ SOP V1	00061	NA*	NA	NA	NA	NA	Field
FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High,6=Dry	NU	water	TCEQ SOP V1	01351	NA*	NA	NA	NA	NA	Field
STREAM FLOW ESTIMATE (CFS)	cfs	Water	TCEQ SOP V1	74069	NA*	NA	NA	NA	NA	Field
FLOW MTH 1=GAGE 2=ELEC 3=MECH 4=WEIR/FLU 5=DOPPLER	NU	other	TCEQ SOP V1	89835	NA*	NA	NA	NA	NA	Field

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
 TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1c Measurement Performance Specifications for City of Houston, Health & Human Services (HHS)

Conventional Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540 D	00530	4	4	NA	NA	NA	Holcombe
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	SM 4500 NH ₃ -H	00610	0.1	0.1	70-130	20	80-120	Holcombe
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	SM 4500-N _{org} C and SM 4500-NH ₃ B	00625	0.2	0.2	70-130	20	80-120	Eastex
NITRATE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00620	0.05	0.02	70-130	20	80-120	Holcombe
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	EPA 365.1	00665	0.06	0.02	70-130	20	80-120	Holcombe
CHLORIDE (MG/L AS CL)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00940	5	5	70-130	20	80-120	Holcombe
SULFATE (MG/L AS SO ₄)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00945	5	5	70-130	20	80-120	Holcombe

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

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TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1c Measurement Performance Specifications for City of Houston, Health & Human Services (HHS)

Bacteriological Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	Colilert-18 **	31699	1	1	NA	0.50*	NA	Holcombe
ENTEROCOCCI, ENTEROLERT, IDEXX, (MPN/100 ML)	MPN/100 mL	water	Enterolert	31701	10***	10	NA	0.50*	NA	Holcombe
E.COLI, COLILERT, IDEXX, HOLDING TIME	hours	water	NA	31704	NA	NA	NA	NA	NA	Holcombe

* This value is not expressed as a relative percent difference. It represents the maximum allowable difference between the logarithm of the result of a sample and the logarithm of the duplicate result. See Section B5.

** E.coli samples analyzed by IDEXX Colilert-18 should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery longer than 6 hours, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

***Enterococcus Samples should be diluted 1:10 for all waters.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

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TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1d Measurement Performance Specifications for City of Houston, Water Quality Control (WQC)

Field Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
TEMPERATURE, WATER (DEGREES CENTIGRADE)	DEG C	water	SM 2550 B and TCEQ SOP V1	00010	NA*	NA	NA	NA	NA	Field
TRANSPARENCY, SECCHI DISC (METERS)	meters	water	TCEQ SOP V1	00078	NA*	NA	NA	NA	NA	Field
SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C)	us/cm	water	EPA 120.1 and TCEQ SOP, V1	00094	NA*	NA	NA	NA	NA	Field
OXYGEN, DISSOLVED (MG/L)	mg/L	water	SM 4500-O G and TCEQ SOP V1	00300	NA*	NA	NA	NA	NA	Field
PH (STANDARD UNITS)	s.u.	water	EPA 150.1 and TCEQ SOP V1	00400	NA*	NA	NA	NA	NA	Field
DAYS SINCE PRECIPITATION EVENT (DAYS)	days	other	TCEQ SOP V1	72053	NA*	NA	NA	NA	NA	Field
DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE	meters	water	TCEQ SOP V2	82903	NA*	NA	NA	NA	NA	Field
RESERVOIR STAGE (FEET ABOVE MEAN SEA LEVEL)†	FT ABOVE MSL	water	TWDB	00052	NA*	NA	NA	NA	NA	Field
RESERVOIR PERCENT FULL†	% RESERVOIR CAPACITY	water	TWDB	00053	NA*	NA	NA	NA	NA	Field
RESERVOIR ACCESS NOT POSSIBLE LEVEL TOO LOW ENTER 1 IF REPORTING	NS	other	TCEQ Drought Guidance	00051	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL WIDTH AT TIME OF STUDY (METERS)***	meters	other	TCEQ SOP V2	89864	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL DEPTH AT TIME OF STUDY(METERS)***	meters	other	TCEQ SOP V2	89865	NA*	NA	NA	NA	NA	Field
POOL LENGTH, METERS***	meters	other	TCEQ SOP V2	89869	NA*	NA	NA	NA	NA	Field
% POOL COVERAGE IN 500 METER REACH***	%	other	TCEQ SOP V2	89870	NA*	NA	NA	NA	NA	Field
WIND INTENSITY (1=CALM,2=SLIGHT,3=MOD.,4=STRONG)	NU	other	NA	89965	NA	NA	NA	NA	NA	Field
PRESENT WEATHER (1=CLEAR,2=PTCLDY,3=CLDY,4=RAIN,5=OTHER)	NU	other	NA	89966	NA	NA	NA	NA	NA	Field
WATER SURFACE(1=CALM,2=RIPPLE,3=WAVE,4=WHIT ECAP)	NU	water	NA	89968	NA	NA	NA	NA	NA	Field
WATER COLOR (1=BROWNISH, 2=REDDISH, 3=GREENISH, 4=BLACKISH, 5=CLEAR, 6=OTHER)	NU	water	NA	89969	NA	NA	NA	NA	NA	Field
WATER ODOR (1=SEWAGE, 2=OILY/CHEMICAL, 3=ROTTEN EGG, 4=MUSKY, 5=FISHY, 6=NONE, 7=OTHER)	NU	water	NA	89971	NA	NA	NA	NA	NA	Field
TRUBIDITY, OBSERVED (1=LOW, 2=MEDIUM, 3=HIGH)	NU	water	NA	88842	NA	NA	NA	NA	NA	Field
PRIMARY CONTACT, OBSERVED ACTIVITY (# OF PEOPLE OBSERVED)	# of people observed	other	NA	89978	NA	NA	NA	NA	NA	Field
EVIDENCE OF PRIMARY CONTACT RECREATION (1 = OBSERVED, 0 = NOT OBSERVED)	NU	other	NA	89979	NA	NA	NA	NA	NA	Field

* Reporting to be consistent with SWQM guidance and based on measurement capability.

*** To be routinely reported when collecting data from perennial pools.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
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TABLE A7.1d Measurement Performance Specifications for City of Houston, Water Quality Control (WQC)

Flow Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
FLOW STREAM, INSTANTANEOUS (CUBIC FEET PER SEC)	cfs	water	TCEQ SOP V1	00061	NA*	NA	NA	NA	NA	Field
FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High,6=Dry	NU	water	TCEQ SOP V1	01351	NA*	NA	NA	NA	NA	Field
STREAM FLOW ESTIMATE (CFS)	cfs	Water	TCEQ SOP V1	74069	NA*	NA	NA	NA	NA	Field
FLOW MTH 1=GAGE 2=ELEC 3=MECH 4=WEIR/FLU 5=DOPPLER	NU	other	TCEQ SOP V1	89835	NA*	NA	NA	NA	NA	Field

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
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 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1d Measurement Performance Specifications for City of Houston, Water Quality Control (WQC)

Conventional Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540 D	00530	5	4	NA	NA	NA	WQC
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	EPA 350.3	00610	0.1	0.1	70-130	20	80-120	WQC
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	SM 4500-N _{org} C and SM 4500-NH ₃ B	00625	0.2	0.2	70-130	20	80-120	Eastex
NITRATE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0	00620	0.05	0.04	70-130	20	80-120	WQC
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	EPA 365.3	00665	0.06	0.02	70-130	20	80-120	WQC
CHLORIDE (MG/L AS CL)	mg/L	water	EPA 300.0	00940	5	5	70-130	20	80-120	WQC
SULFATE (MG/L AS SO ₄)	mg/L	water	EPA 300.0	00945	5	5	70-130	20	80-120	WQC
CHLOROPHYLL-A UG/L	ug/L	water	EPA 446.0	32211	3	3	NA	20	80-120	Eastex
SPECTROPHOTOMETRIC ACID. METH	ug/L	water	EPA 446.0	32211	3	3	NA	20	80-120	Eastex
ALKALINITY, TOTAL (MG/L AS CaCO ₃)	mg/L	water	SM 2320B	00410	20	20	NA	20	NA	WQC

*Hardness is not used for regulatory purposes but is used to assess metals in water at inland sites (estuarine sites do not require hardness analysis).

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).

TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1d Measurement Performance Specifications for City of Houston, Water Quality Control (WQC)

Bacteriological Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	Colilert-18**	31699	1	1	NA	0.50*	NA	WQC
ENTEROCOCCI, ENTEROLERT, IDEXX, (MPN/100 ML)	MPN/100 mL	water	Enterolert	31701	10***	10	NA	0.50*	NA	WQC
E.COLI, COLILERT, IDEXX, HOLDING TIME	hours	water	NA	31704	NA	NA	NA	NA	NA	WQC

* This value is not expressed as a relative percent difference. It represents the maximum allowable difference between the logarithm of the result of a sample and the logarithm of the duplicate result. See Section B5.

** E.coli samples analyzed by IDEXX Colilert-18 should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery longer than 6 hours, the holding time may be extended and samples must be processed as soon as possible and within 48 30 hours.

***Enterococcus Samples should be diluted 1:10 for all waters.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

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TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1e Measurement Performance Specifications for San Jacinto River Authority - Lake Conroe samples (SJRA-LC)

Field Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
TEMPERATURE, WATER (DEGREES CENTIGRADE)	DEG C	water	SM 2550 B and TCEQ SOP V1	00010	NA*	NA	NA	NA	NA	Field
TRANSPARENCY, SECCHI DISC (METERS)	meters	water	TCEQ SOP V1	00078	NA*	NA	NA	NA	NA	Field
SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C)	us/cm	water	EPA 120.1 and TCEQ SOP, V1	00094	NA*	NA	NA	NA	NA	Field
OXYGEN, DISSOLVED (MG/L)	mg/L	water	SM 4500-O G and TCEQ SOP V1	00300	NA*	NA	NA	NA	NA	Field
PH (STANDARD UNITS)	s.u.	water	EPA 150.1 and TCEQ SOP V1	00400	NA*	NA	NA	NA	NA	Field
DAYS SINCE PRECIPITATION EVENT (DAYS)	days	other	TCEQ SOP V1	72053	NA*	NA	NA	NA	NA	Field
DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE	meters	water	TCEQ SOP V2	82903	NA*	NA	NA	NA	NA	Field
RESERVOIR STAGE (FEET ABOVE MEAN SEA LEVEL)†	FT ABOVE MSL	water	TWDB	00052	NA*	NA	NA	NA	NA	Field
RESERVOIR PERCENT FULL†	% RESERVOIR CAPACITY	water	TWDB	00053	NA*	NA	NA	NA	NA	Field
RESERVOIR ACCESS NOT POSSIBLE LEVEL TOO LOW ENTER 1 IF REPORTING	NS	other	TCEQ Drought Guidance	00051	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL WIDTH AT TIME OF STUDY (METERS)***	meters	other	TCEQ SOP V2	89864	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL DEPTH AT TIME OF STUDY(METERS)***	meters	other	TCEQ SOP V2	89865	NA*	NA	NA	NA	NA	Field
POOL LENGTH, METERS***	meters	other	TCEQ SOP V2	89869	NA*	NA	NA	NA	NA	Field
% POOL COVERAGE IN 500 METER REACH***	%	other	TCEQ SOP V2	89870	NA*	NA	NA	NA	NA	Field
WIND INTENSITY (1=CALM,2=SLIGHT,3=MOD,4=STRONG)	NU	other	NA	89965	NA	NA	NA	NA	NA	Field
PRESENT WEATHER (1=CLEAR,2=PTCLDY,3=CLDY,4=RAIN,5=OTHER)	NU	other	NA	89966	NA	NA	NA	NA	NA	Field
WATER SURFACE(1=CALM,2=RIPPLE,3=WAVE,4=WHIT ECAP)	NU	water	NA	89968	NA	NA	NA	NA	NA	Field
WATER COLOR (1=BROWNISH, 2=REDDISH, 3=GREENISH, 4=BLACKISH, 5=CLEAR, 6=OTHER)	NU	water	NA	89969	NA	NA	NA	NA	NA	Field
WATER ODOR (1=SEWAGE, 2=OILY/CHEMICAL, 3=ROTTEN EGG, 4=MUSKY, 5=FISHY, 6=NONE, 7=OTHER)	NU	water	NA	89971	NA	NA	NA	NA	NA	Field
PRIMARY CONTACT, OBSERVED ACTIVITY (# OF PEOPLE OBSERVED)	# of people observed	other	NA	89978	NA	NA	NA	NA	NA	Field
EVIDENCE OF PRIMARY CONTACT RECREATION (1 = OBSERVED, 0 = NOT OBSERVED)	NU	other	NA	89979	NA	NA	NA	NA	NA	Field

* Reporting to be consistent with SWQM guidance and based on measurement capability.
 *** To be routinely reported when collecting data from perennial pools.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
 TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007

TABLE A7.1e Measurement Performance Specifications for San Jacinto River Authority - Lake Conroe samples (SJRA-LC)

Conventional Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540 D	00530	5	4	NA	NA	NA	WQC
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	EPA 350.3	00610	0.1	0.1	70-130	20	80-120	WQC
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	SM 4500-N _{org} C and SM 4500-NH3 B	00625	0.2	0.2	70-130	20	80-120	Eastex
NITRATE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00620	0.05	0.04	70-130	20	80-120	WQC
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	EPA 365.3	00665	0.06	0.02	70-130	20	80-120	WQC
CHLORIDE (MG/L AS CL)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00940	5	5	70-130	20	80-120	WQC
SULFATE (MG/L AS SO4)	mg/L	water	EPA 300.0 Rev. 2.1 (1993)	00945	5	5	70-130	20	80-120	WQC
CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH	ug/L	water	EPA 446.0	32211	3	3	NA	20	80-120	Eastex
ALKALINITY, TOTAL (MG/L AS CaCO3)	mg/L	water	SM 2320B	00410	20	20	NA	20	NA	WQC

*Hardness is not used for regulatory purposes but is used to assess metals in water at inland sites (estuarine sites do not require hardness analysis).

References:

- United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
- American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
- TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
- TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1e Measurement Performance Specifications for San Jacinto River Authority - Lake Conroe samples (SJRA-LC)

Bacteriological Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	Colilert-18**	31699	1	1	NA	0.50*	NA	WQC
E.COLI, COLILERT, IDEXX, HOLDING TIME	hours	water	NA	31704	NA	NA	NA	NA	NA	WQC

* This value is not expressed as a relative percent difference. It represents the maximum allowable difference between the logarithm of the result of a sample and the logarithm of the duplicate result. See Section B5.

** E.coli samples analyzed by IDEXX Colilert-18 should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery longer than 6 hours, the holding time may be extended and samples must be processed as soon as possible and within 48 30 hours.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

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TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1f Measurement Performance Specifications for San Jacinto River Authority - samples from The Woodlands (SIRA-W)

Field Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
TEMPERATURE, WATER (DEGREES CENTIGRADE)	DEG C	water	SM 2550 B and TCEQ SOP V1	00010	NA*	NA	NA	NA	NA	Field
TRANSPARENCY, SECCHI DISC (METERS)	meters	water	TCEQ SOP V1	00078	NA*	NA	NA	NA	NA	Field
SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C)	us/cm	water	EPA 120.1 and TCEQ SOP, V1	00094	NA*	NA	NA	NA	NA	Field
OXYGEN, DISSOLVED (MG/L)	mg/L	water	SM 4500-O G and TCEQ SOP V1	00300	NA*	NA	NA	NA	NA	Field
PH (STANDARD UNITS)	s.u.	water	EPA 150.1 and TCEQ SOP V1	00400	NA*	NA	NA	NA	NA	Field
DAYS SINCE PRECIPITATION EVENT (DAYS)	days	other	TCEQ SOP V1	72053	NA*	NA	NA	NA	NA	Field
DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE	meters	water	TCEQ SOP V2	82903	NA*	NA	NA	NA	NA	Field
RESERVOIR STAGE (FEET ABOVE MEAN SEA LEVEL)†	FT ABOVE MSL	water	TWDB	00052	NA*	NA	NA	NA	NA	Field
RESERVOIR PERCENT FULL†	% RESERVOIR CAPACITY	water	TWDB	00053	NA*	NA	NA	NA	NA	Field
RESERVOIR ACCESS NOT POSSIBLE LEVEL TOO LOW ENTER 1 IF REPORTING	NS	other	TCEQ Drought Guidance	00051	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL WIDTH AT TIME OF STUDY (METERS)***	meters	other	TCEQ SOP V2	89864	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL DEPTH AT TIME OF STUDY(METERS)***	meters	other	TCEQ SOP V2	89865	NA*	NA	NA	NA	NA	Field
POOL LENGTH, METERS***	meters	other	TCEQ SOP V2	89869	NA*	NA	NA	NA	NA	Field
% POOL COVERAGE IN 500 METER REACH***	%	other	TCEQ SOP V2	89870	NA*	NA	NA	NA	NA	Field
PRESENT WEATHER (1=CLEAR,2=PTCLDY,3=CLDY,4=RAIN,5=OTHER)	NU	other	NA	89956	NA	NA	NA	NA	NA	Field
WATER COLOR (1=BROWNISH, 2=REDDISH, 3=GREENISH, 4=BLACKISH, 5=CLEAR, 6=OTHER)	NU	water	NA	89969	NA	NA	NA	NA	NA	Field
WATER ODOR (1=SEWAGE, 2=OILY/CHEMICAL, 3=ROTTEN EGG, 4=MUSKY, 5=FISHY, 6=NONE, 7=OTHER)	NU	water	NA	89971	NA	NA	NA	NA	NA	Field
PRIMARY CONTACT, OBSERVED ACTIVITY (# OF PEOPLE OBSERVED)	# of people observed	other	NA	89978	NA	NA	NA	NA	NA	Field
EVIDENCE OF PRIMARY CONTACT RECREATION (1 = OBSERVED, 0 = NOT OBSERVED)	NU	other	NA	89979	NA	NA	NA	NA	NA	Field

* Reporting to be consistent with SWQM guidance and based on measurement capability.
 *** To be routinely reported when collecting data from perennial pools.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
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 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1f Measurement Performance Specifications for San Jacinto River Authority - samples from The Woodlands (SJ)

Flow Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
FLOW STREAM, INSTANTANEOUS (CUBIC FEET PER SEC)	cfs	water	TCEQ SOP V1	00061	NA*	NA	NA	NA	NA	Field
FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High,6=Dry	NU	water	TCEQ SOP V1	01351	NA*	NA	NA	NA	NA	Field
STREAM FLOW ESTIMATE (CFS)	cfs	Water	TCEQ SOP V1	74069	NA*	NA	NA	NA	NA	Field
FLOW MTH 1=GAGE 2=ELEC 3=MECH 4=WEIR/FLU 5=DOPPLER	NU	other	TCEQ SOP V1	89835	NA*	NA	NA	NA	NA	Field

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
 TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1f Measurement Performance Specifications for San Jacinto River Authority - samples from The Woodlands (SJRA-W)

Conventional Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540 D	00530	5	1	NA	NA	NA	Eastex
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	SM 4500 NH3 - G	00610	0.1	0.1	70-130	20	80-120	Eastex
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	SM 4500-N _{org} C and SM 4500 NH3 B	00625	0.2	0.2	70-130	20	80-120	Eastex
NITRATE NITROGEN, TOTAL (MG/L AS N)	mg/L	water	SM 4500-NO3 F	00620	0.05	0.04	70-130	20	80-120	Eastex
NITRITE PLUS NITRATE, TOTAL ONE LAB DETERMINED VALUE (MG/L AS N)	mg/L	water	SM 4500-NO3 F	00630	0.05	0.02	70-130	20	80-120	Eastex
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	SM 4500-P E	00665	0.06	0.02	70-130	20	80-120	Eastex
CHLORIDE (MG/L AS CL)	mg/L	water	SM 4500 Cl- C	00940	5	5	70-130	20	80-120	Eastex
SULFATE (MG/L AS SO4)	mg/L	water	ASTM D516	00945	5	5	70-130	20	80-120	Eastex
CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH	ug/L	water	EPA 446.0	32211	3	3	NA	20	80-120	Eastex

*Hardness is not used for regulatory purposes but is used to assess metals in water at inland sites (estuarine sites do not require hardness analysis).

References:

- United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
- American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
- TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
- TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1f Measurement Performance Specifications for San Jacinto River Authority - samples from The Woodlands (SJRA-W)

Bacteriological Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	Colilert-18 **	31699	1	1	NA	0.50*	NA	Eastex
ENTEROCOCCI, ENTEROLERT, IDEXX, (MPN/100 ML)	MPN/100 mL	water	Enterolert	31701	10***	10	NA	0.50*	NA	Eastex
E. COLI, COLILERT, IDEXX, HOLDING TIME	hours	water	NA	31704	NA	NA	NA	NA	NA	Eastex

* This value is not expressed as a relative percent difference. It represents the maximum allowable difference between the logarithm of the result of a sample and the logarithm of the duplicate result. See Section B5.

** E.coli samples analyzed by IDEXX Colilert-18 should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery longer than 6 hours, the holding time may be extended and samples must be processed as soon as possible and within 48 30 hours.

***Enterococcus Samples should be diluted 1:10 for all waters.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

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TABLE A7.1f Measurement Performance Specifications for San Jacinto River Authority - samples from The Woodlands (SJRA-W)

Metals in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
HARDNESS, TOTAL (MG/L AS CaCO3)*	mg/L	water	SM 2340 C	00900	5	5	NA	20	80-120	Eastex
COPPER, TOTAL (UG/L AS CU)	µg/L	water	EPA 200.7	01042	NA	10	70-130	20	80-120	Eastex
SELENIUM, TOTAL (UG/L AS SE)	ug/L	water	EPA 200.7	01147	2	2	70-130	20	80-120	Eastex

*Hardness is not used for regulatory purposes but is used to assess metals in water at inland sites (estuarine sites do not require hardness analysis).

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

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TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1g Measurement Performance Specifications for Environmental Institute of Houston (EIH)

Field Parameters										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
TEMPERATURE, WATER (DEGREES CENTIGRADE)	DEG C	water	SM 2550 B and TCEQ SOP V1	00010	NA*	NA	NA	NA	NA	Field
TRANSPARENCY, SECCHI DISC (METERS)	meters	water	TCEQ SOP V1	00078	NA*	NA	NA	NA	NA	Field
SPECIFIC CONDUCTANCE, FIELD (US/CM @ 25C)	us/cm	water	EPA 120.1 and TCEQ SOP, V1	00094	NA*	NA	NA	NA	NA	Field
OXYGEN, DISSOLVED (MG/L)	mg/L	water	SM 4500-O G and TCEQ SOP V1	00300	NA*	NA	NA	NA	NA	Field
PH (STANDARD UNITS)	s.u.	water	EPA 150.1 and TCEQ SOP V1	00400	NA*	NA	NA	NA	NA	Field
SALINITY - PARTS PER THOUSAND	PPT	water	SM 2520 and TCEQ SOP V1	00480	NA*	NA	NA	NA	NA	Field
DAYS SINCE PRECIPITATION EVENT (DAYS)	days	other	TCEQ SOP V1	72053	NA*	NA	NA	NA	NA	Field
DEPTH OF BOTTOM OF WATER BODY AT SAMPLE SITE	meters	water	TCEQ SOP V2	82903	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL WIDTH AT TIME OF STUDY (METERS)***	meters	other	TCEQ SOP V2	89864	NA*	NA	NA	NA	NA	Field
MAXIMUM POOL DEPTH AT TIME OF STUDY(METERS)***	meters	other	TCEQ SOP V2	89865	NA*	NA	NA	NA	NA	Field
POOL LENGTH, METERS***	meters	other	TCEQ SOP V2	89869	NA*	NA	NA	NA	NA	Field
% POOL COVERAGE IN 500 METER REACH***	%	other	TCEQ SOP V2	89870	NA*	NA	NA	NA	NA	Field
WIND INTENSITY (1=CALM,2=SLIGHT,3=MOD.,4=STRONG)	NU	other	NA	89965	NA	NA	NA	NA	NA	Field
PRESENT WEATHER (1=CLEAR,2=PTCLDY,3=CLDY,4=RAIN,5=OTHER)	NU	other	NA	89966	NA	NA	NA	NA	NA	Field
WATER SURFACE(1=CALM,2=RIPPLE,3=WAVE,4=WHIT ECAP)	NU	water	NA	89968	NA	NA	NA	NA	NA	Field
TIDE STAGE (1=LOW,2=FALLING,3=SLACK,4=RIISING,5=HI)	NU	water	NA	89972	NA	NA	NA	NA	NA	Field
WATER COLOR (1=BROWNISH, 2=REDDISH, 3=GREENISH, 4=BLACKISH, 5=CLEAR, 6=OTHER)	NU	water	NA	89969	NA	NA	NA	NA	NA	Field
WATER ODOR (1=SEWAGE, 2=OILY/CHEMICAL, 3=ROTTEN EGG, 4=MUSKY, 5=FISHY, 6=NONE, 7=OTHER)	NU	water	NA	89971	NA	NA	NA	NA	NA	Field
PRIMARY CONTACT, OBSERVED ACTIVITY (# OF PEOPLE OBSERVED)	# of people observed	other	NA	89978	NA	NA	NA	NA	NA	Field
EVIDENCE OF PRIMARY CONTACT RECREATION (1 = OBSERVED, 0 = NOT OBSERVED)	NU	other	NA	89979	NA	NA	NA	NA	NA	Field

* Reporting to be consistent with SWQM guidance and based on measurement capability.
 *** To be routinely reported when collecting data from perennial pools.

References:
 United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
 American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
 TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
 TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1g Measurement Performance Specifications for Environmental Institute of Houston (EIH)**Flow Parameters**

Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
FLOW STREAM, INSTANTANEOUS (CUBIC FEET PER SEC)	cfs	water	TCEQ SOP V1	00061	NA*	NA	NA	NA	NA	Field
FLOW SEVERITY:1=No Flow,2=Low,3=Normal,4=Flood,5=High, 6=Dry	NU	water	TCEQ SOP V1	01351	NA*	NA	NA	NA	NA	Field
STREAM FLOW ESTIMATE (CFS)	cfs	Water	TCEQ SOP V1	74069	NA*	NA	NA	NA	NA	Field
FLOW MTH 1=GAGE 2=ELEC 3=MECH 4=WEIR/FLU 5=DOPPLER	NU	other	TCEQ SOP V1	89835	NA*	NA	NA	NA	NA	Field

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).

TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1g Measurement Performance Specifications for Environmental Institute of Houston (EIH)

Conventional Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
RESIDUE, TOTAL NONFILTRABLE (MG/L)	mg/L	water	SM 2540 D	00530	5	1	NA	NA	NA	Eastex
NITROGEN, AMMONIA, TOTAL (MG/L AS N)	mg/L	water	SM 4500 NH3 - G	00610	0.1	0.1	70-130	20	80-120	Eastex
NITROGEN, KJELDAHL, TOTAL (MG/L AS N)	mg/L	water	SM 4500-N _{org} C and SM 4500-NH3 B	00625	0.2	0.2	70-130	20	80-120	Eastex
NITRITE PLUS NITRATE, TOTAL 1 DET. (MG/L AS N)	mg/L	water	SM 4500-NO3 - F	00630	0.05	0.02	70-130	20	80-120	Eastex
PHOSPHORUS, TOTAL, WET METHOD (MG/L AS P)	mg/L	water	SM 4500-P E	00665	0.06	0.02	70-130	20	80-120	Eastex
HARDNESS, TOTAL (MG/L AS CaCO3)*	mg/L	water	SM 2340 C	00900	5	5	NA	20	80-120	Eastex
CHLORIDE (MG/L AS CL)	mg/L	water	SM 4500 Cl- C	00940	5	5	70-130	20	80-120	Eastex
SULFATE (MG/L AS SO4)	mg/L	water	ASTM D516	00945	5	5	70-130	20	80-120	Eastex
CHLOROPHYLL-A UG/L SPECTROPHOTOMETRIC ACID. METH	ug/L	water	EPA 446.0	32211	3	3	NA	20	80-120	Eastex
TURBIDITY, LAB NEPHELOMETRIC TURBIDITY UNITS, NTU	NTU	water	SM 2130B	82079	0.5	0.5	NA	NA	NA	Eastex

*Hardness is not used for regulatory purposes but is used to assess metals in water at inland sites (estuarine sites do not require hardness analysis).

References:

- United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020
- American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)
- TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).
- TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

TABLE A7.1g Measurement Performance Specifications for Environmental Institute of Houston (EIH)

Bacteriological Parameters in Water										
Parameter	Units	Matrix	Method	Parameter Code	AWRL	LOQ	LOQ Check Sample %Rec	Precision (RPD of LCS/LCSD)	Bias %Rec. of LCS	Lab
E. COLI, COLILERT, IDEXX METHOD, MPN/100ML	MPN/100 mL	water	Colilert-18 **	31699	1	1	NA	0.50*	NA	Eastex
ENTEROCOCCI, ENTEROLERT, IDEXX, (MPN/100 ML)	MPN/100 mL	water	Enterolert	31701	10***	10	NA	0.50*	NA	Eastex
E.COLI, COLILERT, IDEXX, HOLDING TIME	hours	water	NA	31704	NA	NA	NA	NA	NA	Eastex

* This value is not expressed as a relative percent difference. It represents the maximum allowable difference between the logarithm of the result of a sample and the logarithm of the duplicate result. See Section B5.

** E. coli samples analyzed by IDEXX Colilert-18 should always be processed as soon as possible and within 8 hours. When transport conditions necessitate delays in delivery longer than 6 hours, the holding time may be extended and samples must be processed as soon as possible and within 30 hours.

***Enterococcus Samples should be diluted 1:10 for all waters.

References:

United States Environmental Protection Agency (USEPA) Methods for Chemical Analysis of Water and Wastes, Manual #EPA-600/4-79-020

American Public Health Association (APHA), American Water Works Association (AWWA), and Water Environment Federation (WEF), Standard Methods for the Examination of Water and Wastewater, 20th Edition, 1998. (Note: The 21st edition may be cited if it becomes available.)

TCEQ SOP, V1 - TCEQ Surface Water Quality Monitoring Procedures, Volume 1: Physical and Chemical Monitoring Methods, 2012 (RG-415).

TCEQ SOP, V2 - TCEQ Surface Water Quality Monitoring Procedures, Volume 2: Methods for Collecting and Analyzing Biological Assemblage and Habitat Data, 2007 (RG-416)

Appendix B: Sampling Process Design and Monitoring Schedule (plan)

Sample Design Rationale FY 2015

The sample design is based on the legislative intent of CRP. Under the legislation, the Basin Planning Agencies have been tasked with providing data to characterize water quality conditions in support of the Texas Water Quality Integrated Report, and to identify significant long-term water quality trends. Based on Steering Committee input, achievable water quality objectives and priorities and the identification of water quality issues are used to develop work plans which are in accord with available resources. As part of the Steering Committee process, the H-GAC coordinates closely with the TCEQ and other participants to ensure a comprehensive water monitoring strategy within the watershed.

Beginning in September 2014, the following changes in sampling locations will be made to the Coordinated Monitoring Schedule for FY2015. These sites were identified at the Coordinated Monitoring Meeting conducted on April 1, 2014, and agreed upon in subsequent conversations with local partners and steering committee members. However, changes to parameters at some sites will be implemented due to budgetary constraints. There were no changes in monitoring frequencies. Field, conventional, nutrients and bacteria will be collected as listed in each partner's A7.1 tables.

The following items were changes made to the Environmental Institute of Houston – UHCL (EIH) monitoring schedule:

- ADD site 16485 (Jarbo Bayou at Lawrence Road) to make additional monitoring location on Jarbo Bayou to support TMDL and WPP activities. Site will be monitored quarterly.
- DROP site 20477 (Unnamed tributary of Dickinson Bayou at Avenue L) to move resources to Jarbo Bayou. TCEQ Region 12 agreed to pick up site since EIH was adding Jarbo Bayou site.

The following items were changes made to the San Jacinto River Authority (SJRA) – Lake Conroe and Woodlands Divisions monitoring schedule:

- MOVE site 16627 upstream to footbridge for easier access to water. Changed station location lat/long and description. Monitoring frequency remains the same.
- DROP site 16628 (Lower Panther Branch 91 M downstream of Sawdust Rd) because banks too steep to safely access water.
- ADD site 16422 (Panther Branch 295 M downstream of Sawdust Road in The Woodlands). Downstream of a confluence and more accessibility to stream.

There were no changes in frequency of sample collection or parameters analyzed.

Monitoring Sites for FY 2015

The sample design for SWQM is shown in Table B1.1 in the attached EXCEL spreadsheet.

Critical vs. non-critical measurements

All data collected under this QAPP and entered into SWQMIS are considered critical.

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
SAN JACINTO RIVER TIDAL 23 METERS SOUTH AND 735 METERS EAST OF INTERSECTION OF WALLISVILLE ROAD AND 7TH STREET	11198	1001	10	12	HG	HC	RT	12	12	12				
SAN JACINTO RIVER TIDAL AT BANANA BEND ROAD AT END OF PAVEMENT IN HOUSTON	16622	1001	10	12	HG	HC	RT	12	12	12				
SAN JACINTO RIVER TIDAL AT MAGNOLIA GARDENS 1.78 KM UPSTREAM OF US BUS 90U/ BEAUMONT HIGHWAY IN HOUSTON	11201	1001	10	12	HG	HC	RT	12	12	12				
SAN JACINTO RIVER TIDAL IMMEDIATELY DOWNSTREAM OF IH 10 BRIDGE EAST OF CHANNELVIEW	11193	1001	10	12	HG	HC	RT	12	12	12				
SAN JACINTO RIVER TIDAL IMMEDIATELY DOWNSTREAM OF US 90 BRIDGE EAST OF SHELDON	11200	1001	10	12	HG	HC	RT	12	12	12				
SAN JACINTO RIVER TIDAL MID STREAM AT TERMINUS OF SHADY LANE IN CHANNELVIEW 9 M S AND 648 M W OF INTERSECTION OF SHADY LN AND PARK DR	17919	1001	10	12	HG	HC	RT	12	12	12				
HOUSTON SHIP CHANNEL AT BAYTOWN TUNNEL/CM 103 1.84 KM NORTH AND 1.17 KM EAST OF INTERSECTION OF SH 225 AND SH 146	11254	1005	10	12	HG	HC	RT	12	12	12				
HOUSTON SHIP CHANNEL AT LYNCHBURG FERRY INN SOUTH OF LYNCHBURG RD 658 M N AND 802 M E OF INTERSECTION OF BATTLEGROUND RD AND TIDAL RD	16619	1005	10	12	HG	HC	RT	12	12	12				
HOUSTON SHIP CHANNEL W OF EXXON DOCKS AND N OF ALEXANDER ISLAND 316 M S AND 1.55 KM W OF INTERSECTION OF BAYWAY DR AND BAYTOWN AVE	16618	1005	10	12	HG	HC	RT	12	12	12				
SAN JACINTO RIVER TIDAL AT CONFLUENCE WITH HSC 226 M S AND 1.07 KM W OF INTERSECTION OF S LYNCHBURG RD AND POQUENO RD IN HOUSTON	16621	1005	10	12	HG	HC	RT	12	12	12				
CARPENTERS BAYOU AT MOUTH OF BARGE CANAL 32 METERS WEST AND 666 METERS SOUTH FROM THE INTERSECTION OF DE ZAVALLA ROAD AND HARDING ROAD/HARDING STREET IN HARRIS COUNTY	20797	1006	10	12	HG	HC	RT	12	12	12				
HOUSTON SHIP CHANNEL AT CARGILL TERMINAL NORTH OF TIDAL ROAD	16617	1006	10	12	HG	HC	RT	12	12	12				
HOUSTON SHIP CHANNEL AT CONFLUENCE WITH GREENS BAYOU/CM 152	11271	1006	10	12	HG	HC	RT	12	12	12				
HOUSTON SHIP CHANNEL AT SAN JACINTO PK WEST OF THE BATTLESHIP TX 317 M N AND 303 M W OF INTERSECTION OF BATTLEGROUND RD AND MARKER DR	11264	1006	10	12	HG	HC	RT	12	12	12				
HOUSTON SHIP CHANNEL/BUFFALO BAYOU AT MAYO SHELL RD 1.42 KM S AND 41 M W OF INTERSECTION OF MAYO SHELL RD AND CLINTON DR IN HOUSTON	16620	1007	10	12	HG	HC	RT	12	12	12				

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
HOUSTON SHIP CHANNEL/BUFFALO BAYOU HSC AT WASHBURN TUNNEL	11283	1007	10	12	HG	HC	RT	12	12	12				
HSC/BUFFALO BAYOU IN TURNING BASIN 2.82 K UPSTREAM OF CONFLUENCE WITH BRAYS BAYOU 433 M S AND 182 M W OF INTERSECT OF SIGNET AND DORSETT	11292	1007	10	12	HG	HC	RT	12	12	12				
CLEAR CREEK TIDAL AT THE CONFLUENCE WITH CLEAR LAKE 30 M NORTH AND 266 M WEST OF DAVIS ROAD AT VEGA COURT IN LEAGUE CITY IN HARRIS COUNTY	16573	1101	11	12	HG	HC	RT	12	12	12				
ARMAND BAYOU TIDAL 25 M WEST OF CLEAR LAKE PARK FISHING PIER IN MUD LAKE/PASADENA LAKE IN HARRIS COUNTY	15455	1113	11	12	HG	HC	RT	12	12	12				
CLEAR LAKE AT SH 146 DRAWBRIDGE	13332	2425	24	12	HG	HC	RT	12	12	12				
CLEAR LAKE UNNAMED INLET 115 M SOUTHWEST OF THE INTERSECTION OF NASA ROAD 1 AND OCEANVIEW DRIVE IN SEABROOK IN HARRIS COUNTY	20014	2425	24	12	HG	HC	RT	12	12	12				
TABBS BAY MIDWAY BETWEEN GOOSE CREEK AND UPPER HOG ISLAND	13338	2426	24	12	HG	HC	RT	12	12	12				This site replaced site 17926
LOWER SAN JACINTO BAY MID CHANNEL SOUTH OF SH 146 1 KM NE OF INTERSECTION OF SH 225 AND STRANG ROAD IN LAPORTE	17924	2427	24	12	HG	HC	RT	12	12	12				
UPPER SAN JACINTO BAY UNDERNEATH ELECTRICAL TRANSMISSION LINES 2.1 KM E/NE OF INTERSECTION OF MILLER CUTOFF RD AND OLD CLARK RD	17923	2427	24	12	HG	HC	RT	12	12	12				
BLACK DUCK BAY AT MID BAY 0.6 KM NE OF SH 146 BRIDGE AND 0.6 KM SE OF END OF OKLAHOMA ST IN BAYTOWN	13340	2428	24	12	HG	HC	RT	12	12	12				
SCOTT BAY 1.2 KM SW OF INTERSECTION OF BAYWAY DRIVE AND PARK STREET IN BAYTOWN	17922	2429	24	12	HG	HC	RT	12	12	12				
BURNETT BAY AT MID BAY 1.3 KM SSW OF CONFLUENCE WITH SPRING GULLY AND 1.6 KM SE OF LYNCHBURG ROAD	13344	2430	24	12	HG	HC	RT	12	12	12				This site replaced site 17920
BARBOUR'S CUT NEAR NORTH BANK 0.5 KM NNW OF THE INTERSECTION OF BARBOURS CUT BLVD AND MAPLE ST	17925	2436	24	12	HG	HC	RT	12	12	12				
TAYLOR LAKE MID LAKE AT BLUE WINDOWS 230 M SOUTH OF LAKEWAY DRIVE AT RAY SHELL COURT/HARBOR COVE CIRCLE IN HARRIS COUNTY	20015	2425A	24	12	HG	HC	RT	12	12	12				
TAYLOR BAYOU MID CHANNEL 400 M DOWNSTREAM OF PORT ROAD BRIDGE IN HARRIS COUNTY	20013	2425D	24	12	HG	HC	RT	12	12	12				
HARRIS COUNTY FLOOD CONTROL DITCH A TRIBUTARY TO TAYLOR BAYOU 385 M UPSTREAM OF CONFLUENCE WEST OF SH 146 AT PORT ROAD IN HARRIS COUNTY	20012	2425E	24	12	HG	HC	RT	12	12	12				
GOOSE CREEK NEAR SH 146 0.4 KM S/W OF THE INTERSECTION OF SH 146 AND WEST MAIN IN BAYTOWN	17927	2426C	24	12	HG	HC	RT	12	12	12				

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
CRYSTAL BAY IN BAYTOWN 383 METERS WEST AND 137 METERS SOUTH OF THE INTERSECTION OF BAYSHORE DRIVE AND CROW ROAD	17921	2430A	24	12	HG	HC	RT	12	12	12				Change temporary id to 17921
CEDAR BAYOU TIDAL AT IH 10 EASTBOUND BRIDGE SOUTH OF MONT BELVIEU EAST SIDE OF BAYOU	11117	901	9	12	HG	HG	BS					4		Second year of 2-year effort to collect 24-hr DO.
CEDAR BAYOU TIDAL AT IH 10 EASTBOUND BRIDGE SOUTH OF MONT BELVIEU EAST SIDE OF BAYOU	11117	901	9	12	HG	HG	RT	4	4	4				
CEDAR BAYOU TIDAL MID CHANNEL 45 M DOWNSTREAM OF SH 146 NORTHEAST OF BAYTOWN	11115	901	9	12	HG	HG	RT	4	4	4				Site was added to HG monitoring schedule in Fall 2011
CEDAR BAYOU ABOVE TIDAL 30 M DOWNSTREAM OF FM 1942 AT EAST BANK	11118	902	9	12	HG	HG	RT	4	4	4	4			Site was added to HG monitoring schedule in Fall 2011
CEDAR BAYOU ABOVE TIDAL 45 M DOWNSTREAM OF FM 1960 NORTHEAST OF HUFFMAN	11123	902	9	12	HG	HG	BS				4	4		Added in 2012 for 2 years only
CEDAR BAYOU ABOVE TIDAL 45 M DOWNSTREAM OF FM 1960 NORTHEAST OF HUFFMAN	11123	902	9	12	HG	HG	RT	4	4	4	4			
EAST FORK SAN JACINTO RIVER IMMEDIATELY DOWNSTREAM OF SH 150 WEST OF COLDSRING	17431	1003	10	10	HG	HG	RT	4	4	4	4			Added site in FY11
WINTERS BAYOU AT TONY TAP ROAD NEAR CLEVELAND	21417	1003	10	10	HG	HG	RT	4	4	4	4			Site added in FY2014
WHITE OAK CREEK AT MEMORIAL DRIVE IN CONROE	20731	1004	10	12	HG	HG	RT	4	4	4	4			Added in FY13. Replaced site 11250.
SPRING CREEK AT ROBERTS CEMETERY ROAD WEST-NORTHWEST OF TOMBALL	18868	1008	10	12	HG	HG	RT	4	4	4	4			
CYPRESS CREEK AT KATY HOCKLEY ROAD 7 KILOMETERS SOUTH OF SH 290 WEST OF CYPRESS	20457	1009	10	12	HG	HG	RT	4	4	4	4			was HG167
CANEY CREEK AT COUNTY LINE ROAD IN MONTGOMERY COUNTY EAST TO THE CITY OF WILLIS	20453	1010	10	12	HG	HG	RT	4	4	4	4			was HG172
CANEY CREEK AT FIRETOWER ROAD WEST TO THE CITY OF WOODBRANCH	20452	1010	10	12	HG	HG	RT	4	4	4	4			was HG171
CANEY CREEK IMMEDIATELY UPSTREAM OF FM 2090 WEST OF SPLENDORA	11335	1010	10	12	HG	HG	RT	4	4	4	4			Site added in FY2012
PEACH CREEK AT COUNTY LINE ROAD-FM 3081 NORTHEAST OF CONROE IN MONTGOMERY COUNTY	20454	1011	10	12	HG	HG	RT	4	4	4	4			was HG173
LAKE CREEK AT EGYPT COMMUNITY ROAD 8.3 MILES SOUTHWEST OF CONROE	11367	1015	10	12	HG	HG	RT	4	4	4	4			
LAKE CREEK AT FM 149 APPROX 12.5 KM SOUTH OF MONTGOMERY TEXAS NEAR KAREN TEXAS	18191	1015	10	12	HG	HG	RT	4	4	4	4			

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
OYSTER CREEK TIDAL AT THAT-WAY DRIVE 0.5 MILES BELOW FM 2004	11486	1109	11	12	HG	HG	RT	4	4	4				was HG175
SAN BERNARD RIVER TIDAL AT SH 35 SOUTHWEST OF WEST COLUMBIA	20460	1301	13	12	HG	HG	RT	4	4	4				was HG176
SAN BERNARD RIVER IMMEDIATELY DOWNSTREAM OF FM 3013 ON THE COLORADO-AUSTIN COUNTY LINE APPROXIMATELY 15KM SW OF SEALY	16370	1302	13	12	HG	HG	RT	4	4	4	4			
CANEY CREEK IMMEDIATELY UPSTREAM OF CONCRETE BRIDGE 210 M DOWNSTREAM OF LINVILLE BAYOU CONFLUENCE AND ADJACENT TO FM 521	12151	1304	13	12	HG	HG	RT	4	4	4	4			Added in FY2014
TARKINGTON BAYOU AT SH 105/SH 321 SOUTHEAST OF CLEVELAND	20466	1002A	10	12	HG	HG	RT	4	4	4	4			was HG169
HALLS BAYOU 50 METERS EAST TO THE INTERSECTION OF KOWIS STREET AND SHADY LANE 535 METERS DOWNSTREAM OF HOPPER ROAD AND 502 METERS UPSTREAM OF LITTLE YORK ROAD IN HOUSTON	20455	1006D	10	12	HG	HG	RT	4	4	4	4			was HG177
MILL CREEK AT HARDIN STORE ROAD NORTH OF TOMBALL	20461	1008A	10	12	HG	HG	BS				4	4		Added 24-hr DO in FY2014.
MILL CREEK AT HARDIN STORE ROAD NORTH OF TOMBALL	20461	1008A	10	12	HG	HG	RT	4	4	4	4			This site replaces site 16604. HG had been using wrong site ID.
WALNUT CREEK AT DECKER PRAIRIE ROSEHL ROAD NORTHWEST OF TOMBALL	20462	1008I	10	12	HG	HG	RT	4	4	4	4			was HG180
BRUSHY CREEK AT GLENMONT ESTATES BOULEVARD 265 METERS NORTH AND 35 METERS WEST TO THE INTERSECTION OF ARNDT LANE AND ANN CIRCLE WEST OF TOMBALL	20463	1008J	10	12	HG	HG	RT	4	4	4	4			
LITTLE CYPRESS CREEK AT MUESCHKE ROAD 4.4 KILOMETERS NORTH OF SH 290 NORTHWEST OF CYPRESS	20456	1009E	10	12	HG	HG	RT	4	4	4	4			was HG166
SPRING BRANCH AT SH 242 NORTHWEST TO THE CITY OF WOODBRANCH	20451	1010C	10	12	HG	HG	RT	4	4	4	4			was HG170
BUFFALO BAYOU IMMEDIATELY DOWNSTREAM OF GREEN BUSH ROAD 3.1 MILES SOUTHEAST OF KATY	11145	1014B	10	12	HG	HG	RT	4	4	4	4			was HG168
HORSEPEN CREEK AT FM 529 1.9 KILOMETERS EAST OF SH 6 NORTHWEST OF HOUSTON	20465	1014C	10	12	HG	HG	RT	4	4	4	4			was HG165
MOUND CREEK 167 METERS DOWNSTREAM OF RUN OF THE OAKS 1.35 KM UPSTREAM OF CONFLUENCE WITH LAKE CREEK	17937	1015A	10	12	HG	HG	RT	4	4	4	4			
MAGNOLIA CREEK AT W BAY AREA BLVD LEAGUE CITY APPROX 250 M UPSTREAM OF WWTP PERMIT WQ0010568-003	16611	1101A	11	12	HG	HG	BS	3			3	3		Added in FY2014
UNNAMED TRIBUTARY OF CLEAR CREEK TIDAL IMMEDIATELY UPSTREAM OF FM 518 640 M WEST OF IH 45 BETWEEN WILLIAMSPORT ST AND ELLIS LANDING	18818	1101E	11	12	HG	HG	BS				3	3		24- HR DO collected 3 times during both FY2014-2015
WEST BERNARD CREEK AT WHARTON CR 225 IN EAST OF HUNGERFORD	20721	1302B	13	12	HG	HG	BS				4	4		

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
WEST BERNARD CREEK AT WHARTON CR 225 IN EAST OF HUNGERFORD	20721	1302B	13	12	HG	HG	RT	4	4	4	4			replaces temp id HG-185
PEACH CREEK AT WHARTON CR 117/CHUDALLA ROAD/ARCHER ROAD 89 METERS SOUTH OF THE INTERSECTION OF WHARTON CR 117/CHUDALLA ROAD/ARCHER ROAD AND WHARTON CR 121/ WHARTON CR 119/DONALDSON ROAD IN EAST OF WHARTON	20722	1302D	13	12	HG	HG	RT	4	4	4	4			replaces temp id HG-186
MOUND CREEK AT BRAZORIA CR 450/JACKSON SETTLEMENT ROAD 1.22 KILOMETERS UPSTREAM OF FM 1301 IN WEST OF WEST COLUMBIA	20723	1302E	13	12	HG	HG	RT	4	4	4	4			replaces temp id HG-187
LINVILLE BAYOU 35 M DOWNSTREAM OF SIMS ROAD APPROXIMATELY 5.20 KM UPSTREAM OF MOUTH	12138	1304A	13	12	HG	HG	RT	4	4	4				
HARDEMAN SLOUGH IMMEDIATELY DOWNSTREAM OF ALLENHURST RD NE OF FM 2540 NEAR ALLENHURST COMMUNITY	12135	1305A	13	12	HG	HG	RT	4	4	4	4			Added in FY2014
GOODYEAR CREEK TIDAL IMMEDIATELY UPSTREAM OF IH 10 IN EAST HOUSTON	16664	1006	10	12	HG	HH	RT	9	9	9				
GREENS BAYOU AT WALLISVILLE ROAD APPROX 150 METERS NORTHEAST OF THE INTERSECTION OF DATTNER ROAD AND WALLISVILLE ROAD IN HOUSTON	21008	1006	10	12	HG	HH	RT	9	9	9				This site replaced 11277 in FY2012 due to safety issues.
GREENS BAYOU IMMEDIATELY DOWNSTREAM OF GREEN RIVER ROAD/LEY ROAD IN HOUSTON	11279	1006	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8076700
BERRY BAYOU/TRIBUTARY OF SIMS BAYOU IMMEDIATELY UPSTREAM OF AHRENS DRIVE IN SOUTH EAST HOUSTON	16660	1007	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU TIDAL AT 75TH STREET IN HOUSTON	11306	1007	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU TIDAL AT SCOTT STREET IN HOUSTON	11309	1007	10	12	HG	HH	RT	9	9	9				
BUFFALO BAYOU TIDAL IMMEDIATELY UPSTREAM OF JENSEN DRIVE IN HOUSTON	15841	1007	10	12	HG	HH	RT	9	9	9				
HUNTING BAYOU TIDAL AT FEDERAL ROAD BRIDGE IN HOUSTON	11298	1007	10	12	HG	HH	RT	9	9	9				
LITTLE VINCE BAYOU IMMEDIATELY DOWNSTREAM OF NORTH MAIN STREET IN PASADENA TX	11172	1007	10	12	HG	HH	RT	9	9	9				
SIMS BAYOU AT GALVESTON ROAD IN HOUSTON	20736	1007	10	12	HG	HH	RT	9	9	9				This site replaces station 11304. HH using wrong station id for the location they were sampling at.
SIMS BAYOU TIDAL IMMEDIATELY DOWNSTREAM OF LAWNSDALE AVENUE IN HOUSTON	11302	1007	10	12	HG	HH	RT	9	9	9				
SPRING CREEK IMMEDIATELY DOWNSTREAM OF KUYKENDAHL ROAD NORTHEAST OF HOUSTON	17489	1008	10	12	HG	HH	RT	9	9	9				
SPRING CREEK IMMEDIATELY DOWNSTREAM OF RILEY FUZZEL ROAD	11312	1008	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8068520

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
SPRING CREEK IMMEDIATELY UPSTREAM OF DECKER PRAIRIE ROSEHILL ROAD	11323	1008	10	12	HG	HH	RT	9	9	9				Part of UAA
SPRING CREEK IMMEDIATELY UPSTREAM OF SH 249	11314	1008	10	12	HG	HH	RT	9	9	9	9			Monitoring Entity changed from HW to HH in 2010. Flow from gage 8068275
CYPRESS CREEK AT SH 249	11331	1009	10	12	HG	HH	RT	9	9	9				Monitoring Entity changed from HW to HH in 2010
CYPRESS CREEK AT STEUBNER-AIRLINE ROAD IN HOUSTON	11330	1009	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8068900
CYPRESS CREEK IMMEDIATELY DOWNSTREAM OF GRANT ROAD NEAR CYPRESS	11332	1009	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8068800
CYPRESS CREEK IMMEDIATELY DOWNSTREAM OF HOUSE HAHN ROAD NEAR CYPRESS	11333	1009	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8068740
BUFFALO BAYOU TIDAL AT MCKEE ST IN HOUSTON	11345	1013	10	12	HG	HH	RT	9	9	9				
BUFFALO BAYOU TIDAL AT SABINE STREET NORTH OF ALLEN PARKWAY IN HOUSTON	15843	1013	10	12	HG	HH	RT	9	9	9				
BUFFALO BAYOU TIDAL AT SHEPHERD DRIVE IN HOUSTON	11351	1013	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8074000
BUFFALO BAYOU TIDAL IMMEDIATELY DOWNSTREAM OF MAIN STREET IN HOUSTON	11347	1013	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8074600
BUFFALO BAYOU AT CHIMNEY ROCK ROAD IN HOUSTON	15845	1014	10	12	HG	HH	RT	9	9	9				
BUFFALO BAYOU AT ELDRIDGE ROAD IN HOUSTON	11363	1014	10	12	HG	HH	RT	9	9	9				
BUFFALO BAYOU AT SH 6	11364	1014	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8072500
BUFFALO BAYOU AT VOSS ROAD	11356	1014	10	12	HG	HH	RT	9	9	9				
BUFFALO BAYOU AT WILCREST DRIVE IN HOUSTON	11361	1014	10	12	HG	HH	RT	9	9	9				
BUFFALO BAYOU IMMEDIATELY DOWNSTREAM OF BRIAR FOREST DRIVE IN WEST HOUSTON	15846	1014	10	12	HG	HH	RT	9	9	9				
BUFFALO BAYOU IMMEDIATELY DOWNSTREAM OF DAIRY ASHFORD ROAD WEST OF HOUSTON	11362	1014	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8073500
BUFFALO BAYOU IMMEDIATELY DOWNSTREAM OF WEST BELTWAY 8 IN HOUSTON	11360	1014	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8073600
BUFFALO BAYOU NORTH SHORE IMMEDIATELY UNDERNEATH THE SOUTHBOUND FEEDER ROAD BRIDGE OF IH 610 WEST IN HOUSTON	20212	1014	10	12	HG	HH	RT	9	9	9				
GREENS BAYOU 184 METERS DOWNSTREAM OF KNOBCREST DRIVE	13778	1016	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8075900
GREENS BAYOU AT TIDWELL ROAD IN HARRIS CO	11369	1016	10	12	HG	HH	RT	9	9	9				
GREENS BAYOU AT US 59 NORTH OF HOUSTON	11371	1016	10	12	HG	HH	RT	9	9	9				

Site Description	Station ID	Waterbody ID	Basin	Region	SF	Cf	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
GREENS BAYOU AT WEST GREENS PARKWAY	11376	1016	10	12	HG	HH	RT	9	9	9				
GREENS BAYOU IMMEDIATELY DOWNSTREAM OF MT HOUSTON PARKWAY	11370	1016	10	12	HG	HH	RT	9	9	9				
GREENS BAYOU IMMEDIATELY UPSTREAM OF MILLS ROAD WEST OF HOUSTON	17495	1016	10	12	HG	HH	RT	9	9	9				
WHITEOAK BAYOU AT NORTH HOUSTON ROSSLYN ROAD	11394	1017	10	12	HG	HH	RT	9	9	9				
WHITEOAK BAYOU AT NORTH SHEPHERD STREET IN HOUSTON	11389	1017	10	12	HG	HH	RT	9	9	9				This site replaced site 15827
WHITEOAK BAYOU AT WEST TIDWELL ROAD IN NORTHWEST HOUSTON	15831	1017	10	12	HG	HH	RT	9	9	9				
WHITEOAK BAYOU IMMEDIATELY DOWNSTREAM OF TAHOE DRIVE	11396	1017	10	12	HG	HH	RT	9	9	9				
WHITEOAK BAYOU IMMEDIATELY DOWNSTREAM OF WEST 43RD STREET IN NORTHWEST HOUSTON	15829	1017	10	12	HG	HH	RT	9	9	9				
ARMAND BAYOU TIDAL AT BAY AREA BLVD NORTH OF NASA AT MIDDLE OF MEDIAN BETWEEN 2 BRIDGES EASTERN SHORE	11503	1113	11	12	HG	HH	RT	9	9	9				
HALLS BAYOU 87 METERS UPSTREAM OF TIDWELL ROAD IN SETTEGAST	11127	1006D	10	12	HG	HH	RT	9	9	9				
HALLS BAYOU AT AIRLINE ROAD IN NORTH HOUSTON	17490	1006D	10	12	HG	HH	RT	9	9	9				
HALLS BAYOU AT DEER TRAIL DRIVE IN NORTH HOUSTON	17491	1006D	10	12	HG	HH	RT	9	9	9				Flow from gage 8076200
HALLS BAYOU AT HIRSCH RD IN NORTHEAST HOUSTON	15863	1006D	10	12	HG	HH	RT	9	9	9				
HALLS BAYOU AT HOMESTEAD ROAD IN NORTHEAST HOUSTON	15862	1006D	10	12	HG	HH	RT	9	9	9				
HALLS BAYOU AT JENSEN DRIVE IN HOUSTON	11126	1006D	10	12	HG	HH	RT	9	9	9				Flow from gage 8076500
HALLS BAYOU AT MESA DR IN NORTHEAST HOUSTON	15864	1006D	10	12	HG	HH	RT	9	9	9				
BIG GULCH AT WALLISVILLE ROAD IN EAST HOUSTON	16662	1006F	10	12	HG	HH	RT	9	9	9				
SPRING GULLY AT WEST TERMINUS OF BARNESWORTH DRIVE IN NORTHEAST HOUSTON	16663	1006H	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF HALLS BAYOU AT TALTON STREET IN NORTH EAST HOUSTON	16666	1006I	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF HALLS BAYOU AT WOODLYN ROAD IN NORTH EAST HOUSTON	16667	1006I	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF HALLS BAYOU IMMEDIATELY DOWNSTREAM OF LANGLEY ROAD IN NORTH HOUSTON	16665	1006J	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU AT DAIRY ASHFORD STREET IN WEST HOUSTON	15850	1007B	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU AT SOUTH GESSNER DRIVE IN HOUSTON	11140	1007B	10	12	HG	HH	RT	9	9	9				Flow from gage 8074810
BRAYS BAYOU AT SOUTH MAIN ST IN HOUSTON	11139	1007B	10	12	HG	HH	RT	9	9	9				Flow from gage 8075000

Site Description	Station ID	Waterbody ID	Basin	Region	SF	CF	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
BRAYS BAYOU AT SOUTH WAYSIDE DRIVE 802 METERS UPSTREAM OF IH 45 IN SOUTHEAST HOUSTON	16479	1007B	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU AT WILCREST DRIVE IN WEST HOUSTON	15851	1007B	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU IMMEDIATELY DOWNSTREAM OF ALMEDA ROAD SOUTHWEST OF HOUSTON	11138	1007B	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU IMMEDIATELY DOWNSTREAM OF BEECHNUT STREET IN WEST HOUSTON	15852	1007B	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU IMMEDIATELY DOWNSTREAM OF HILLCROFT STREET IN WEST HOUSTON	15853	1007B	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU IMMEDIATELY DOWNSTREAM OF SH 6 IN WEST HOUSTON	15848	1007B	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU IMMEDIATELY DOWNSTREAM OF SOUTH RICE AVENUE IN WEST HOUSTON	15854	1007B	10	12	HG	HH	RT	9	9	9				
BRAYS BAYOU IMMEDIATELY DOWNSTREAM OF STELLA LINK ROAD IN HOUSTON	15855	1007B	10	12	HG	HH	RT	9	9	9				
BRAYS/KEEGANS BAYOU IMMEDIATELY DOWNSTREAM OF ROARK ROAD NEAR US 59 AT BELTWAY 8 IN SOUTHWEST HOUSTON	11169	1007C	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8074800
KEEGAN'S BAYOU AT SYNOTT ROAD 1.1 KM SOUTH OF THE INTERSECTION OF SYNOTT ROAD AND BISSONNET STREET IN SOUTHWEST HOUSTON	20211	1007C	10	12	HG	HH	RT	9	9	9				
SIMS BAYOU AT CULLEN BLVD/FM 865 SOUTH OF HOUSTON	11133	1007D	10	12	HG	HH	RT	9	9	9				
SIMS BAYOU AT HIRAM CLARKE RD IN HOUSTON	11135	1007D	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8075400
SIMS BAYOU AT MARTIN LUTHER KING JUNIOR BOULEVARD IN SOUTH HOUSTON	15877	1007D	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8075470
SIMS BAYOU AT SWALLOW STREET IN SOUTHEAST HOUSTON	15878	1007D	10	12	HG	HH	RT	9	9	9				Flow from gage 8075500
SIMS BAYOU AT TELEPHONE ROAD/SH 35 IN HOUSTON	11132	1007D	10	12	HG	HH	RT	9	9	9				
SIMS BAYOU IMMEDIATELY DOWNSTREAM OF ALMEDA ROAD IN SOUTH HOUSTON	15876	1007D	10	12	HG	HH	RT	9	9	9				
SIMS BAYOU SOUTH BRANCH AT TIFFANY DRIVE IN SOUTH HOUSTON	16656	1007D	10	12	HG	HH	RT	9	9	9				
SIMS BAYOU UPSTREAM TIDAL AT SOUTH POST OAK ROAD IN SOUTHWEST HOUSTON	17976	1007D	10	12	HG	HH	RT	9	9	9				
WILLOW WATERHOLE AT MCDERMED DRIVE IN SOUTHWEST HOUSTON	16652	1007E	10	12	HG	HH	RT	9	9	9				
BERRY BAYOU IMMEDIATELY UPSTREAM OF SOUTH RICHEY STREET IN SOUTH EAST HOUSTON	16661	1007F	10	12	HG	HH	RT	9	9	9				

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
KUHMAN GULLY/TRIBUTARY OF BRAYS BAYOU AT BROCK STREET 311 METERS UPSTREAM OF WHEELER STREET IN SOUTHEAST CENTRAL HOUSTON	16653	1007G	10	12	HG	HH	RT	9	9	9				
PINE GULLY/TRIBUTARY OF SIMS BAYOU AT OLD GALVESTON ROAD IN SOUTH EAST HOUSTON	16659	1007H	10	12	HG	HH	RT	9	9	9				
PLUM CREEK/TRIBUTARY OF SIMS BAYOU AT OLD GALVESTON ROAD IN SOUTH EAST HOUSTON	16658	1007I	10	12	HG	HH	RT	9	9	9				
COUNTRY CLUB BAYOU/TRIBUTARY OF BRAYS BAYOU AT HUGHES STREET IN CENTRAL HOUSTON	16651	1007K	10	12	HG	HH	RT	9	9	9				
COUNTRY CLUB BAYOU/TRIBUTARY OF BRAYS BAYOU IMMEDIATELY UPSTREAM OF SOUTH WAYSIDE DRIVE/US90A IN CENTRAL HOUSTON	16650	1007K	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF BRAYS BAYOU AT DUMFRIES DRIVE IN SOUTH WEST HOUSTON	16654	1007L	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF HUNTING BAYOU IMMEDIATELY UPSTREAM OF JOHN RAUSTON ROAD IN EAST HOUSTON	16657	1007M	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF SIMS BAYOU AT DULCIMER STREET IN SOUTH HOUSTON	16655	1007N	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF BUFFALO BAYOU / JAPHET CREEK AT CLINTON DRIVE IN CENTRAL HOUSTON	16649	1007O	10	12	HG	HH	RT	9	9	9				
HUNTING BAYOU AT CAVALCADE ST IN NORTHEAST HOUSTON	15869	1007R	10	12	HG	HH	RT	9	9	9				
HUNTING BAYOU AT JENSEN DRIVE IN NORTHEAST HOUSTON	15867	1007R	10	12	HG	HH	RT	9	9	9				
HUNTING BAYOU AT LOCKWOOD DRIVE IN NORTHEAST HOUSTON	15873	1007R	10	12	HG	HH	RT	9	9	9				
HUNTING BAYOU AT NORTH LOOP EAST/IH 610 IN HOUSTON	11129	1007R	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8075770
HUNTING BAYOU IMMEDIATELY DOWNSTREAM OF IH 10 EAST OF HOUSTON	11128	1007R	10	12	HG	HH	RT	9	9	9				
POOR FARM DITCH TRIBUTARY OF BRAYS BAYOU AT EASTBOUND NORTH BRAESWOOD BLVD APPROX 200 M E OF BUFFALO SPEEDWAY IN SW HOUSTON	18692	1007S	10	12	HG	HH	RT	9	9	9				
BINTLUFF DITCH TRIBUTARY OF BRAYS BAYOU UNDER CENTER OF BISSONNET ST BRIDGE 317 M NE OF BISSONNET AT FONDREN RD IN SW HOUSTON	18690	1007T	10	12	HG	HH	RT	9	9	9				
MIMOSA DITCH TRIBUTARY OF BRAYS BAYOU AT NEWCASTLE DR IN SOUTHWEST HOUSTON	18691	1007U	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF HUNTING BAYOU AT MINDEN STREET APPROXIMATELY 0.3 KM EAST OF LOCKWOOD AND S OF N 610 LOOP EAST	18689	1007V	10	12	HG	HH	RT	9	9	9				

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
HARRIS COUNTY FLOOD CONTROL DISTRICT CHANNEL D138 / CHIMNEY DITCH IMMEDIATELY UPSTREAM OF CAVERSHAM DRIVE BETWEEN THE NORTHBOUND AND SOUTHBOUND SECTIONS OF CHIMNEY ROCK ROAD IN HOUSTON	21180	1007W	10	12	HG	HH	RT	9	9	9				Added in FY2013
WILLOW CREEK AT TUWA ROAD APPROXIMATELY 859 METERS DOWNSTREAM OF FM 2920 ROAD IN NORTHERN HARRIS COUNTY	20730	1008H	10	12	HG	HH	RT	9	9	9				
WILLOW CREEK IMMEDIATELY UPSTREAM OF GOSLING ROAD	11185	1008H	10	12	HG	HH	RT	9	9	9				
FAULKEY GULLY OF CYPRESS CREEK 105 METERS DOWNSTREAM OF LAKEWOOD FOREST DRIVE NORTHWEST OF HOUSTON	17496	1009C	10	12	HG	HH	RT	9	9	9				
SPRING GULLY AT SPRING CREEK OAKS DRIVE IN TOMBALL	17481	1009D	10	12	HG	HH	RT	9	9	9				
LITTLE CYPRESS CREEK IMMEDIATELY DOWNSTREAM OF KLUGE ROAD IN HOUSTON	14159	1009E	10	12	HG	HH	RT	9	9	9				
LITTLE WHITE OAK BAYOU AT TRIMBLE STREET/NORTH EDGE OF HOLLYWOOD CEMETERY IN HOUSTON	11148	1013A	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8074540
LITTLE WHITE OAK BAYOU AT WHITE OAK DRIVE IN NORTH HOUSTON	16648	1013A	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIB OF BUFFALO BAYOU AT GLENWOOD CEMETARY RD 160 M W OF INTERSECT OF LUBBOCK ST AND SAWYER ST IN CENTRAL HOUSTON	16675	1013C	10	12	HG	HH	RT	9	9	9				
BEAR CREEK AT OLD GREENHOUSE ROAD WEST OF HOUSTON	17484	1014A	10	12	HG	HH	RT	9	9	9				
BUFFALO BAYOU AT SOUTH MASON ROAD WEST OF HOUSTON	17492	1014B	10	12	HG	HH	RT	9	9	9				
LANGHAM CREEK AT SH 6 IN NORTHWEST HOUSTON	17482	1014E	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8072760
SOUTH MAYDE CREEK AT DULANEY ROAD WEST OF HOUSTON	17493	1014H	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8072700
SOUTH MAYDE CREEK IMMEDIATELY DOWNSTREAM OF MEMORIAL DRIVE	11163	1014H	10	12	HG	HH	RT	9	9	9				
TURKEY CREEK IMMEDIATELY DOWNSTREAM OF MEMORIAL DRIVE IN WEST HOUSTON	15847	1014K	10	12	HG	HH	RT	9	9	9				
TURKEY CREEK IMMEDIATELY SOUTHEAST OF TANNER ROAD AND NORTH ELDRIDGE PARKWAY INTERSECTION IN HOUSTON	17483	1014K	10	12	HG	HH	RT	9	9	9				
MASON CREEK 151 METERS DOWNSTREAM OF PARK PINE DRIVE WEST OF HOUSTON	17494	1014L	10	12	HG	HH	RT	9	9	9				
NEWMAN BRANCH / NEIMANS BAYOU AT MEMORIAL DRIVE IN WEST HOUSTON	16597	1014M	10	12	HG	HH	RT	9	9	9				
RUMMEL CREEK IMMEDIATELY DOWNSTREAM OF MEMORIAL DRIVE IN WEST HOUSTON	11188	1014N	10	12	HG	HH	RT	9	9	9				
SPRING BRANCH CREEK IMMEDIATELY UPSTREAM OF WIRT ROAD 331 METERS DOWNSTREAM OF IH 10 IN WEST HOUSTON	16592	1014O	10	12	HG	HH	RT	9	9	9				

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
GARNERS BAYOU AT NORTH SAM HOUSTON PARKWAY/SH LOOP 8 NE OF HOUSTON	11125	1016A	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8074250
GARNERS BAYOU IMMEDIATELY UPSTREAM OF OLD HUMBLE ROAD AT CONFLUENCE WITH RIENHARDT BAYOU IN NORTHEAST HOUSTON	16589	1016A	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF GREENS BAYOU AT MESA DR/E HOUSTON-DYERSDALE ROAD IN NORTHEAST HOUSTON	16590	1016B	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF GREENS BAYOU IMMEDIATELY DOWNSTREAM OF GREENRANCH ROAD 1.02 KM UPSTREAM OF CONFLUENCE WITH GREENS BAYOU	11124	1016C	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF GREENS BAYOU AT SMITH RD IN NORTHEAST HOUSTON	16676	1016D	10	12	HG	HH	RT	9	9	9				
BRICKHOUSE GULLY AT US 290 IN NORTHWEST HOUSTON 2.03 KM UPSTREAM OF CONFLUENCE WITH WHITEOAK BAYOU	16594	1017A	10	12	HG	HH	RT	9	9	9	9			Flow from gage 8074250
COLE CREEK IMMEDIATELY UPSTREAM OF BOLIVIA BLVD 792 METERS UPSTREAM OF CONFLUENCE WITH WHITEOAK BAYOU IN NW HOUSTON	16593	1017B	10	12	HG	HH	RT	9	9	9				
VOGEL CREEK IMMEDIATELY DOWNSTREAM OF WEST LITTLE YORK ROAD	11155	1017C	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF WHITE OAK BAYOU AT US290 INTERSECTION AT MANGUM ROAD IN NORTHWEST HOUSTON	16595	1017D	10	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF WHITE OAK BAYOU AT W 14TH IN WEST HOUSTON 516 METERS UPSTREAM OF CONFLUENCE WITH WHITE OAK BAYOU	16596	1017E	10	12	HG	HH	RT	9	9	9				
ROLLING FORK CREEK IMMEDIATELY DOWNSTREAM OF LAKE LANE	11157	1017F	10	12	HG	HH	RT	9	9	9				
ARMAND BAYOU AT FAIRMONT PARKWAY ALONG MEDIAN AT MIDPOINT BETWEEN BRIDGES	11405	1113A	11	12	HG	HH	RT	9	9	9				Added in FY2011 because dropped site 11409
ARMAND BAYOU AT GENOA-RED BLUFF RD NE OF ELLINGTON AFB	11404	1113A	11	12	HG	HH	RT	9	9	9				
UNNAMED TRIBUTARY OF HORSEPEN BAYOU TIDAL AT PENN HILLS	17485	1113C	11	12	HG	HH	RT	9	9	9				
WILLOW SPRING AT BANDRIDGE ROAD IN SOUTHEAST HOUSTON	17487	1113D	11	12	HG	HH	RT	9	9	9				
BIG ISLAND SLOUGH AT HILLRIDGE ROAD IN SOUTHEAST HOUSTON	17486	1113E	11	12	HG	HH	RT	9	9	9				
LAKE HOUSTON 90 M S AND 349 M W OF INTERSECTION OF MAGNOLIA PT DR AND DIAMOND WAY CANEY CREEK ARM IN HOUSTON	16623	1002	10	12	HG	HW	RT	12	12	12				
LAKE HOUSTON AT FM 1960 EAST END PASS BRIDGE 235 M S AND 950 M WEST OF INTERSECTION OF FM 1960 AND FAIRLAKE LANE/CITY HO SITE 13	11212	1002	10	12	HG	HW	RT	12	12	12				
LAKE HOUSTON AT FM 1960 WEST END PASS BRIDGE 269 M N AND 731 M E OF INTERSECTION OF ATASCOCITA SHORES AND FM 1960/CITY HO SITE 9	11211	1002	10	12	HG	HW	RT	12	12	12				
LAKE HOUSTON IN THE WEST FORK SAN JACINTO RIVER CHANNEL 270 M EAST AND 60 M NORTH OF MISTY COVE AT ATASCOCITA PLACE DR	18667	1002	10	12	HG	HW	RT	12	12	12				

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
LAKE HOUSTON NORTH SIDE OF MISSOURI PACIFIC RAILROAD BRIDGE 137 METERS SOUTH AND 1.36 KM WEST OF INTERSECTION OF PINO LN AND SUNOCO RD	11208	1002	10	12	HG	HW	RT	12	12	12				
LAKE HOUSTON WEST FORK SAN JACINTO RIVER ARM UNDER POWER LINES 567 METERS EAST AND 538 METERS NORTH FROM THE INTERSECTION OF BELLEAU WOOD DRIVE AND SOUTHSORE DRIVE IN HOUSTON	20782	1002	10	12	HG	HW	RT	12	12	12				added site in FY 2011 want to know if OSSF community upstream is affecting ambient water quality
LAKE HOUSTON/LUCE BAYOU 123 M NORTH AND 188 M WEST OF LAKEWATER DR AT WATERWOOD DR IN WATER WONDERLAND SUBDIVISION IN HARRIS COUNTY	18670	1002	10	12	HG	HW	RT	12	12	12				
LK HOUSTON W OF LK SHADOWS SUBDIVISION MID LAKE NW OF HOUSTON 2.09 KM N AND 1.38 KM E OF INTERSECT OF LK HOUSTON PKWY AND DITE CAYLIN	16668	1002	10	12	HG	HW	RT	12	12	12				
EAST FORK SAN JACINTO RIVER AT FM 1485	11235	1003	10	12	HG	HW	RT	6	6	6	6			Flow from gage 8070200
EAST FORK SAN JACINTO RIVER IMMEDIATELY UPSTREAM OF SH 105 WEST OF CLEVELAND	11238	1003	10	12	HG	HW	RT	6	6	6	6			Site added in FY11. Flow from gage 8070000
WEST FORK SAN JACINTO RIVER IMMEDIATELY DOWNSTREAM OF SH 105 NW OF CONROE	11251	1004	10	12	HG	HW	RT	6	6	6	6			Flow from gage 8067650
WEST FORK SAN JACINTO RIVER IMMEDIATELY UPSTREAM OF SH 242	11243	1004	10	12	HG	HW	RT	6	6	6				This site ID replaces site ID 16624. Data was moved from 16624 to 11243.
SPRING CREEK BRIDGE AT IH 45 20 MILES NORTH OF HOUSTON	11313	1008	10	12	HG	HW	RT	6	6	6	6			Flow from gage 8068500
CYPRESS CREEK BRIDGE ON IH 45 15 MI NORTH OF HOUSTON	11328	1009	10	12	HG	HW	RT	6	6	6	6			Flow from gage 8069000
CANEY CREEK AT MILLMAC ROAD NORTHEAST OF CUT AND SHOOT	21465	1010	10	12	HG	HW	RT	6	6	6				Replaced site 14241 in FY2014
CANEY CREEK IMMEDIATELY DOWNSTREAM OF FM 1485	11334	1010	10	12	HG	HW	RT	6	6	6				
PEACH CREEK BRIDGE AT FM 2090 IN SPLENDORA	11337	1011	10	12	HG	HW	RT	6	6	6				This site was substituted for 11336 in FY2012.
PEACH CREEK IMMEDIATELY UPSTREAM OF OLD HWY 105	16625	1011	10	12	HG	HW	RT	6	6	6				
LUCE BAYOU/SAN JACINTO RIVER EAST FORK AT HUFFMAN-NEW CANEY ROAD	11187	1002B	10	12	HG	HW	RT	6	6	6				Monitoring Entity changed from HH to HW in 2010

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
CRYSTAL CREEK AT SH 242 SOUTHEAST OF CONROE	16635	1004D	10	12	HG	HW	RT	6	6	6				Replaces site 11181 Crystal Creek at FM1314
STEWARTS CREEK 175 METERS DOWNSTREAM OF SH LOOP 336 SOUTHEAST OF CONROE	16626	1004E	10	12	HG	HW	RT	6	6	6				
LAKE CONROE AT APRIL POINT MID CHANNEL 559 M N AND 586 M E OF INTERSECTION OF APRIL POINT PLACE AND APRIL HILL	16638	1012	10	12	HG	SJ	RT	12	12	12				
LAKE CONROE AT AQUARIUS POINT MID CHANNEL N OF FM 830 BOAT RAMP 437 M N AND 924 M W OF INTERSECT OF FM 830 AND LAKEVIEW MANOR DR	16641	1012	10	12	HG	SJ	RT	12	12	12				
LAKE CONROE AT DAM MID CHANNEL 85 M OUT FROM MIDDLE TAINTER GATE 922 M N AND 426 M E OF INTERSECTION OF DAM SITE RD AND SH 105	11342	1012	10	12	HG	SJ	RT	12	12	12				
LAKE CONROE AT FM 1375 IN THE MAIN CHANNEL 4TH PILING FROM THE EAST 541 M SOUTH AND 1.40 KM W OF INTERSECTION OF KAGLE RD AND FM 1375 USGS SITE GC	11344	1012	10	12	HG	SJ	RT	12	12	12				
LAKE CONROE AT HUNTERS POINT CANEY CREEK ARM E OF SCOTTS RIDGE BOAT RAMP 640 M N AND 558 M E OF INTERSECT OF TEEL RD AND HUNTERS TRL	16643	1012	10	12	HG	SJ	RT	12	12	12				
LAKE CONROE AT LAKE MID POINT MID CHANNEL AT FM 1097 BRIDGE 57 M S AND 520 M W OF INTERSECTION OF FM 1097 AND BLUEBERRY HILL	16642	1012	10	12	HG	SJ	RT	12	12	12				
LAKE CONROE AT MOUTH OF SANDY BRANCH COVE 2.63 KM EAST OF INTERSECTION OF HARDY SMITH ROAD AND F S 218 A	16645	1012	10	12	HG	SJ	RT	12	12	12				
LAKE CONROE AT PARADISE POINT MID CHANNEL 396 METERS S AND 309 M WEST INTERSECTION OF PARADISE VIEW DRIVE AND PARADISE POINT DRIVE	16644	1012	10	12	HG	SJ	RT	12	12	12				
LAKE CONROE AT SOUTH END OF LAKE ON EAST SIDE 201 METERS SOUTH AND 732 METERS WEST OF INTERSECTION OF S VALLEY DRIVE AND CREST DRIVE	16639	1012	10	12	HG	SJ	RT	12	12	12				
LAKE CONROE S OF BENTWATER ISLAND WEST COVE S OF FM 1097 BRIDGE 769 M N AND 89 M E OF INTERSECTION OF WATERFRONT AND SPRINGTIME DR	16640	1012	10	12	HG	SJ	RT	12	12	12				
UPPER PANTHER BRANCH APPROX 170 METERS DOWNSTREAM OF PERMIT WQ0012597-001 LOCATED AT 5402 RESEARCH FOREST DR	16630	1008B	10	12	HG	SJ	RT	12	4	4			2	
UPPER PANTHER BRANCH APPROX 80 M UPSTREAM OF PERMIT WQ0012597-001 LOCATED AT 5402 RESEARCH FOREST DR	16629	1008B	10	12	HG	SJ	RT	12	4	4			2	
LOWER PANTHER BRANCH 180 M UPSTREAM OF SAWDUST RD APPROX 50 M UPSTREAM OF PERMIT WQ0011401-001 LOCATED AT 2436 SAWDUST ROAD	16627	1008C	10	12	HG	SJ	RT	12	4	4			2	
PANTHER BRANCH 472 METERS DOWNSTREAM OF SAWDUST ROAD WEST OF IH 45 AND 12 MI SOUTH OF CONROE	16422	1008C	10	12	HG	SJ	RT	12	4	4				Replaced site 16628 in 2015 due to stream access from bank.
BEAR BRANCH 20 METERS DOWNSTREAM OF RESEARCH FOREST DRIVE	16631	1008E	10	12	HG	SJ	RT	12	4	4			2	Flow from gage 8068400

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
LAKE WOODLANDS AT MID POINT 130 METERS NORTH AND 30 METERS EAST OF THE NORTHERN INTERSECTION OF E SHORE DR AND CAPE HARBOR PL IN THE WOODLANDS	16483	1008F	10	12	HG	SJ	RT	12	4	4			2	
LAKE WOODLANDS AT NORTH END 111 METERS DOWNSTREAM OF RESEARCH FOREST DRIVE IN THE WOODLANDS	16484	1008F	10	12	HG	SJ	RT	12	4	4			2	
LAKE WOODLANDS AT SOUTH END 23 METERS NORTH AND 50 METERS EAST OF THE WEST EDGE OF DAM IN THE WOODLANDS	16482	1008F	10	12	HG	SJ	RT	12	4	4			2	
LAKE WOODLANDS AT WESTERN REACH 110 METERS NORTH AND 100 METERS EAST OF INTERSECTION OF MEADOW COVE DR AND PLEASURE COVE DR IN THE WOODLANDS	16481	1008F	10	12	HG	SJ	RT	12	4	4			2	
CLEAR CREEK TIDAL AT BROOKDALE DR APPROX 0.1MI DOWNSTREAM OF GRISSOM RD IN COUNTRYSIDE PARK IN CANOE LAUNCHING AREA IN LEAGUE CITY	16576	1101	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
CLEAR CREEK ABOVE TIDAL AT YOST ROAD TERMINUS IN PEARLAND IN BRAZORIA COUNTY	20010	1102	11	12	HG	UI	RT	4	4	4	4			site added to UI schedule in FY2012
DICKINSON BAYOU TIDAL AT IH 45	11462	1103	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
DICKINSON BAYOU TIDAL AT SH 146 BRIDGE EAST OF DICKINSON	11455	1103	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
BASTROP BAYOU OFF BAYOU WOOD DR DUE EAST OF BRAZORIA CR 201 AT BASTROP BAYOU DR APPROX 1.1 KM UPSTREAM OF SH 288B IN RICHWOOD VILLAGE	18502	1105	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
BASTROP BAYOU TIDAL 38 M NORTH OF N END OF COMPASS DR/BRAZORIA CR 504 APPROXIMATELY 4.4 KM DOWNSTREAM OF FM 523 SE OF ANGLETON	18505	1105	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
BASTROP BAYOU TIDAL APPROXIMATELY 15 M OFF NORTH BANK AND 1.55 KM UPSTREAM OF FM 2004 IN RICHWOOD VILLAGE	18503	1105	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
BASTROP BAYOU TIDAL MID CHANNEL AT NORTH END OF BASTROP BEACH ROAD 350 M DOWNSTREAM OF FM 523 SE OF ANGLETON	18504	1105	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
CHOCOLATE BAYOU IMMEDIATELY UPSTREAM OF BRAZORIA CR 171 / MUSTANG CHOCOLATE BAYOU ROAD IN LIVERPOOL	21178	1107	11	12	HG	UI	RT	4	4	4				This is a corrected location id for a site sampled for several years. Replaces site id 11480.
CHOCOLATE BAYOU TIDAL FM 2004 BRIDGE SOUTH OF ALVIN	11478	1107	11	12	HG	UI	RT	4	4	4				Added chlorophyll a in FY2012; Reduced frequency for FY08
WEST BAY AT RANGE MARKER D BETWEEN SOUTH DEER ISLAND AND TEICHMAN POINT	14622	2424	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08.
MOSES LAKE FLOOD GATES AT GALVESTON BAY CONFLUENCE AT SHELL ISLAND	16551	2431	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
CHOCOLATE BAY 1.2 KM EAST OF WHARTON BAYOU AND 8.1 KM DOWNSTREAM OF FM 2004	17085	2432	24	12	HG	UI	RT	4	4	4				this site replaces site 13346
CHOCOLATE BAY 200 M NORTHWEST OF HORSE GROVE POINT AND 5.1 KM DOWNSTREAM OF FM 2004	17086	2432	24	12	HG	UI	RT	4	4	4				this site replaces site 13347
MAGNOLIA CREEK AT W BAY AREA BLVD LEAGUE CITY APPROX 250 M UPSTREAM OF WWTP PERMIT WQ0010568-003	16611	1101A	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
CHIGGER CREEK AT FM528 BRIDGE IN FRIENDSWOOD	16493	1101B	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
COW BAYOU AT NASA ROAD 1 IN WEBSTER 100 M EAST OF FM 270/EL CAMINO REAL	17928	1101C	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
ROBINSONS BAYOU AT FM270 IN LEAGUE CITY	16475	1101D	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
UNNAMED TRIBUTARY OF CLEAR CREEK TIDAL IN FOREST PARK CEMETERY IMMEDIATELY UPSTREAM OF S FEEDER RD OF I 45/GULF FWY S OF NASA RD 1 IN WEBSTER	18591	1101F	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
COWART CREEK AT FM 518 IN FRIENDSWOOD	11425	1102A	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
MARYS CREEK AT MARYS CROSSING IN NORTH FRIENDSWOOD	16473	1102B	11	12	HG	UI	RT	4	4	4	4			Reduced frequency for FY08
HICKORY SLOUGH AT ROBINSON DRIVE IN PEARLAND	17068	1102C	11	12	HG	UI	RT	4	4	4	4			site added to UI schedule in Fy2012
BENSONS BAYOU AT FM 517 / PINE DR IN DICKINSON	16471	1103A	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
BORDENS GULLEY AT FM517 BRIDGE 0.10MI UPSTREAM OF CONFLUENCE OF DICKINSON BAYOU IN DICKINSON	16469	1103B	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
BORDENS GULLY AT SPRUCE DRIVE IN DICKINSON	20724	1103B	11	12	HG	UI	RT	4	4	4	4			replaces temp id HG-188 collect for 2 years then compare results against 16469
GEISLER BAYOU AT FM517 BRIDGE 0.19MI UPSTREAM OF DICKINSON BAYOU IN DICKINSON	16470	1103C	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
GUM BAYOU AT FM 517 E OF DICKINSON	11436	1103D	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
CEDAR CREEK AT FM 517 W OF DICKINSON	11434	1103E	11	12	HG	UI	RT	4	4	4	4			Reduced frequency for FY08
UNNAMED TRIBUTARY OF GUM BAYOU AT OWENS DRIVE 1.51 KILOMETERS UPSTREAM OF CONFLUENCE WITH GUM BAYOU IN DICKINSON	20728	1103G	11	12	HG	UI	RT	4	4	4	4			replaces temp id HG-191 this site was added after site 11446 was dropped for being a duplicate with WCFO

Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
FLORES BAYOU IMMEDIATELY UPSTREAM OF DANBURY-ANGLETON ROAD/BRAZORIA CR 210 EAST OF ANGLETON	18508	1105A	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
AUSTIN BAYOU MID CHANNEL 189 M UPSTREAM OF CONFLUENCE WITH BASTROP BAYOU TIDAL UPSTREAM OF CR 227 IN BRAZORIA COUNTY	18507	1105B	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
AUSTIN BAYOU AT FM 2004 APPROXIMATELY 4 MILES SOUTHEAST OF ANGLETON TEXAS IN BRAZORIA COUNTY	18048	1105C	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
AUSTIN BAYOU IMMEDIATELY UPSTREAM OF DANBURY-ANGLETON ROAD/BRAZORIA CR 210 EAST OF DANBURY	18506	1105C	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
BRUSHY BAYOU IMMEDIATELY UPSTREAM OF BRAZORIA CR 210 EAST OF ANGLETON	18509	1105D	11	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
HIGHLAND BAYOU 80 M NORTHEAST OF SH 6 BRIDGE CENTERPOINT IN BAYOU VISTA WEST OF IH 45 IN GALVESTON COUNTY	16488	2424A	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
HIGHLAND BAYOU AT FAIRWOOD ROAD IN LA MARQUE IN GALVESTON COUNTY	11415	2424A	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
HIGHLAND BAYOU AT FM 2004 IN HITCHCOCK IN GALVESTON COUNTY	16491	2424A	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
LAKE MADELINE AT CORNER OF BELUCHE DRIVE AND DOMINIQUE DRIVE IN GALVESTON	16564	2424B	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
MARCHANT BAYOU TIDAL AT FMS19 IN HITCHCOCK	16490	2424C	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
OFFATTS BAYOU OFF CM 18	14645	2424D	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
WEST BAY OFFAT BAYOU MID BAYOU OPPOSITE LAKE MADELINE CANAL	13322	2424D	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
ENGLISH BAYOU MID BAYOU 250 M EAST AND 83 M SOUTH OF 61ST ST BRIDGE CENTERPOINT IN GALVESTON	18695	2424E	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
HIGHLAND BAYOU DIVERSION CANAL MID CHANNEL AT SECOND STREET BRIDGE 467 M UPSTREAM OF PRICE ROAD WWTP RELEASE IN HITCHCOCK	18593	2424G	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
JARBO BAYOU AT FM2094 APPROX 0.3MI DOWNSTREAM OF CLEAR LAKE CONFLUENCE IN KEMAH	16476	2425B	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
JARBO BAYOU AT LAWRENCE ROAD IN KEMAH	16485	2425B	24	12	HG	UI	RT	4	4	4				Added in FY2015
MOSES BAYOU AT NORTHBOUND SH 146 BRIDGE AT MID-BRIDGE NORTH OF LA MARQUE	11400	2431A	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
MOSES BAYOU AT SH 3 IN TEXAS CITY	17910	2431A	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
UNNAMED TRIBUTARY OF MOSES LAKE AT STATE LOOP 197/25TH AVE NORTH 432 M EAST OF NORTHBOUND SH 146 IN TEXAS CITY	18592	2431C	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
MUSTANG BAYOU AT THE HEIGHTS-MANVEL ROAD /CARDINAL DRIVE BRIDGE NEAR ALVIN	21416	2432A	11	12	HG	UI	RT	4	4	4	4			Added in FY2014
MUSTANG BAYOU AT FM 2917 SOUTH OF ALVIN	11423	2432A	24	12	HG	UI	RT	4	4	4	4			Added site in FY2012

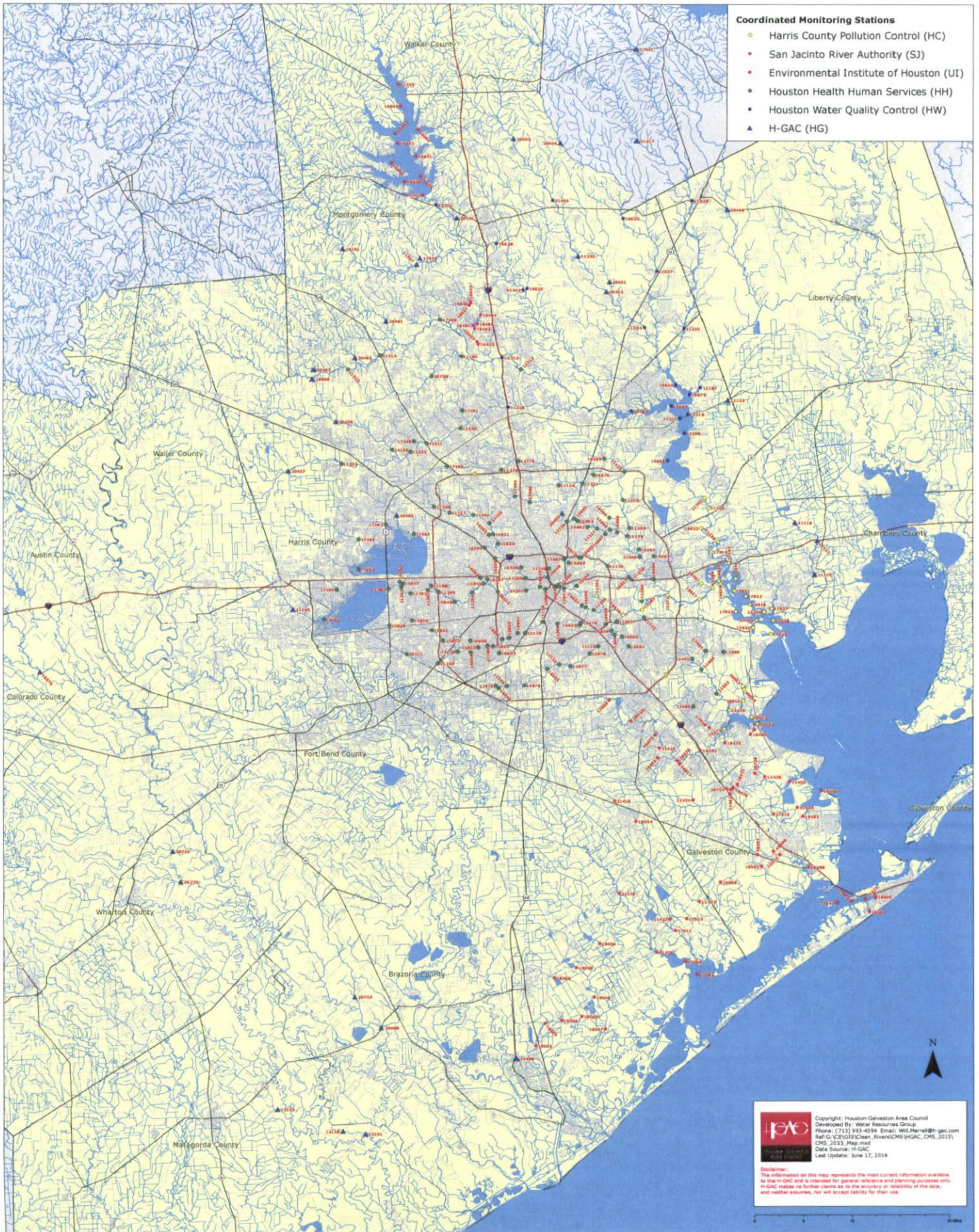
Site Description	Station ID	Waterbody ID	Basin	Region	SE	CE	MT	Field	Conv	Bacteria	Flow	24 hr DO	Metal Water	Comments
MUSTANG BAYOU IMMEDIATELY UPSTREAM OF EAST SOUTH STREET 85 METERS WEST OF SOUTHBOUND SH 35 IN ALVIN USGS ID 8077890	18554	2432A	24	12	HG	UI	RT	4	4	4	4			site added in FY2012
WILLOW BAYOU AT BAKER ST 404 M UPSTREAM OF FM 2004 SOUTH OF SANTA FE IN GALVESTON COUNTY	18668	2432B	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
HALLS BAYOU AT FM 2004 SW OF ALTO LOMA	11422	2432C	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
PERSIMMON BAYOU AT FM 2004 S/SW OF HITCHCOCK	17913	2432D	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08
NEW BAYOU AT FM 2004 S/SW OF HITCHCOCK	17911	2432E	24	12	HG	UI	RT	4	4	4				Reduced frequency for FY08

Appendix C: Station Location Maps

Station Location Maps

Maps of stations monitored by the H-GAC are provided below. The maps were generated by the H-GAC. This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries. For more information concerning this map, contact H-GAC.

H-GAC's 2015 Regional Coordinated Monitoring Stations



- Coordinated Monitoring Stations**
- Harris County Pollution Control (HC)
 - San Jacinto River Authority (SJ)
 - Environmental Institute of Houston (UI)
 - Houston Health Human Services (HH)
 - Houston Water Quality Control (HW)
 - ▲ H-GAC (HG)

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 CHS_2015_Map.mxd
 Data Source: H-GAC
 Last Update: June 17, 2014

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