Total Maximum Daily Loads for Indicator Bacteria in the Houston Metropolitan Area

Contract No. 582-6-70860
Work Order 582-6-70860-12

Quarterly Report No. 2

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CHAPTER 1

INTRODUCTION

1.1 PROBLEM STATEMENT

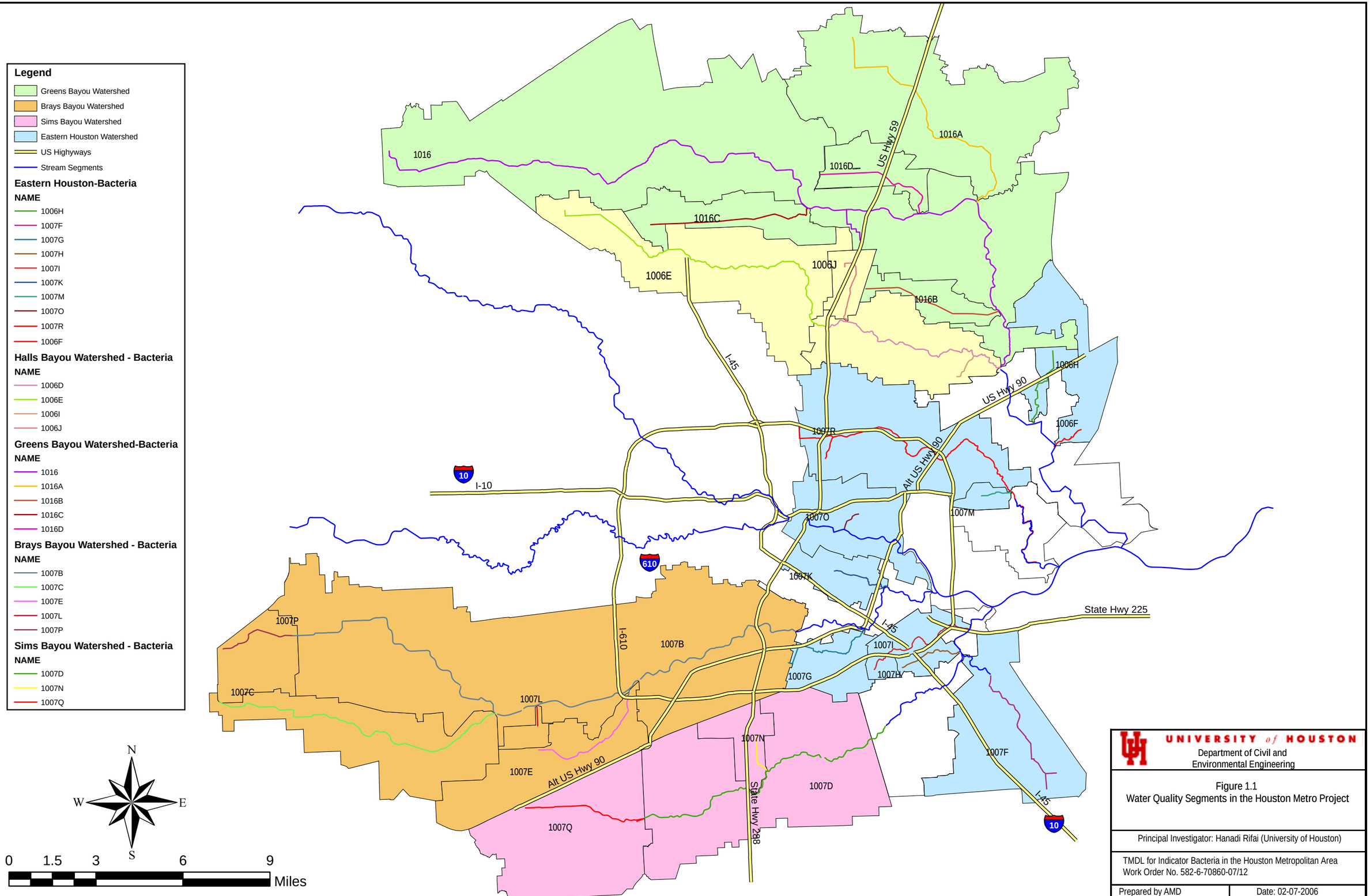
Twenty-seven segments in the general Houston Metropolitan Area (see Table 1.1) are considered impaired water bodies for contact recreation because they do not meet indicator bacteria (*Escherichia coli* (*E. coli*)) water quality standards. These segments are in a number of watersheds in the San Jacinto River basin including, Greens Bayou Watershed, Halls Bayou Watershed, Hunting Bayou Watershed, Brays Bayou Watershed, Sims Bayou Watershed, and the general Houston Ship Channel Watershed. For the purpose of TMDL development, the project has been subdivided into five sub-projects; Greens Bayou Watershed – Bacteria, Halls Bayou Watershed – Bacteria, Brays Bayou Watershed – Bacteria, Sims Bayou Watershed, and Eastern Houston – Bacteria (Figure 1.1). The Eastern Houston watershed contains all of the bacteria impaired segments in the Houston Ship Channel and Houston Ship Channel/Buffalo Bayou watersheds. All of these segments are fresh water bodies with contact recreation use and they drain into the tidally influenced Houston Ship Channel and Houston Ship Channel/Buffalo Bayou segments with non-contact recreation use.

Greens Bayou (1016) were placed on the Texas Clean Water Act 303(d) List in 1996 and the remaining 26 segments were listed in 2002. All of these segments were placed on the 303(d) list for not meeting contact recreation water quality standards. The purpose of this study is to provide the Texas Commission on Environmental Quality (TCEQ) with the information and assistance necessary for the preparation of a Total Maximum Daily Load (TMDL) for the indicator bacteria (*E. coli*) impairments.

The information gathered under this project will be used to develop the TMDL allocations. First, the TMDL allocations identify how much indicator bacteria (E. coli) the water bodies can assimilate and maintain the contact recreation standard (load capacity). Second, the TMDL allocations identify how much reduction is needed to the sources of indicator bacteria (E. coli) to reach the contact recreation standard. Reductions are identified for two broad categories of indicator bacteria sources, those sources that are covered by permits referred to as the waste load allocation (WLA) and those sources that are not covered by a permit referred to as the load allocation (LA). This relationship is referred to as the TMDL equation and it is expressed as: LC = LA + WLA.

Table 1.1 Water Quality Segments in the Metro area

TMDL Project Name	Segment Number	Segment Name
Eastern Houston - Bacteria	1006F	Big Gulch Above Tidal
	1006H	Spring Gully Above Tidal
	1007F	Berry Bayou Above Tidal
	1007G	Kuhlman Gully Above Tidal
	1007H	Pine Gully Above Tidal
	1007I	Plum Creek Above Tidal
	1007K	Country Club Bayou
	1007M	Unnamed Non-Tidal Tributary of Hunting Bayou
	1007O	Unnamed Non-Tidal Tributary of Buffalo Bayou
	1007R	Hunting Bayou Above Tidal
Greens Bayou Watershed – Bacteria	1016	Greens Bayou Above Tidal
	1016A	Garners Bayou
	1016B	Unnamed Tributary of Greens Bayou
	1016C	Unnamed Tributary of Greens Bayou
	1016D	Unnamed Tributary of Greens Bayou
Halls Bayou Watershed – Bacteria	1006D	Halls Bayou below US 59
	1006E	Halls Bayou above US 59
	1006I	Unnamed Tributary of Halls Bayou
	1006J	Unnamed Tributary of Halls Bayou
Brays Bayou Watershed – Bacteria	1007B	Brays Bayou Above Tidal
	1007C	Keegans Bayou above tidal
	1007E	Willow Waterhole Bayou Above Tidal
	1007L	Unnamed Non-Tidal Tributary of Brays Bayou
	1007P	Brays Bayou Above Tidal
Sims Bayou Watershed – Bacteria	1007D	Sims Bayou Above Tidal
	1007N	Unnamed Non-Tidal Tributary of Sims Bayou
	1007Q	Sims Bayou Above Tidal


Legend
Greens Bayou Watershed
Brays Bayou Watershed
Sims Bayou Watershed
Eastern Houston Watershed
US Highyways
Stream Segments
Eastern Houston-Bacteria
NAME
1006H
1007F
1007G
1007H
1007I
1007K
1007M
1007O
1007R
1006F
Halls Bayou Watershed - Bacteria
NAME
1006D
1006E
1006I
1006J
Greens Bayou Watershed-Bacteria
NAME
1016
1016A
1016B
1016C
1016D
Brays Bayou Watershed - Bacteria
NAME
1007B
1007C
1007E
1007L
1007P
Sims Bayou Watershed - Bacteria
NAME
1007D
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1007Q
1016
1016A
1016D
US Hwy 59
1016C
1006J
1006E
1016B
I-45
1006H
US Hwy 90
1006F
1007R
Alt US Hwy 90
I-10
1007O
1007M
610
1007K
State Hwy 225
1007P
I-610
1007B
I-45
1007I
1007G
1007H
1007C
1007L
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1007F
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Alt US Hwy 90
1007D
State Hwy 288
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Miles
UNIVERSITY of HOUSTON
Department of Civil and
Environmental Engineering
Figure 1.1
Water Quality Segments in the Houston Metro Project
Principal Investigator: Hanadi Rifai (University of Houston)
TMDL for Indicator Bacteria in the Houston Metropolitan Area
Work Order No. 582-6-70860-07/12
Prepared by AMD
Date: 02-07-2006

In 2000, the State of Texas adopted new bacteria standards for contact recreation. The *E. coli* indicator bacteria standard was adopted for contact recreation in place of the existing fecal coliform indicator bacteria. For fecal coliform, no sample should exceed 400 colony-forming units (cfu) per 100 mL for contact recreation. In addition, the geometric mean should be less than 200 cfu/100 mL. For *E. coli*, no sample should exceed 394 cfu/ 100 mL and the geometric mean should be less than 126 cfu/100 mL (30 Texas Administrative Code 307.7(b)(A)).

The overall objective of this project is to establish the TMDL allocation equation for the segments listed above.

There are four main tasks for WO 582-6-70860-12

1. Administer project;
2. Participate in stakeholder process;
3. Analyze FY06 data; and
4. Quality Assurance Project Plan (QAPP)/Sampling Plan/Data Management.

This report describes the progress for the period from January through March 2006 for the metro project.

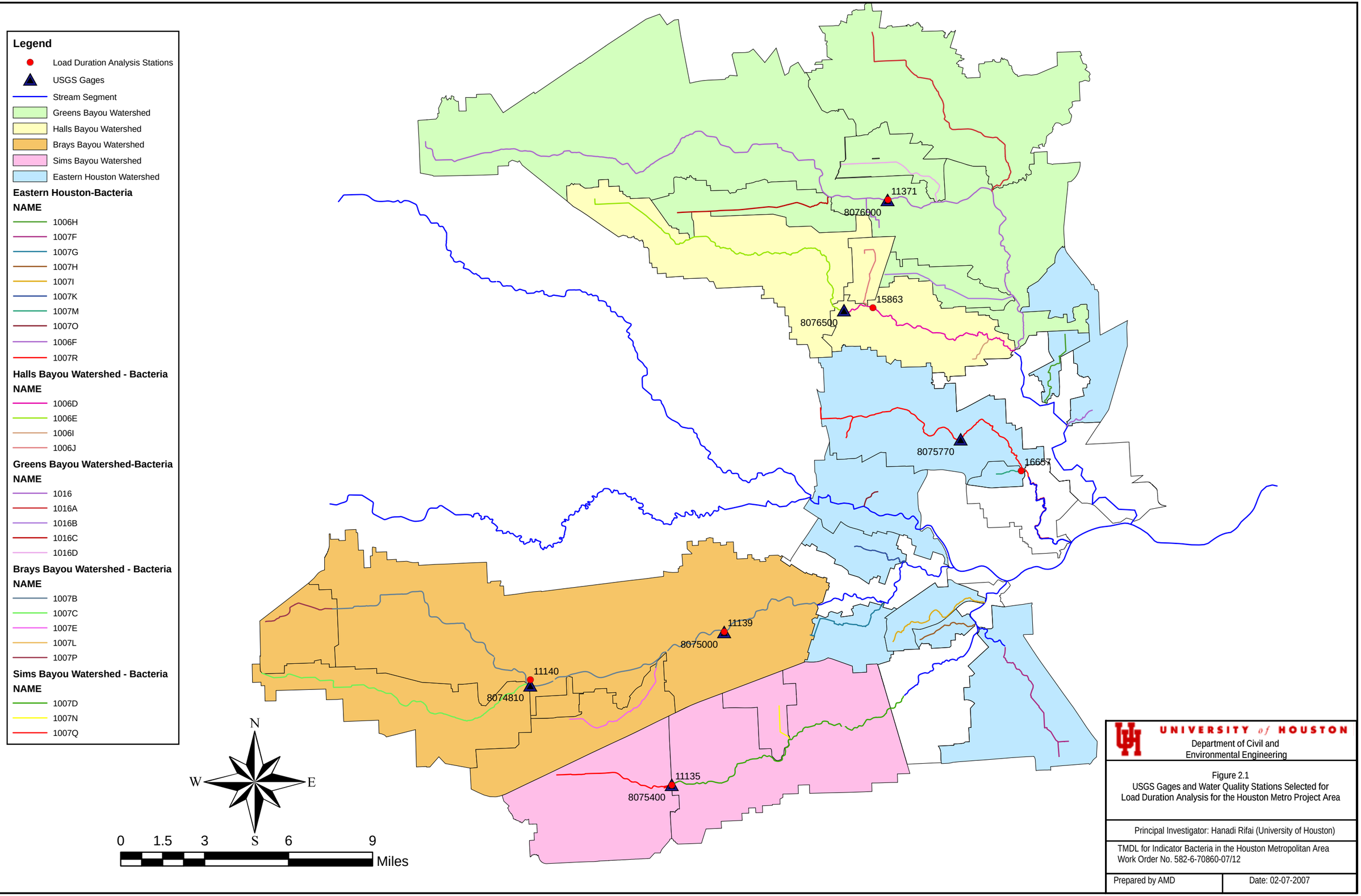
1.2 DESCRIPTION OF THE REPORT

This document constitutes the second quarterly report for Work Order No. 582-6-70860-12 of the Bacteria in the Houston Metropolitan Area TMDL Project. This report reflects the progress made towards all the tasks in the Project Work Plans listed previously. Chapter 2 presents the load duration curve analysis for historical bacteria data; Chapter 3 presents the results from the three sampling events conducted from May 06 through July 06, and Chapter 4 presents a summary and future activities.

CHAPTER 2

LOAD DURATION CURVE ANALYSIS FOR SELECT STATIONS IN HOUSTON METRO AREA USING HISTORICAL DATA

Load duration curves were developed using historical data for select stations in this project. The first step involved selection of a USGS gage located sufficiently close to the station for which duration curves would be constructed. Fig. 2.1 shows the USGS gages in the Metro area that were used along with the water quality stations selected for load duration analysis. Flow duration curves were constructed for the selected USGS gauges. Based on the flow data at a given gage, a load duration curve was constructed using all the existing historical data from the TCEQ website. Typically *E.coli* data were used in the analysis and fecal coliform data were used to construct separate load duration curves only when sufficient *E.coli* data were not available.


Legend
Load Duration Analysis Stations
USGS Gages
Stream Segment
Greens Bayou Watershed
Halls Bayou Watershed
Brays Bayou Watershed
Sims Bayou Watershed
Eastern Houston Watershed
Eastern Houston-Bacteria
NAME
1006H
1007F
1007G
1007H
1007I
1007K
1007M
1007O
1006F
1007R
Halls Bayou Watershed - Bacteria
NAME
1006D
1006E
1006I
1006J
Greens Bayou Watershed-Bacteria
NAME
1016
1016A
1016B
1016C
1016D
Brays Bayou Watershed - Bacteria
NAME
1007B
1007C
1007E
1007L
1007P
Sims Bayou Watershed - Bacteria
NAME
1007D
1007N
1007Q
11371
8076000
15863
8076500
8075770
16657
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Department of Civil and
Environmental Engineering
Figure 2.1
USGS Gages and Water Quality Stations Selected for
Load Duration Analysis for the Houston Metro Project Area
Principal Investigator: Hanadi Rifai (University of Houston)
TMDL for Indicator Bacteria in the Houston Metropolitan Area
Work Order No. 582-6-70860-07/12
Prepared by AMD
Date: 02-07-2007

2.1 GREENS BAYOU WATERSHED

For this watershed, USGS gage 8076000 was used for developing the load duration curve for station 11371. The flow duration curve for gage 8076000 shown in Fig. 2.2 is for the period from 1952 to 2007. The median flow at this gage is 28 cfs while the minimum and maximum flows range from 0 to 22300 cfs respectively (Table 2.1).

Having established the flow duration curve for the watershed, historical bacteria data were used for constructing load duration curves. Fecal coliform data available from 1982 to 2001 were used for station 11371, the only station being used for load duration analysis in Greens Bayou. The target loads were obtained by multiplying flow with the fecal coliform concentration. The data in Figure 2.3 show that exceedances above the standard are frequent under high flow to intermediate flow conditions reflecting contributions from rainfall-runoff processes. However, the lack of bacteria data under low flow conditions makes it difficult to comment on the presence of dry – weather sources.

Table 2.1 Summary Statistics for USGS Gage 8076000

Statistic	*Value*
Mean (cfs)	86
Median (cfs)	28
Minimum (cfs)	0
Maximum (cfs)	22300
10th percentile	3
20th percentile	6.3
30th percentile	13
70th percentile	42
80th percentile	64
Standard Deviation	327
Count	19826
Period of record	1952 - 2007

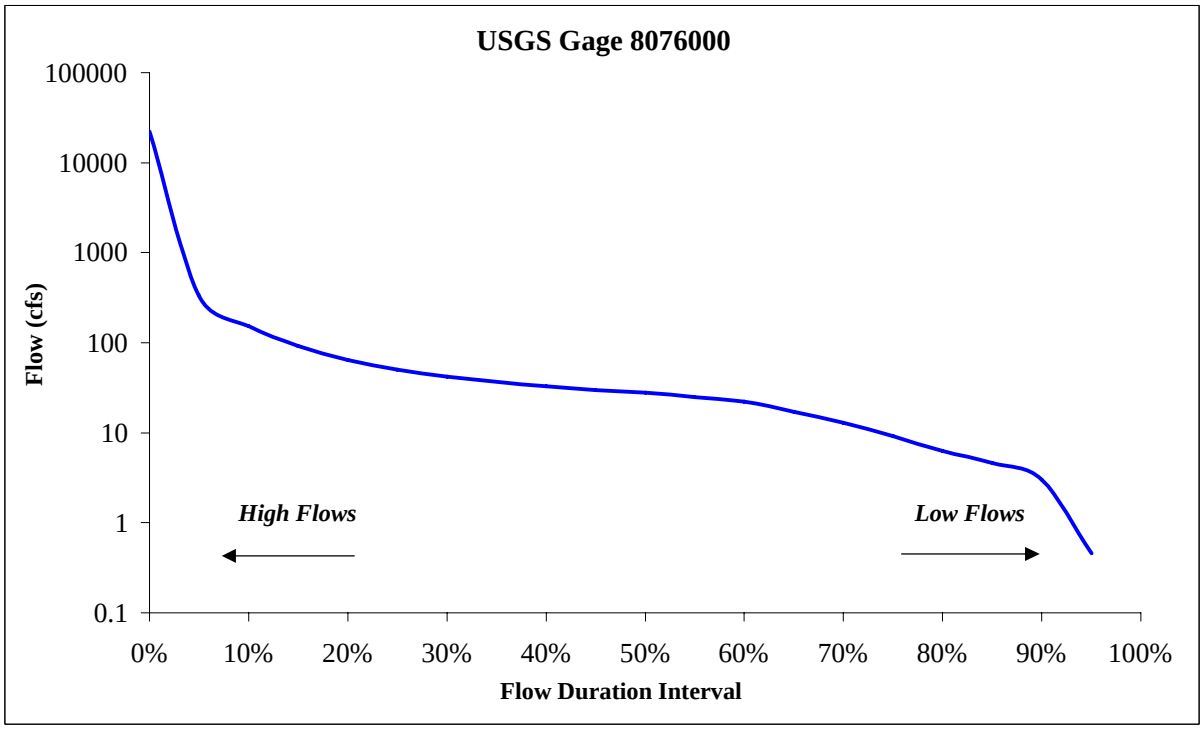


Figure 2.2 Flow Duration Curve for gage 8076000 in Greens Bayou watershed

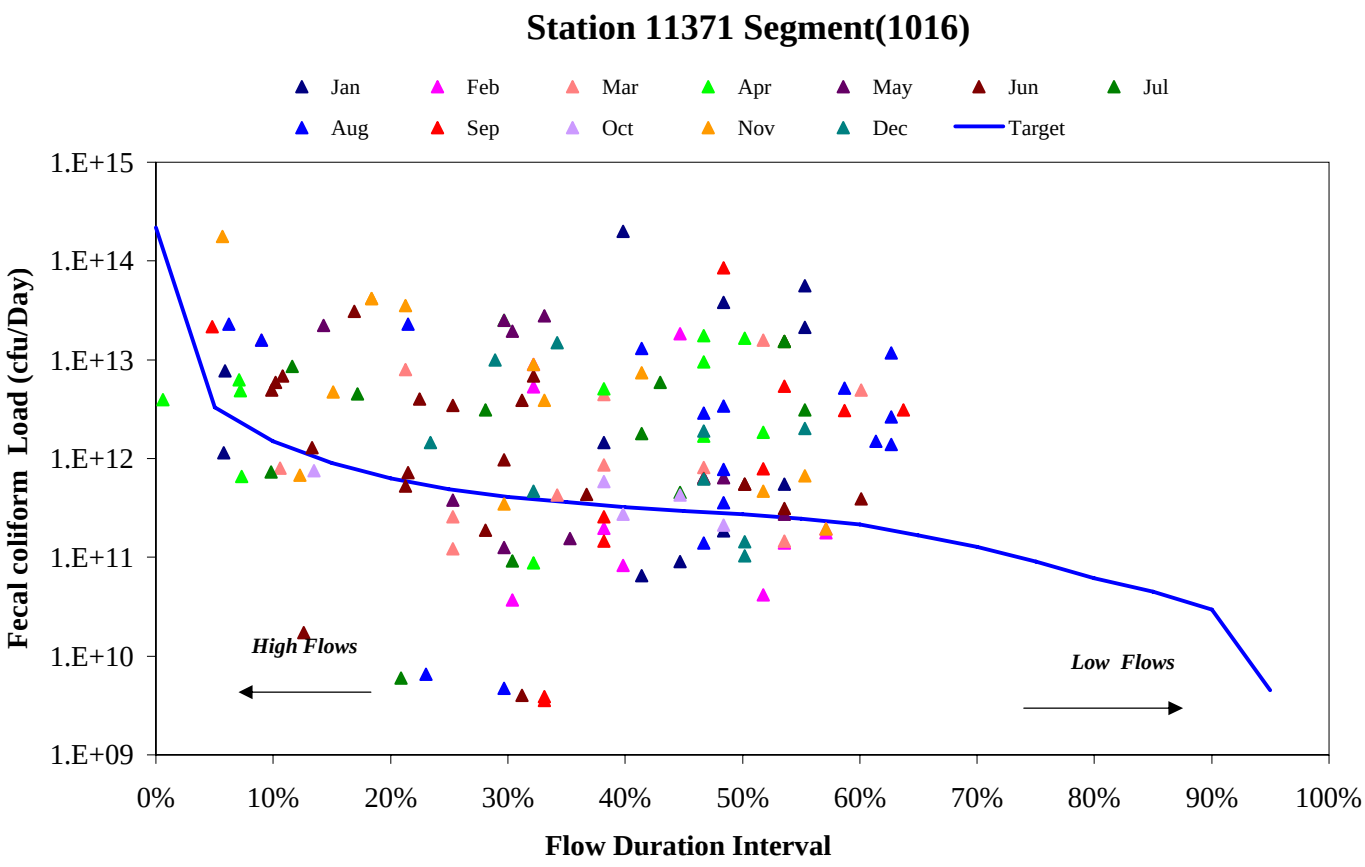


Figure 2.3 Load Duration Curve for Historical Data for Greens Bayou watershed

2.2 HALLS BAYOU WATERSHED

For this watershed, USGS gage 8076500 was used for developing the load duration curve for station 15863. The flow duration curve for gage 8076500 shown in Fig. 2.4 is for the period from 1952 to 2007. The median flow at this gage is 10 cfs while the minimum and maximum flows range from 0 to 2800 cfs respectively (Table 2.2).

For this watershed, *E.coli* data for the period from 2001 to 2004 were used in generating the load duration curves. As can be seen, only station 15863 was used in the load duration curve analysis (Fig. 2.5). Generally, the target bacteria load is exceeded under high to intermediate flow conditions. Information is not available for low flow conditions. The absence of data under low flow conditions does not preclude the presence of dry – weather sources in this watershed; however, exceedances under high flow conditions support the presence of bacteria loads from rainfall – runoff processes.

Table 2.2 Summary Statistics for USGS Gage 8076500

Statistic	*Value*
Mean	34
Median	10
Minimum	0
Maximum	2800
10th percentile	1.3
20th percentile	3.3
30th percentile	6
70th percentile	16
80th percentile	24
Standard Deviation	115
Count	17313
Period of record	1952 - 2007

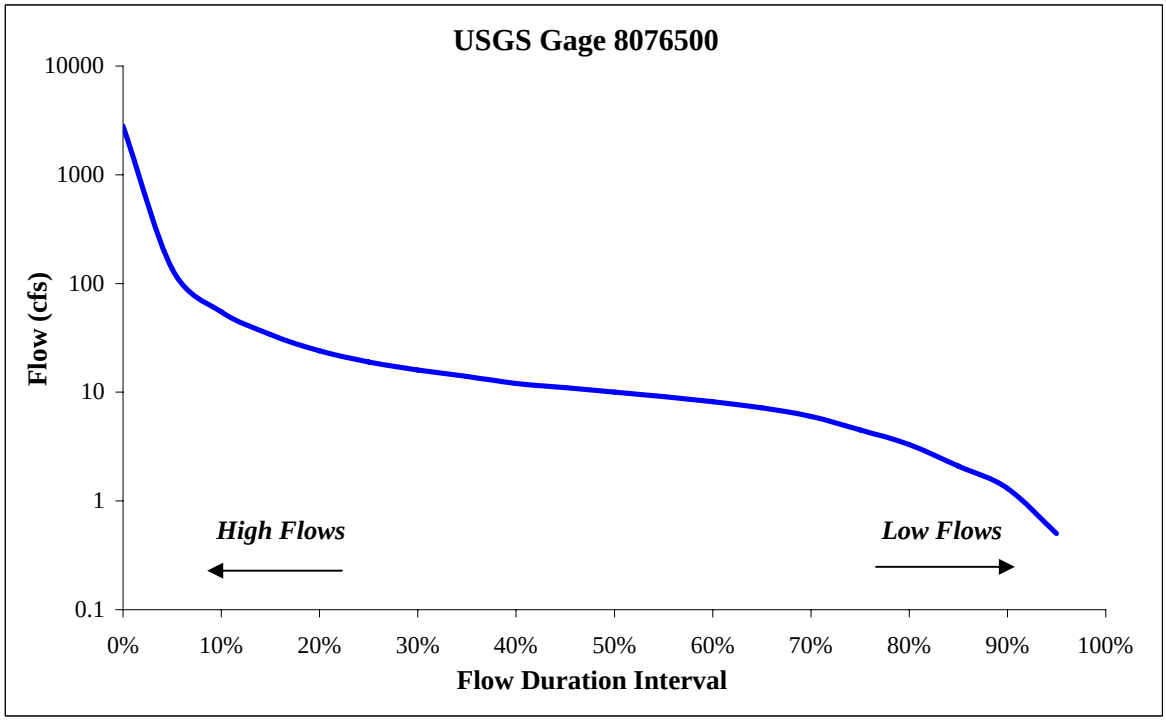


Figure 2.4 Flow Duration Curve for gage 8076500 in Halls Bayou watershed

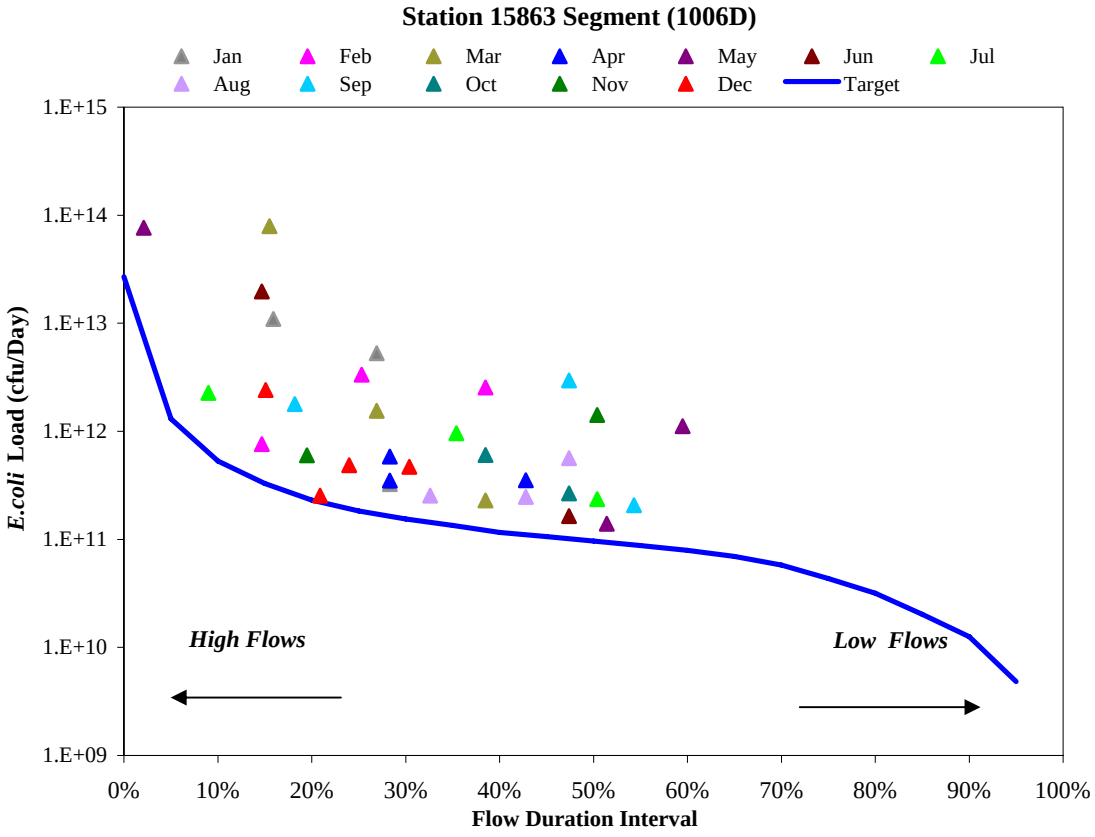


Figure 2.5 Load Duration Curve for Historical Data for Halls Bayou watershed

2.3 BRAYS BAYOU WATERSHED

Flow data from USGS gages 8075000 and 8074810 were used for constructing load duration curves for Brays bayou. The flow duration curves for the analyzed gages are shown in Fig. 2.6. The USGS flow gages and the stations analyzed in Brays Bayou are summarized in Table 2.3. The median flows at gages 8075000 and 8074810 are 89 and 76 cfs respectively (Table 2.4A & B).

Table 2.3 USGS Gages and Indicators for Select Stations in Brays Bayou

Station	USGS Gage	Indicator/Target Used
11139	8075000	*E.coli*./394 MPN/100mL
11140	8074810	Fecal coliform/400 MPN/100mL

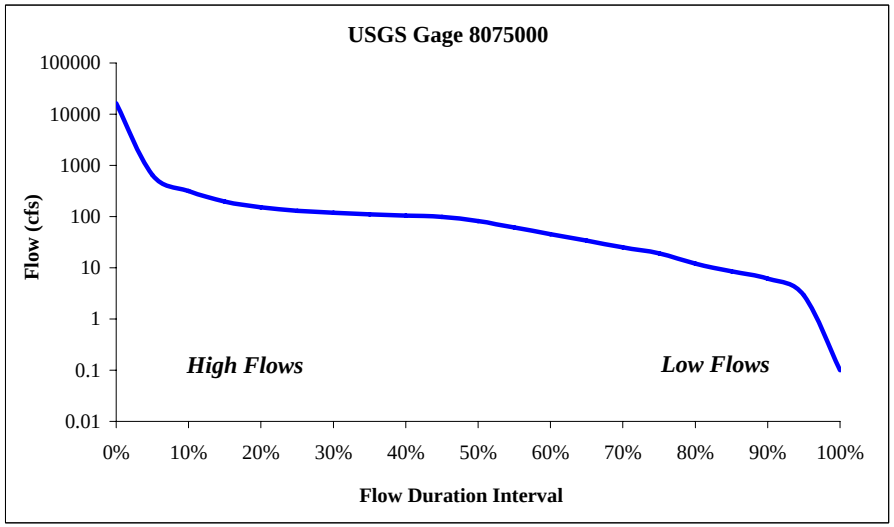
Fig. 2.7 depicts the load duration curves for the Brays Bayou watershed. It can be observed that station 11140 exhibits frequent exceedances throughout the entire flow regime. There were no data for low flow at station 11139 so no conclusions could be made about low flows at this station.

Table 2.4A Summary Statistics for USGS Gage 8075000

Statistic	*Value*
Mean	179
Median	89
10th percentile	6
20th percentile	13
30th percentile	27
70th percentile	121
80th percentile	155
Minimum	0
Maximum	16300
Standard Deviation	507
Count	25750
Period of Record	1936 - 2007

Table 2.4B Summary Statistics for USGS Gage 8074810

Statistic	*Value*
Mean	180
Median	76
10th percentile	60
20th percentile	64
30th percentile	67
70th percentile	99
80th percentile	151
Minimum	8
Maximum	7310
Standard Deviation	385
Count	4813
Period of Record	1989 - 2007



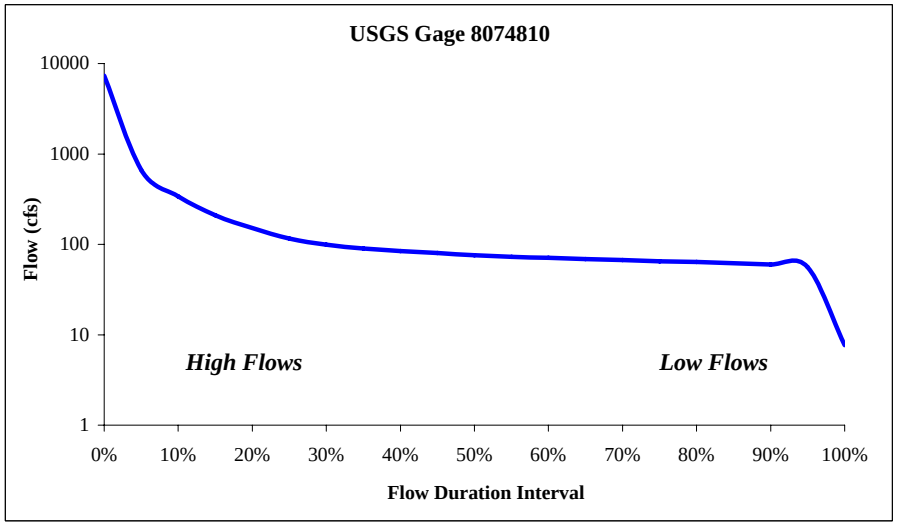
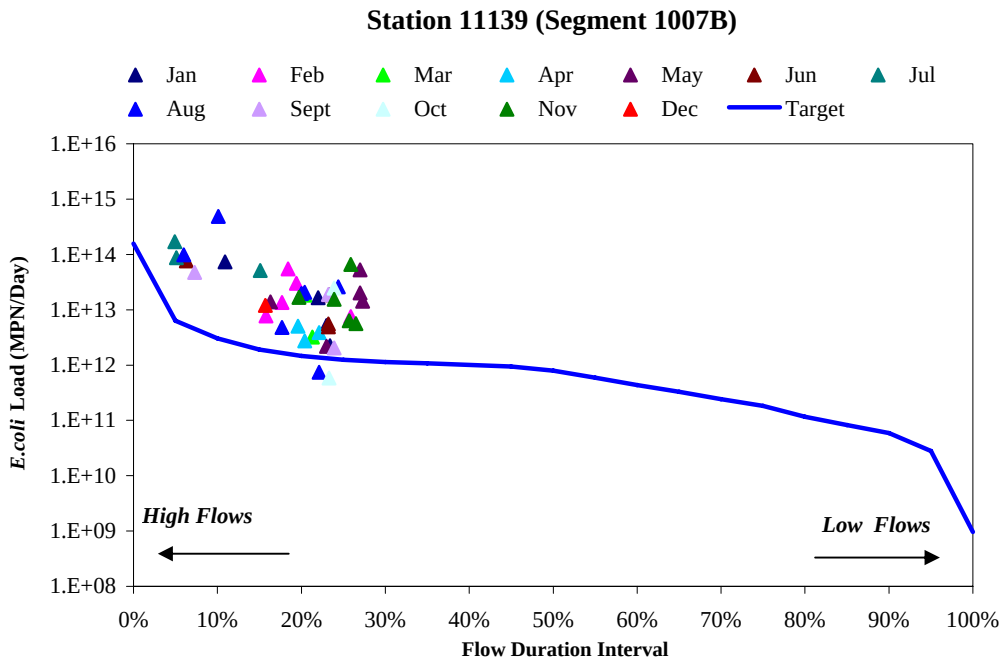


Figure 2.6 Flow Duration Curves for gages 8075000 and 8074810 in Brays Bayou watershed



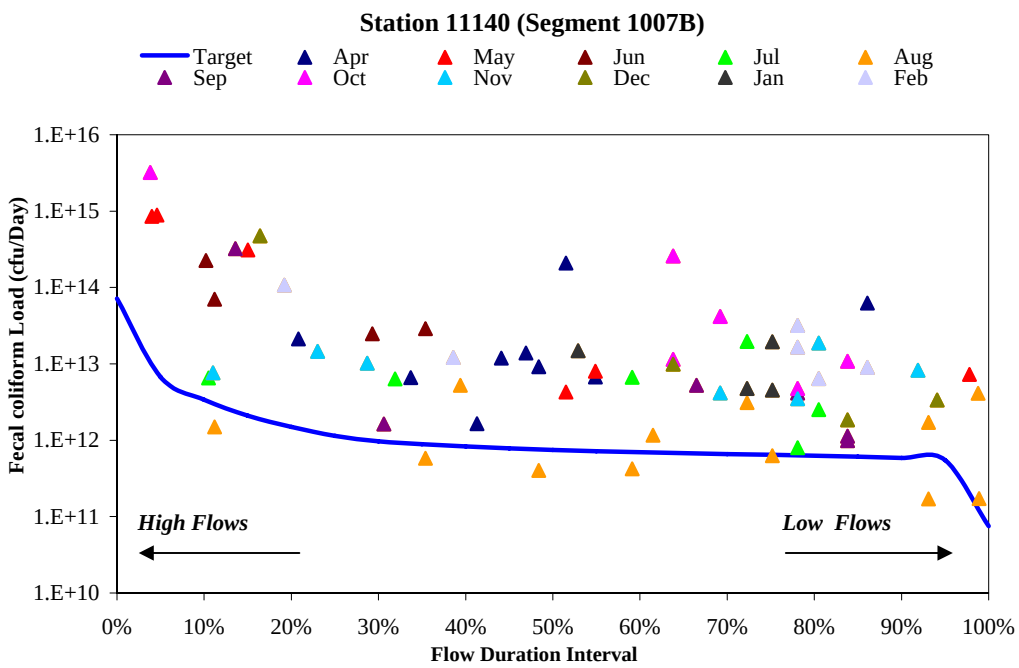


Figure 2.7 Load Duration Curves for Historical Data for Brays Bayou watershed

2.4 SIMS BAYOU WATERSHED

For this watershed, USGS gage 8075400 was used for load duration analysis. The flow duration curve is depicted in Fig. 2.8. The median flow at gage 8075400 is 12 cfs (Table 2.5). A load duration curve was constructed for station 11135 using *E.coli* data available from 2001 – 2004 (Fig.2.9). The load duration curve shows that most of the gathered data are in the low flow range with almost no samples collected during high flows thus it was not possible to make definitive conclusions about the sources of indicator bacteria.

Table 2.5 Summary Statistics for USGS Gage 8075400

Mean	34
Median	12
10th percentile	6.2
20th percentile	7.6
30th percentile	8.8
70th percentile	15
80th percentile	21
Standard Deviation	124
Minimum	1.5
Maximum	4650
Count	13429
Period Of Record	1964 - 2007

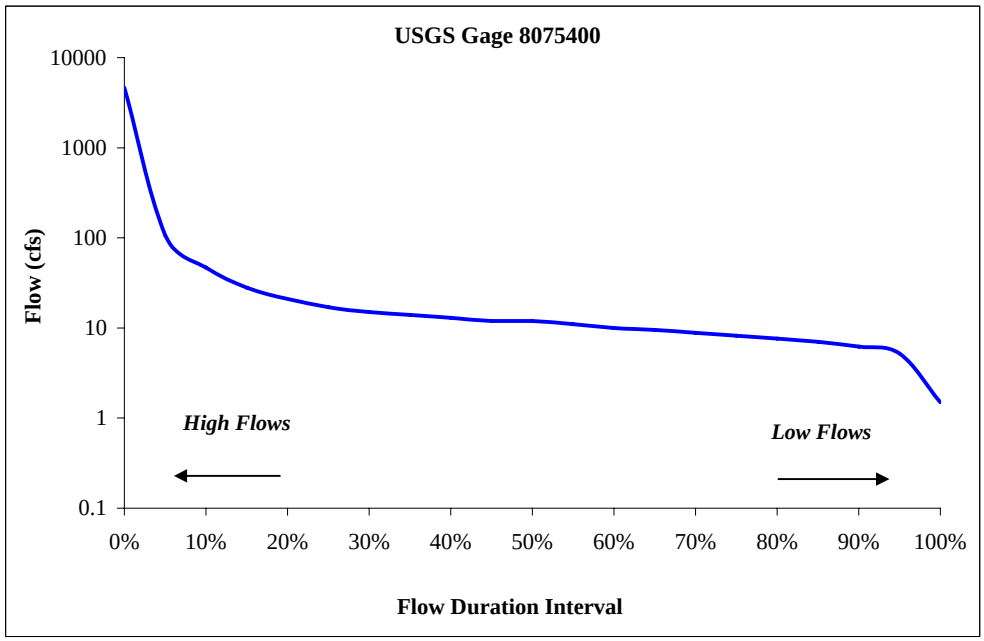


Figure 2.8 Flow Duration Curve for USGS Gage 8075400 in Sims Bayou Watershed

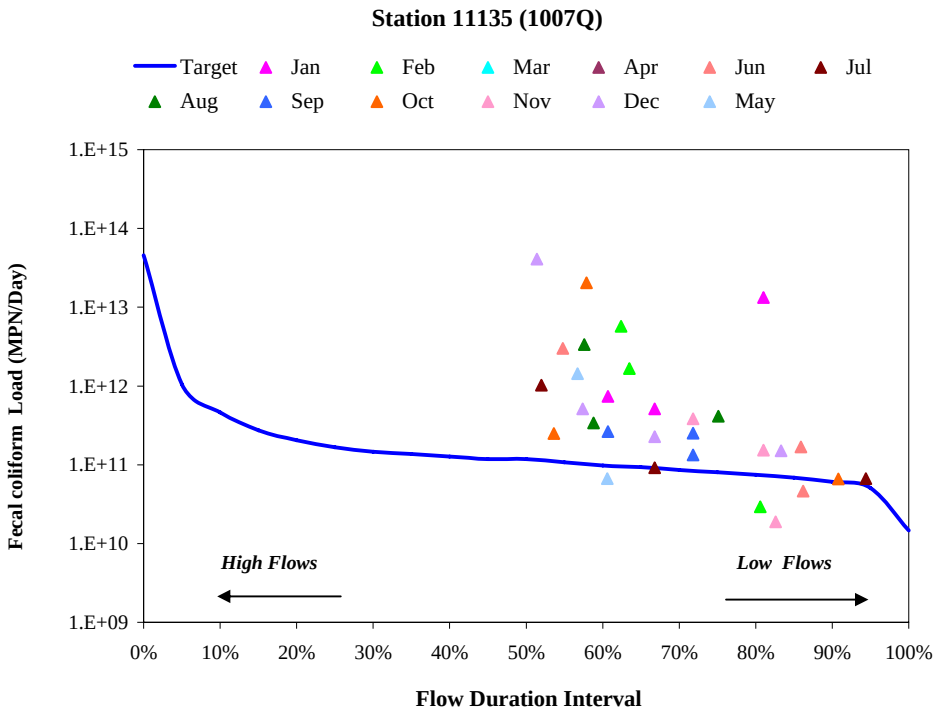


Figure 2.9 Load Duration Curves for Historical Data for Sims Bayou watershed

2.5 EASTERN HOUSTON

For Eastern Houston watershed, USGS gage 8075770 was used for the load duration curve analysis. The median flow at this gage is 7.5 cfs while the minimum and maximum flows range from 0.88 to 2950 cfs respectively (Table 2.6). The flow duration curve for gage 8075770 is depicted in Fig. 2.10. The Eastern Houston watershed has only 2 USGS gages located in segments 1007R and 1007F and only 1 station could be incorporated in the load duration analysis. Although station 16657 is not co-located with gage 8075770, it is the nearest water quality gage that could be used. The data shown in Figure 2.11 indicate that some exceedances occur at all flow ranges suggesting both dry - weather and wet – weather inputs in this watershed.

Table 2.6 Summary Statistics for USGS Gage 8075770

Statistic	Value
Statistic	Value
Mean	27
Median	8
10th percentile	3.4
20th percentile	4.3
30th percentile	5.2
70th percentile	12
80th percentile	19
Standard Deviation	90
Minimum	0.88
Maximum	2950
Period of Record	1964 -2007
Count	15644

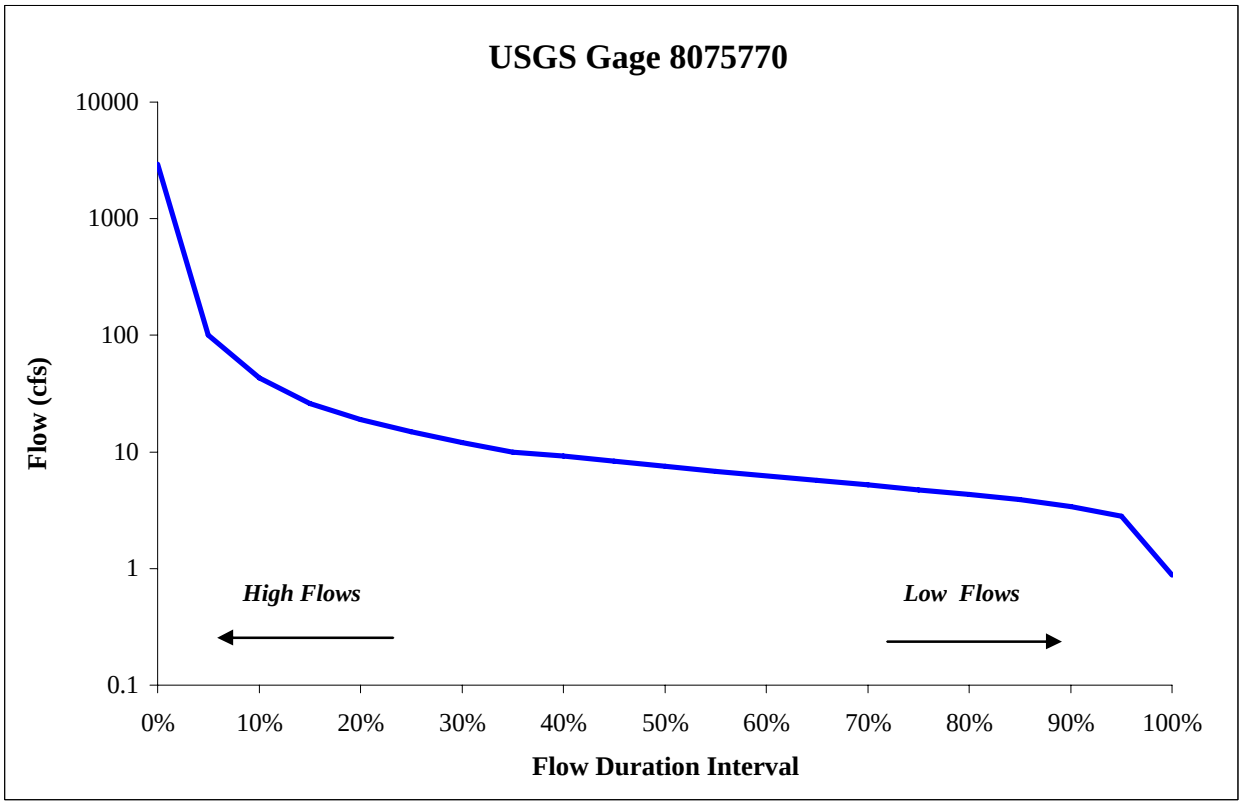


Figure 2.10 Flow Duration Curve for USGS Gage 8075770 in Eastern Houston Watershed

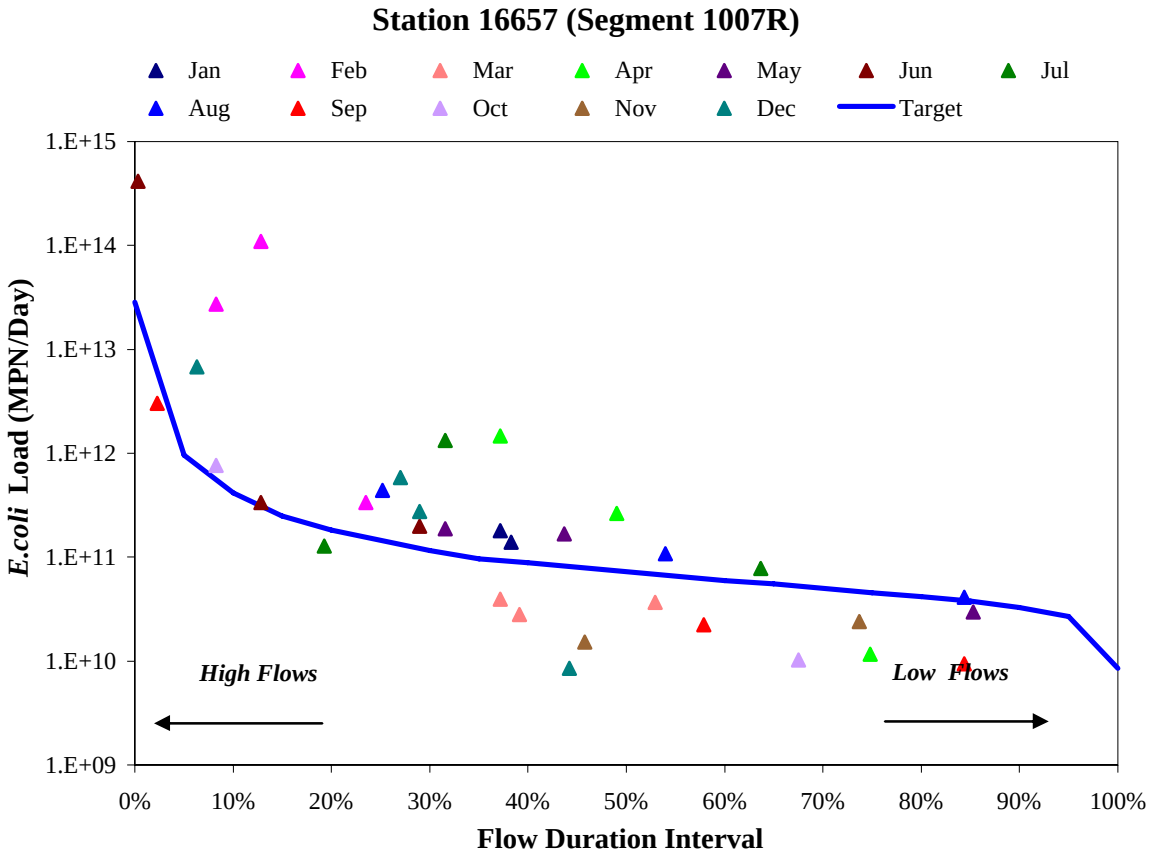


Figure 2.11 Load Duration Curves for Historical Data for Eastern Houston watershed

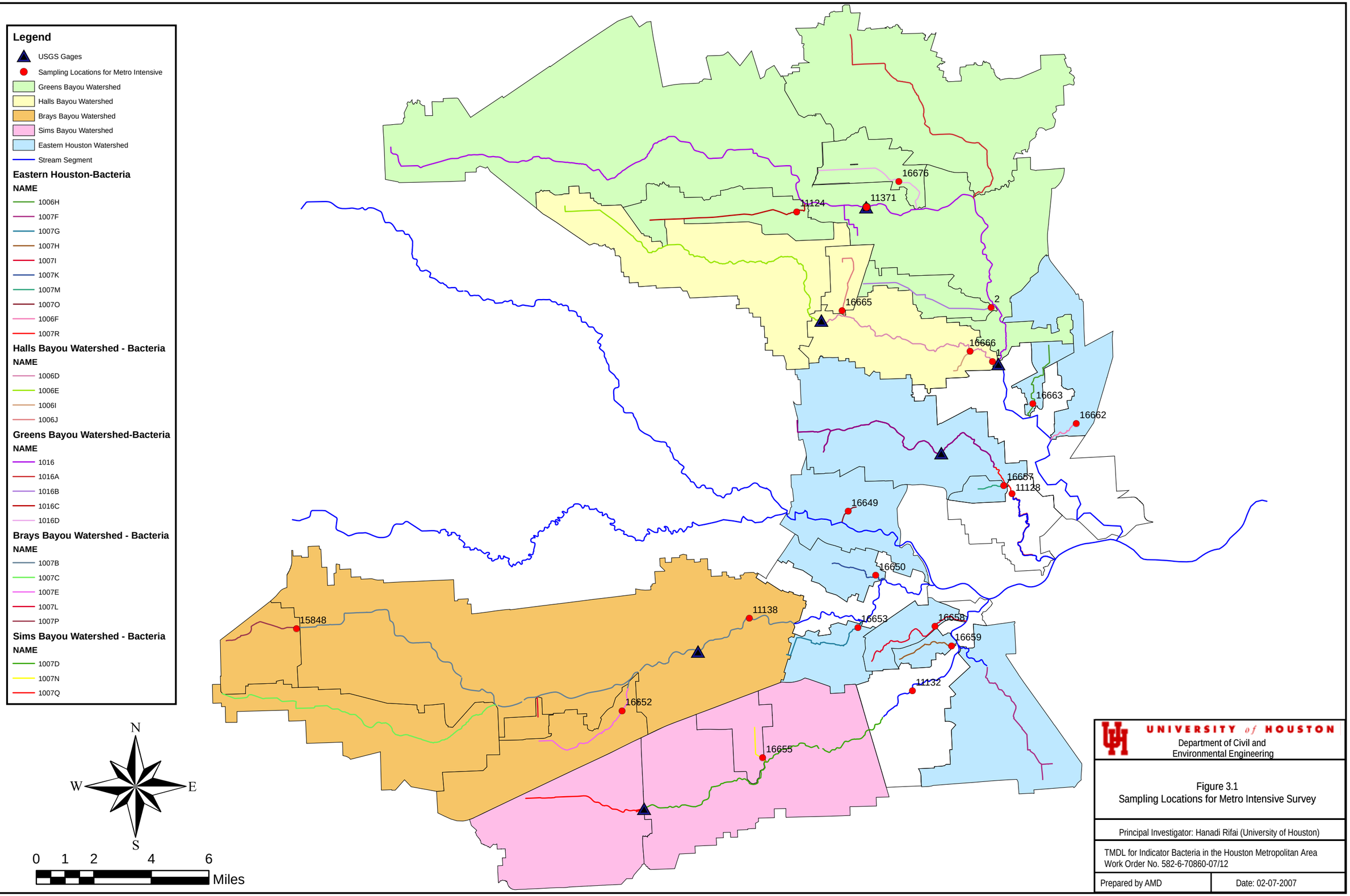
CHAPTER 3

DATA ANALYSIS FOR INTENSIVE SURVEYS

A total of three intensive surveys were conducted during the period from May 06 through July 06 to collect flow and *E.coli* data at 21 locations. Fig.3.1 shows the location of the sampling stations and Table 3.1 shows the data collection frequency. This chapter will focus on presenting and analyzing the data from the intensive surveys.

3.1 INTENSIVE SURVEY # 1

The first intensive survey could not be classified as a dry weather event because rainfall occurred on May 14, 06 prior to the sampling event. The magnitude of the rainfall 5 days preceding sampling and during the sampling period is shown in Table 3.2. As can be seen, the accumulation of rainfall on subsequent days was zero. The observations for *E.coli* and TSS measured at each of the stations are summarized in Table 3.3. The YSI readings measured each day of Intensive Survey # 1 are summarized in Table 3.4. For station 16649, standing water was sampled since there was no observable flow in the bayou. Conditions of no detectable flow represent a critical condition especially in the development of load duration because loads cannot be calculated. In addition, stations such as 16676, TBD # 2, 16666, 16652, 16655, 16659, and 16657 have flow values in the range of 0.01cfs to 3 cfs.



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Department of Civil and Environmental Engineering

Figure 3.1
Sampling Locations for Metro Intensive Survey

Principal Investigator: Hanadi Rifai (University of Houston)

TMDL for Indicator Bacteria in the Houston Metropolitan Area
Work Order No. 582-6-70860-07/12

Prepared by AMD | Date: 02-07-2007

Table 3.1 Monitoring Sites and Frequencies

Location ID	TCEQ Short Description	Segment	Monitoring frequencies				
			Field parameters[a]	Flow	*E. Coli* in water	Turbidity	TSS
20023[b]	Halls Bayou at Mouth	1006D	15-18	15-18	15-18	15-18	15-18
16662	Big Gulch at Wallisville Rd	1006F	15-18	15-18	15-18	15-18	15-18
16663	Spring Gully at Barnesworth D	1006H	15-18	15-18	15-18	15-18	15-18
16666	Trib Halls Bayou at Talton St	1006I	15-18	15-18	15-18	15-18	15-18
16665	Trib Halls Bayou at Langley R	1006J	15-18	15-18	15-18	15-18	15-18
11138	Brays Bayou at Almeda Rd	1007B	15-18	15-18	15-18	15-18	15-18
11132	Sims Bayou at Telephone (SH35)	1007	15-18	15-18	15-18	15-18	15-18
16652	Willow Waterhole at Mcdermed	1007E	15-18	15-18	15-18	15-18	15-18
16653	Kuhlman Gully at Brock St	1007G	15-18	15-18	15-18	15-18	15-18
16659	Pine Gully at Old Galveston R	1007H	15-18	15-18	15-18	15-18	15-18
16658	Plum Creek at Old Galveston R	1007I	15-18	15-18	15-18	15-18	15-18
16650	Country Club Bayou at Wayside	1007K	15-18	15-18	15-18	15-18	15-18
16657	Trib of Hunting Bayou at Ralston	1007M	15-18	15-18	15-18	15-18	15-18
16655	Trib of Hunting Bayou at Ralston	1007N	15-18	15-18	15-18	15-18	15-18
16649	Trib of Buffalo Bayou/Clinton Dr.	1007O	15-18	15-18	15-18	15-18	15-18
15848	Brays Bayou at SH 6	1007P	15-18	15-18	15-18	15-18	15-18
11128	Hunting Bayou at IH 10	1007R	15-18	15-18	15-18	15-18	15-18
15438	Greens Bayou at El Dorado Golf Course	1016	15-18	15-18	15-18	15-18	15-18
11371[c]	Greens Bayou at I59 NW Corner access	1016	15-18	15-18	15-18	15-18	15-18
20024[d]	Unnamed trib of Halls Bayou at Mouth	1016B	15-18	15-18	15-18	15-18	15-18
11124	Unnamed trib of Greens Bayou	1016C	15-18	15-18	15-18	15-18	15-18
16676	Unnamed trib of Greens Bayou	1016D	15-18	15-18	15-18	15-18	15-18

[a] Field parameters include temperature, DO, pH, conductivity, and flow severity

[b] Defined following the SLOC request processed by TCEQ. (Initial temporary ID TBD-01)

[c] Site selected in place of 15438 due to accessibility difficulty with 15438.

[d] Defined following the SLOC request processed by TCEQ. (Initial temporary ID TBD-02)

Table 3.2 Rainfall Totals for Metro Intensive # 1

GAGE NAME	GageID	Rainfall Totals for a 24 hr period										
		05/09/06	05/10/06	05/11/06	05/12/06	05/13/06	05/14/06	05/15/06	05/16/06	05/17/06	05/18/06	05/19/06
C106 Berry Bayou @ Nevada	310	0	0	0	0	0	0.51	0	0	0	0	0
C106 Berry Bayou @ Forest	320	0	0	0	0	0	0.16	0	0	0	0	0
C100 Sims Bayou @ Telepho	340	0	0	0	0	0	0.35	0	0	0	0	0
C100 Sims Bayou @ Martin	360	0	0	0	0	0	0.00	0	0	0	0	0
C100 Sims Bayou @ SH-288	370	0	0	0	0	0	0.00	0	0	0	0	0
C100 Sims Bayou @ Hiram-C	380	0	0	0	0	0	0.00	0	0	0	0	0
D109 Harris Gulley @ S. M	400	0	0	0	0	0	0.31	0	0	0	0	0
D100 Brays Bayou @ Lawnda	410	0	0	0	0	0	0.43	0	0	0	0	0
D100 Brays Bayou @ South	420	0	0	0	0	0	0.04	0	0	0	0	0
D100 Brays Bayou @ Stella	430	0	0	0	0	0	0.00	0	0	0	0	0
D100 Willow Watering Hole	435	0	0	0	0	0	0.00	0	0	0	0	0
D100 Brays Bayou @ Rice	440	0	0	0	0	0	0.00	0	0	0	0	0
D100 Brays Bayou @ Gessne	460	0	0	0	0	0	0.00	0	0	0	0	0
D100 Brays Bayou @ Beltwa	465	0	0	0	0	0	0.00	0	0	0	0	0
D100 Brays Bayou @ Belle	470	0	0	0	0	0	0.00	0	0	0	0	0
D100 Brays Bayou @ Bellai	475	0	0	0	0	0	0.00	0	0	0	0	0
D118 Keegans Bayou @ Roar	480	0	0	0	0	0	0.00	0	0	0	0	0
D100 Brays Bayou @ SH 6	485	0	0	0	0	0	0.00	0	0	0	0	0
D118 Keegans Bayou @ Keeg	490	0	0	0	0	0	0.00	0	0	0	0	0
H100 Hunting Bayou @ IH-1	820	0	0	0	0	0	0.43	0	0	0	0	0
H100 Hunting Bayou @ Loop	830	0	0	0	0	0	0.87	0	0	0	0	0
H100 Hunting Bayou @ Lock	840	0	0	0	0	0	1.14	0	0	0	0	0
Reliant Park	1020	0	0	0	0	0	0.20	0	0	0	0	0
P100 Greens Bayou @ Mt. H	1600	0	0	0	0	0	0.98	0	0	0	0	0
P100 Greens Bayou @ Norma	1610	0	0	0	0	0	0.55	0	0	0	0	0
P100 Greens Bayou @ Ley R	1620	0	0	0	0	0	0.83	0	0	0	0	0
P130 Garners Bayou @ Belt	1630	0	0	0	0	0	0.87	0	0	0	0	0
P100 Greens Bayou @ US-59	1640	0	0	0	0	0	0.39	0	0	0	0	0
P100 Greens Bayou @ Beltw	1645	0	0	0	0	0	0.43	0	0	0	0	0
P130 Garners @ Rankin Rd	1650	0	0	0	0	0	0.39	0	0	0	0	0
P100 Greens Bayou @ Knobc	1660	0	0	0	0	0	0.55	0	0	0	0	0
P100 Greens Bayou @ Bamme	1665	0	0	0	0	0	0.04	0	0	0	0	0
P100 Greens Bayou @ Cutte	1670	0	0	0	0	0	0.04	0	0	0	0	0
P118 Halls Bayou @ Tidwel	1675	0	0	0	0	0	0.63	0	0	0	0	0
P118 Halls Bayou @ Jensen	1680	0	0	0	0	0	0.83	0	0	0	0	0
P100 Greens Bayou @ Tidwe	1685	0	0	0	0	0	0.83	0	0	0	0	0
P118 Halls Bayou @ Airlin	1690	0	0	0	0	0	0.98	0	0	0	0	0
SH 288 @ MacGregor	3010	0	0	0	0	0	0.43	0	0	0	0	0
IH 45 S HOV @ DwT Terminu	3020	0	0	0	0	0	0.67	0	0	0	0	0
Galveston Rd @ Allendale	3030	0	0	0	0	0	0.24	0	0	0	0	0
IH 10 @ Normandy	3060	0	0	0	0	0	0.43	0	0	0	0	0
SH 288 @ Loop 610	3070	0	0	0	0	0	0.04	0	0	0	0	0
IH 45 W Road HOV Entrance	3520	0	0	0	0	0	1.10	0	0	0	0	0
Metro Rail @ Fannin	3990	0	0	0	0	0	0.12	0	0	0	0	0
Brazos River @ SH 36	4310	0	0	0	0	0	0.28	0	0	0	0	0

Higlighted columns indicate the sampling days

Table 3.3 *E.coli* , TSS and Flow Data from Intensive Survey # 1

Watershed	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	*Flow (cfs)*	*TSS(mg/L)*
GREENS BAYOU	1016C	5/15/2006	11124	8:55	13905	5.20	8.8
		5/16/2006		8:45	1519	1.56	4.4
		5/17/2006		14:40	1497	1.13	30.4
		5/18/2006		8:50	1523	0.47	<4.0
		5/18/2006		17:44	1877	0.85	4.4
		5/19/2006		14:45	1195	1.50	<4.0
	1016D	5/15/2006	16676	9:55	12640	1.33	7.6
		5/16/2006		9:29	4413	0.36	<4.0
		5/17/2006		15:15	1316	0.31	5.6
		5/18/2006		9:31	196	0.11	<4.0
		5/18/2006		18:14	155	0.41	<4.0
		5/19/2006		15:20	118	0.83	<4.0
	1016	5/15/2006	11371	10:35	24385	87.5	72
		5/16/2006		10:00	20435	32.4	23.6
		5/17/2006		13:30	554	26.0	57.6
		5/18/2006		10:10	398	20.9	25.6
		5/19/2006		8:12	186	27.0	24.4
		5/19/2006		15:40	95	24.1	18
	1016B	5/15/2006	20024 (TBD-02)	12:15	46390	0.44	12.8
		5/16/2006		11:02	702	-0.02	<4.0
		5/16/2006		17:01	458	0.10	<4.0
		5/17/2006		12:50	475	0.10	4
		5/18/2006		11:23	140	0.04	4.4
		5/19/2006		9:43	144	0.07	<4.0
HALLS BAYOU	1006J	5/15/2006	16665	11:40	42895	2.96	11.6
		5/16/2006		10:28	1235	1.44	<4.0
		5/17/2006		15:45	1440	0.14	<4.0
		5/18/2006		10:47	670	0.12	<4.0
		5/19/2006		9:13	823	0.07	4
		5/19/2006		16:16	1009	0.04	4.4
	1006D	5/15/2006	20023 (TBD-01)	13:25	89840	64.2	29.2
		5/16/2006		11:58	1646	26.1	7.6
		5/16/2006		18:01	811	24.4	9.6
		5/17/2006		11:05	1045	15.8	123
		5/18/2006		12:10	112	12.1	8
		5/19/2006		10:26	88	13.2	6
	1006I	5/15/2006	16666	12:45	98350	0.08	44.4
		5/16/2006		11:28	1537	0.01	8.8
		5/16/2006		17:46	472	0.01	<4.0
		5/17/2006		11:27	1035	0.00	4
		5/18/2006		11:45	1194	-0.02	4.4
		5/19/2006		10:05	384	-0.03	4.4

Table 3.3 *E.coli* , TSS and Flow Data from Intensive Survey # 1 - Cont'd

Watershed	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	*Flow (cfs)*	*TSS(mg/L)*
BRAYS BAYOU	1007P	5/15/2006	15848	9:10	649	3.72	63.2
		5/16/2006		9:10	368	8.05	83.2
		5/17/2006		12:30	157	10.5	37.2
		5/18/2006		12:15	106	2.51	34.8
		5/18/2006		17:45	323	4.97	32
		5/19/2006		8:55	491	2.99	50.4
	1007E	5/15/2006	16652	9:55	986	0.06	9.6
		5/16/2006		10:00	2795	0.07	8
		5/17/2006		11:50	777	0.84	4.8
		5/17/2006		18:45	578	0.78	<4.0
		5/18/2006		13:00	676	0.57	6
		5/19/2006		9:55	1636	0.97	<4.0
	1007B	5/15/2006	11138	15:30	4748	60.3	24
		5/16/2006		14:15	1029	105	26.8
		5/16/2006		17:55	1096	115	26
		5/17/2006		15:05	2004	107	26.8
		5/18/2006		15:45	704	112	19.6
		5/19/2006		11:05	4310	170	26
SIMS BAYOU	1007N	5/15/2006	16655	10:45	576	0.51	26.8
		5/16/2006		10:40	380	0.94	42.8
		5/17/2006		11:12	491	0.25	15.2
		5/17/2006		17:35	83	1.15	12.4
		5/18/2006		14:10	71	0.42	16.4
		5/19/2006		10:20	278	0.04	13.6
	1007	5/15/2006	11132	13:10	809	17.2	72
		5/16/2006		11:15	650	3.55	57.6
		5/17/2006		9:25	488	-6.15	69.2
		5/17/2006		16:55	366	67.1	57.6
		5/18/2006		15:00	466	61.7	64.8
		5/18/2006		18:55	441	44.9	68

Table 3.3 *E.coli* , TSS and Flow Data from Intensive Survey # 1 - Cont'd

Watershed	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	*Flow (cfs)*	*TSS(mg/L)*
EASTERN HOUSTON WATERSHED	1007H	5/15/2006	16659	14:04	92080	0.02	7.6
		5/16/2006		12:05	1106	0.80	<4.0
		5/17/2006		10:35	947	-0.05	4
		5/17/2006		16:15	613	0.30	<4.0
		5/18/2006		8:35	650	0.11	<4.0
		5/19/2006		13:30	411	-0.03	<4.0
	1007I	5/15/2006	16658	14:35	>241960	1.20	85.6
		5/16/2006		12:25	>241960	1.72	8.8
		5/16/2006		17:00	30745	1.50	6.8
		5/17/2006		15:50	13115	1.02	<4.0
		5/18/2006		9:20	6665	0.31	7.6
		5/19/2006		13:55	5310	measurements not taken	45.6
	1007G	5/15/2006	16653	16:16	141360	0.69	6.8
		5/16/2006		15:00	7685	1.72	<4.0
		5/16/2006		17:25	5465	1.27	<4.0
		5/17/2006		14:35	600	0.98	<4.0
		5/18/2006		16:20	549	0.95	<4.0
		5/19/2006		12:35	436	0.59	<4.0
	1007K	5/15/2006	16650	16:59	>241960	No consistent flow	13.2
		5/16/2006		15:40	8190	2.13	13.2
		5/16/2006		18:45	4695	7.51	10.8
		5/17/2006		14:10	2274	3.90	11.2
		5/18/2006		10:10	5675	1.07	<4.0
		5/19/2006		14:25	10960	0.94	14.8

Table 3.3 *E.coli* , TSS and Flow Data from Intensive Survey # 1 - Cont'd

Watershed	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	*Flow (cfs)*	*TSS(mg/L)*
EASTERN HOUSTON WATERSHED	1007O	5/15/2006	16649	17:50	>241960	0.00	21.6
		5/16/2006		15:40	26845	0.39	4.8
		5/17/2006		8:15	13450	0.27	<4.0
		5/18/2006		11:05	2503	0.00	4
		5/19/2006		8:05	4955	0.00	<4.0
		5/19/2006		15:10	3880	0.00	<4.0
	1006H	5/15/2006	16663	15:25	10430	6.86	13.2
		5/16/2006		13:50	407	2.50	4.8
		5/17/2006		10:05	151	0.52	5.2
		5/17/2006		16:48	428	1.94	6
		5/18/2006		16:32	97	2.00	<4.0
		5/19/2006		11:11	96	1.32	4
	1006F	5/15/2006	16662	16:25	7580	3.58	12.8
		5/16/2006		14:20	521	0.82	6.8
		5/17/2006		9:40	269	0.60	9.6
		5/17/2006		17:22	621	0.18	38.4
		5/18/2006		15:34	51	0.19	12.8
		5/19/2006		12:00	80	0.23	<4.0
	1007M	5/15/2006	16657	17:35	1656	0.88	13.2
		5/16/2006		15:15	112	0.16	10
		5/17/2006		8:35	169	0.10	22.4
		5/17/2006		18:20	48	0.05	11.2
		5/18/2006		13:10	28	0.02	8.8
		5/19/2006		12:31	16	0.01	10
	1007R	5/15/2006	11128	17:05	71	33.8	16
		5/16/2006		14:48	4	20.2	7.6
		5/17/2006		9:05	2	24.5	<4.0
		5/17/2006		17:59	5	23.2	7.6
		5/18/2006		14:35	3	25.2	7.2
		5/19/2006		13:11	9	21.2	7.2

Legend for the Field Measurements and E.coli Data Tables

Color	Description
	Precision Criteria for EC Failed
	Holding times for EC Not met
	TSS Field Duplicate Criteria Failed
	EC Field Duplicate Criteria Failed

Table 3.4 Field parameters recorded during Metro Intensive # 1

Watershed	SEGMENT ID	DATE	SITE ID	TIME	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
GREENS BAYOU	1016C	5/15/2006	11124	8:55	20.74	244	0.12	48.7	4.37	7.57	10.5
		5/16/2006		8:45	19.17	580	0.28	60.6	5.42	7.52	…..
		5/17/2006		14:40	23.36	337	0.16	35.6	3.05	7.50	3.4
		5/18/2006		8:50	21.46	319	0.15	56.2	4.94	8.19	5.6
		5/18/2006		17:44	25.01	353	0.17	72.0	5.85	8.02	3.4
		5/19/2006		14:45	26.49	456	0.22	81.0	6.33	7.75	2.8
	1016D	5/15/2006	16676	9:55	22.09	188	0.09	13.9	1.23	7.73	12.3
		5/16/2006		9:29	26.83	656	0.32	57.4	4.58	9.48	…..
		5/17/2006		15:15	22.36	565	0.27	29.2	2.46	7.90	0.1
		5/18/2006		9:31	20.94	535	0.26	38.1	3.29	7.87	2.0
		5/18/2006		18:14	24.51	550	0.27	92.7	7.56	….	1.4
		5/19/2006		15:20	25.38	650	0.31	86.4	7.06	7.51	0.3
	1016	5/15/2006	11371	10:35	22.52	309	0.15	67.1	5.80	7.73	47.1
		5/16/2006		10:00	22.98	505	0.24	74.6	6.39	7.59	….
		5/17/2006		13:30	25.69	631	0.3	38.4	3.14	7.78	31.0
		5/18/2006		10:10	24.42	611	0.3	90.6	7.55	8.01	25.9
		5/19/2006		8:12	26.13	785	0.38	76.9	6.17	7.83	21.8
		5/19/2006		15:40	30.19	792	0.38	151	11.3	8.24	24.0
	1016B	5/15/2006	20024 (TBD-02)	12:15	22.86	262	0.12	71.5	6.15	8.24	16.3
		5/16/2006		11:02	32.75	223	0.1	205	14.8	7.78	…..
		5/16/2006		17:01	21.70	378	0.18	164	14.4	7.86	…..
		5/17/2006		12:50	23.67	377	0.18	56.7	4.80	8.23	4.7
		5/18/2006		11:23	24.00	379	0.16	127	10.6	8.18	5.0
		5/19/2006		9:43	22.89	414	0.2	84.8	7.20	8.10	4.4
HALLS BAYOU	1006J	5/15/2006	16665	11:40	21.92	321	0.15	47.3	4.14	8.01	15.1
		5/16/2006		10:28	21.73	554	0.27	230	20.2	7.67	
		5/17/2006		15:45	25.93	678	0.33	32.8	2.63	8.17	3.7
		5/18/2006		10:47	20.58	499	0.24	53.7	4.71	7.90	3.2
		5/19/2006		9:13	22.63	595	0.29	38.0	3.29	7.81	2.3
		5/19/2006		16:16	26.05	755	0.37	76.0	5.99	8.05	2.5
	1006D	5/15/2006	20023 (TBD-01)	13:25	24.16	322	0.15	80.4	6.81	8.56	26.1
		5/16/2006		11:58	22.63	137	0.06	321	27.7	8.04	…..
		5/16/2006		18:01	25.52	491	0.24	86.4	7.03	7.73	…..
		5/17/2006		11:05	24.12	543	0.26	59.1	4.96	7.66	11.7
		5/18/2006		12:10	26.50	523	0.24	109	8.70	8.01	10.6
		5/19/2006		10:26	26.45	666	0.32	87.9	6.99	7.90	7.3
	1006I	5/15/2006	16666	12:45	22.86	603	0.29	3.0	1.02	8.38	61.6
		5/16/2006		11:28	19.71	829	0.41	179	15.5	7.38	…..
		5/16/2006		17:46	20.98	922	0.46	76.8	6.87	7.16	…..
		5/17/2006		11:27	19.45	1010	0.5	27.4	2.53	7.66	10.4
		5/18/2006		11:45	20.10	1005	0.5	81.5	7.29	7.67	6.2
		5/19/2006		10:05	22.58	1368	0.68	7.2	6.12	7.60	29.1

Table 3.4 Field parameters recorded during Metro Intensive # 1 - Cont'd

Watershed	SEGMENT ID	DATE	SITE ID	TIME	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
BRAYS BAYOU	1007P	5/15/2006	15848	9:10	23.40	891	0.44	53.3	4.53	7.56	41.8
		5/16/2006		9:10	22.46	720	0.35	57.5	4.98	7.65	55.5
		5/17/2006		12:30	25.87	835	0.41	61.0	4.92	8.06	36.5
		5/18/2006		12:15	26.27	779	0.38	68.7	5.55	7.29	26.0
		5/18/2006		17:45	32.40	732	0.35	102	7.42	7.85	37.1
		5/19/2006		8:55	25.05	858	0.42	42.1	3.45	7.44	54.4
	1007E	5/15/2006	16652	9:55	23.82	931	0.46	138	12.8	8.61	0.5
		5/16/2006		10:00	22.90	752	0.37	151	12.9	8.18	2.3
		5/17/2006		11:50	29.82	775	0.37	168	12.7	8.74	2.6
		5/17/2006		18:45	25.73	752	0.37	70.9	5.80	9.05	2.3
		5/18/2006		13:00	35.02	638	0.3	204	14.2	9.08	9.1
		5/19/2006		9:55	26.10	827	0.4	111	8.95	8.32	15.1
	1007B	5/15/2006	11138	15:30	29.19	786	0.38	186	14.3	8.97	17.0
		5/16/2006		14:15	27.93	744	0.36	197	15.1	8.71	19.3
		5/16/2006		17:55	28.34	740	0.36	205	15.8	8.72	23.0
		5/17/2006		15:05	29.88	856	0.42	154	11.7	8.90	31.9
		5/18/2006		15:45	31.73	760	0.37	13.7	13.6	8.98	15.9
		5/19/2006		11:05	28.46	815	0.41	128	10.2	8.61	19.4
SIMS BAYOU	1007N	5/15/2006	16655	10:45	23.26	852	0.42	52.7	4.49	7.53	27.6
		5/16/2006		10:40	22.14	800	0.39	52.3	4.60	7.93	20.9
		5/17/2006		11:12	21.64	981	0.48	35.2	3.09	7.49	23.4
		5/17/2006		17:35	26.46	969	0.47	86.7	6.96	7.83	16.5
		5/18/2006		14:10	24.08	847	0.41	43.2	3.57	7.56	14.1
		5/19/2006		10:20	25.33	955	0.47	31.6	2.59	7.56	20.3
	1007	5/15/2006	11132	13:10	25.49	893	0.44	101	8.21	8.04	58.2
		5/16/2006		11:15	25.04	859	0.42	114	7.61	6.04	56.6
		5/17/2006		9:25	23.66	991	0.49	55.4	4.62	7.78	55.6
		5/17/2006		16:55	28.43	984	0.48	99.1	7.77	8.06	86.8
		5/18/2006		15:00	28.99	881	0.43	100	7.80	7.95	78.8
		5/18/2006		18:55	29.41	863	0.42	106	8.06	8.03	62.7

Table 3.4 Field parameters recorded during Metro Intensive # 1 - Cont'd

Watershed	SEGMENT ID	DATE	SITE ID	TIME	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
EASTERN HOUSTON WATERSHED	1007H	5/15/2006	16659	14:04	23.83	294	0.14	21.4	1.79	7.59	10.3
		5/16/2006		12:05	22.58	350	0.17	32.7	2.84	8.36	2.1
		5/17/2006		10:35	21.01	503	0.24	20.9	1.85	7.40	7.1
		5/17/2006		16:15	24.85	518	0.25	62.4	5.19	7.67	26.1
		5/18/2006		8:35	21.52	477	0.32	23.1	2.02	7.80	5.2
		5/19/2006		13:30	25.73	553	0.27	50.1	4.08	7.63	5.1
	1007I	5/15/2006	16658	14:35	24.32	227	0.11	23.2	1.94	7.66	17.3
		5/16/2006		12:25	21.39	374	0.18	13.6	1.12	7.97	5.3
		5/16/2006		17:00	22.86	270	0.13	20.4	1.76	7.86	10.0
		5/17/2006		15:50	21.85	402	0.19	16.8	1.55	7.72	5.6
		5/18/2006		9:20	22.51	404	0.19	26.1	2.07	7.68	3.7
		5/19/2006		13:55	24.75	490	0.24	12.9	1.06	7.36	26.2
	1007G	5/15/2006	16653	16:16	25.21	276	0.13	38.6	3.05	7.64	7.6
		5/16/2006		15:00	…..	…..	…..	44.9	3.67	8.15	1.2
		5/16/2006		17:25	24.54	284	0.14	45.8	3.99	7.76	3.6
		5/17/2006		14:35	23.93	456	0.22	37.4	3.16	7.45	2.6
		5/18/2006		16:20	25.18	465	0.22	44.3	3.64	7.76	2.0
		5/19/2006		12:35	24.94	529	0.25	45.0	3.62	7.59	2.0
	1007K	5/15/2006	16650	16:59	27.07	226	0.11	81.2	6.45	7.98	13.9
		5/16/2006		15:40	25.78	246	0.12	93.4	7.59	8.06	11.2
		5/16/2006		18:45	25.67	254	0.12	96.3	7.82	8.31	13.9
		5/17/2006		14:10	26.49	411	0.2	73.0	5.84	7.65	15.9
		5/18/2006		10:10	22.82	473	0.23	48.6	4.08	7.38	4.6
		5/19/2006		14:25	29.62	585	0.28	71.3	5.43	7.71	26.2

Table 3.4 Field parameters recorded during Metro Intensive # 1 - Cont'd

Watershed	SEGMENT ID	DATE	SITE ID	TIME	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
EASTERN HOUSTON WATERSHED	1007O	5/15/2006	16649	17:50	22.06	123	0.06	64.9	5.46	8.35	58.1
		5/16/2006		15:40	…..	…..	…..	…..	…..	…..	…..
		5/17/2006		8:15	21.90	228	0.11	50.3	4.31	8.65	2.6
		5/18/2006		11:05	24.06	329	0.16	30.6	2.56	7.30	3.8
		5/19/2006		8:05	22.25	595	0.29	26.5	2.30	8.02	2.3
		5/19/2006		15:10	27.94	389	0.18	17.7	1.39	7.17	2.0
	1006H	5/15/2006	16663	15:25	23.85	710	0.35	98.5	8.27	7.92	13.3
		5/16/2006		13:50	23.56	710	0.35	188	15.4	7.69	…..
		5/17/2006		10:05	22.25	719	0.35	55.5	4.78	7.79	6.3
		5/17/2006		16:48	25.17	545	0.26	26.4	2.17	8.02	4.3
		5/18/2006		16:32	23.81	471	0.24	93.5	7.85	8.24	9.0
		5/19/2006		11:11	23.44	510	0.25	96.5	8.28	7.95	3.0
	1006F	5/15/2006	16662	16:25	25.08	307	0.15	90.1	7.40	8.59	4.2
		5/16/2006		14:20	22.09	57	0.03	190	16.6	7.65	…..
		5/17/2006		9:40	21.95	500	0.24	80.8	7.06	7.45	31.7
		5/17/2006		17:22	29.03	537	0.26	43.0	3.30	8.10	12.3
		5/18/2006		15:34	…..	416	0.2	198	15.9	8.33	6.7
		5/19/2006		12:00	29.60	601	0.29	188	15.0	7.84	3.1
	1007M	5/15/2006	16657	17:35	26.63	307	0.15	108	8.61	8.56	13.1
		5/16/2006		15:15	22.09	57	0.03	190	16.6	7.65	…..
		5/17/2006		8:35	22.04	495	0.24	70.3	6.12	7.47	14.7
		5/17/2006		18:20	29.14	529	0.25	31.0	2.38	8.11	13.1
		5/18/2006		13:10	28.50	521	0.25	121	9.27	7.94	0.6
		5/19/2006		12:31	29.12	670	0.32	104	7.92	7.92	23.1
	1007R	5/15/2006	11128	17:05	25.93	437	0.21	93.0	7.54	8.08	16.8
		5/16/2006		14:48	22.09	57	0.03	190	16.6	7.65	…..
		5/17/2006		9:05	22.73	587	0.28	81.3	7.04	7.57	2.8
		5/17/2006		17:59	26.98	595	0.29	28.5	2.27	7.85	4.3
		5/18/2006		14:35	26.53	495	0.24	127	10.0	7.86	5.2
		5/19/2006		13:11	26.84	585	0.28	115	9.1	7.87	4.7

Purple Cells indicate unreasonably high measurements of DO% & DO mg/L by YSI.

	Units	
TURB	Turbidity	NTU
SAL	Salinity	ppt
COND	Conductivity	uS/cm
TMEP	Temperature	^{o}C

3.2 INTENSIVE SURVEY # 2

The sampling event was considered a wet weather event since the majority of the Houston Metro area experienced accumulations ranging from 0.4 to 1.8 inches beginning on the first day of sampling. The rainfall totals over a 24 hr period for rain gages within the Houston Metro area preceding the sampling event and during the sampling event are summarized in Table 3.5. It can be observed that most of the rain gages within the watershed exhibited precipitation greater than 1 inch on the second day and increasing to greater than 2 inches on the third day. Each of the twenty-one locations was sampled 6 times during the event for *E.coli* and flow. The *E.coli* concentrations, flow and total suspended solids (TSS) measured at each station are summarized in Table 3.6. Table 3.7 shows the YSI readings measured each day of the second intensive survey.

Table 3.5 Rainfall Totals for Metro Intensive # 2

GAGE NAME	Rain Gage ID	Rainfall Totals for a 24 hr period											
		06/11/06	06/12/06	06/13/06	06/14/06	06/15/06	06/16/06	06/17/06	06/18/06	06/19/06	06/20/06	06/21/06	06/22/06
C106 Berry Bayou @ Nevada	310	0.00	0.00	0.00	0.00	0.00	0.04	1.22	2.56	9.84	0.35	0.00	0
C106 Berry Bayou @ Forest	320	0.00	0.00	0.00	0.00	0.00	0.04	1.06	2.64	7.99	0.28	0.00	0
C100 Sims Bayou @ Telepho	340	0.00	0.00	0.00	0.00	0.00	0.00	0.71	1.06	10.67	0.39	0.00	0
C100 Sims Bayou @ Martin	360	0.00	0.00	0.00	0.00	0.00	0.12	1.38	1.65	6.93	0.20	0.00	0
C100 Sims Bayou @ SH-288	370	0.00	0.00	0.00	0.00	0.00	0.12	2.44	1.10	3.86	0.39	0.00	0
C100 Sims Bayou @ Hiram-C	380	0.00	0.00	0.00	0.00	0.00	0.08	1.97	0.98	1.81	0.35	0.00	0
D109 Harris Gulley @ S. M	400	0.00	0.00	0.00	0.00	0.00	0.04	2.09	0.63	3.03	0.16	0.00	0
D100 Brays Bayou @ Lawnda	410	0.00	0.00	0.00	0.00	0.00	0.00	1.18	1.50	7.52	0.16	0.00	0
D100 Brays Bayou @ South	420	0.00	0.00	0.00	0.00	0.00	0.12	0.98	0.51	2.44	0.04	0.04	0
D100 Brays Bayou @ Stella	430	0.00	0.00	0.00	0.00	0.00	0.04	1.02	0.12	2.32	0.31	0.04	0
D100 Willow Watering Hole	435	0.00	0.00	0.00	0.00	0.00	0.08	0.71	0.20	0.63	0.47	0.00	0
D100 Brays Bayou @ Rice	440	0.00	0.00	0.00	0.00	0.00	0.08	0.51	0.08	0.04	0.16	0.00	0
D100 Brays Bayou @ Gessne	460	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.24	0.51	0.91	0.00	0
D100 Brays Bayou @ Beltwa	465	0.00	0.00	0.00	0.00	0.00	0.00	0.98	0.28	0.71	1.06	0.00	0
D100 Brays Bayou @ Belle	470	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.75	0.83	1.02	0.00	0
D100 Brays Bayou @ Bellai	475	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.39	0.67	0.79	0.00	0
D118 Keegans Bayou @ Roar	480	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.43	0.28	0.79	0.00	0
D100 Brays Bayou @ SH 6	485	0.00	0.00	0.00	0.00	0.00	0.00	1.38	0.51	0.91	1.18	0.00	0
D118 Keegans Bayou @ Keeg	490	0.00	0.00	0.00	0.00	0.00	0.00	1.30	0.43	0.28	0.67	0.00	0
H100 Hunting Bayou @ IH-1	820	0.00	0.00	0.00	0.00	0.00	0.00	0.87	1.89	6.02	0.59	0.00	0
H100 Hunting Bayou @ Loop	830	0.00	0.00	0.00	0.00	0.00	0.00	0.91	1.50	3.62	0.39	0.00	0
H100 Hunting Bayou @ Lock	840	0.00	0.00	0.00	0.00	0.00	0.00	2.28	1.34	5.08	0.31	0.00	0
Reliant Park	1020	0.00	0.00	0.00	0.00	0.00	0.08	1.14	0.39	2.99	0.31	0.00	0
P100 Greens Bayou @ Mt. H	1600	0.00	0.00	0.04	0.00	0.00	0.00	2.32	2.52	6.10	0.59	0.04	0
P100 Greens Bayou @ Norma	1610	0.00	0.00	0.00	0.00	0.00	0.00	1.06	1.73	6.89	0.79	0.04	0
P100 Greens Bayou @ Ley R	1620	0.00	0.00	0.00	0.00	0.00	0.00	1.85	2.13	6.93	0.51	0.00	0
P130 Garners Bayou @ Belt	1630	0.00	0.00	0.04	0.00	0.00	0.00	1.50	1.93	4.06	0.16	0.00	0
P100 Greens Bayou @ US-59	1640	0.00	0.00	0.00	0.00	0.00	0.00	1.14	0.59	3.74	0.47	0.00	0
P100 Greens Bayou @ Beltw	1645	0.00	0.00	0.00	0.00	0.00	0.00	1.50	0.75	7.68	0.28	0.00	0
P130 Garners @ Rankin Rd	1650	0.00	0.00	0.12	0.00	0.35	0.00	0.75	1.06	2.17	0.20	0.00	0
P100 Greens Bayou @ Knobc	1660	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.71	2.44	0.12	0.00	0
P100 Greens Bayou @ Bamme	1665	0.00	0.00	0.00	0.00	0.00	0.16	1.22	0.75	4.41	0.51	0.00	0
P100 Greens Bayou @ Cutte	1670	0.00	0.00	0.00	0.00	0.00	0.28	1.42	1.14	4.17	0.28	0.00	0
P118 Halls Bayou @ Tidwel	1675	0.00	0.00	0.00	0.00	0.00	0.00	1.73	1.73	4.88	0.43	0.00	0
P118 Halls Bayou @ Jensen	1680	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.24	2.28	0.08	0.00	0
P100 Greens Bayou @ Tidwe	1685	0.00	0.00	0.00	0.00	0.00	0.00	2.13	2.01	8.03	0.51	0.00	0
P118 Halls Bayou @ Airlin	1690	0.00	0.00	0.08	0.00	0.00	0.00	1.93	0.63	4.09	0.12	0.08	0
SH 288 @ MacGregor	3010	0.00	0.00	0.08	0.00	0.00	0.12	2.56	0.83	4.06	0.24	0.00	0
IH 45 S HOV @ DwT Terminu	3020	0.00	0.00	0.08	0.00	0.00	0.20	2.64	1.57	4.37	0.12	0.00	0
Galveston Rd @ Allendale	3030	0.00	0.00	0.08	0.00	0.00	0.04	1.14	2.68	12.95	0.28	0.00	0
IH 10 @ Normandy	3060	0.00	0.00	0.00	0.00	0.04	0.00	0.91	2.09	7.05	0.91	0.00	0
SH 288 @ Loop 610	3070	0.00	0.00	0.00	0.00	0.00	0.04	2.60	0.63	5.24	0.24	0.00	0
IH 45 W Road HOV Entrance	3520	0.00	0.00	0.08	0.00	0.00	0.00	1.22	0.79	3.31	0.12	0.00	0
Metro Rail @ Fannin	3990	0.00	0.00	0.08	0.00	0.00	0.08	1.38	0.51	3.43	0.35	0.00	0
Brazos River @ SH 36	4310	0.00	0.00	0.00	0.00	0.00	1.06	0.00	0.04	2.72	1.42	0.00	0

Higlighted columns indicate the sampling days

Table 3.6 *E.coli* , TSS and Flow Data from Intensive Survey # 2

Watershed	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	Flow (cfs)	TSS (mg/L)
GREENS BAYOU	1016C	6/18/2006	11124	10:00	9840	56	70.8
		6/18/2006		15:30	10010	18	10
		6/21/2006		8:30	2356	10	7.6
		6/21/2006		15:25	1819	7.6	6
		6/22/2006		13:00	936	5.3	96.4
		6/22/2006		16:02	1013	3.3	4.8
	1016D	6/18/2006	16676	10:30	7640	22	14.8
		6/18/2006		16:00	4242	11	5.6
		6/21/2006		9:40	960	4.1	<4.0
		6/21/2006		16:08	5435	6.1	<4.0
		6/22/2006		12:13	4618	2.1	<4.0
		6/22/2006		15:40	1565	1.4	7.6
	1016	6/17/2006	11371	20:20	21440	37	114
		6/18/2006		16:20	10740	97	100
		6/21/2006		9:00	696	48	48
		6/21/2006		15:50	402	84	34.4
		6/22/2006		12:37	409	70	32.8
		6/22/2006		15:15	411	46	10.8
	1016B	6/17/2006	20024 (TBD-02)	19:15	176970	11	257
		6/18/2006		17:15	12165	5.3	153
		6/20/2006		18:19	8310	6.7	12.8
		6/21/2006		10:55	648	2.4	28.4
		6/21/2006		17:08	808	2.4	6.4
		6/22/2006		11:20	376	1.8	8
HALLS BAYOU	1006J	6/17/2006	16665	19:45	74855	18	18.4
		6/18/2006		16:45	11670	4.9	6
		6/20/2006		17:00	6025	7.4	8.4
		6/21/2006		10:15	957	1.9	<4.0
		6/21/2006		11:45	1690	1.6	<4.0
		6/22/2006		16:45	1968	1.1	<4.0
	1006D	6/17/2006	20023 (TBD-01)	17:55	94500	29	392
		6/18/2006		18:05	37635	39	114
		6/20/2006		17:45	42270	70	61.6
		6/21/2006		12:20	7070	62	112
		6/21/2006		10:37	744	34	43.2
		6/22/2006		18:00	2734	19	64.4
	1006I	6/17/2006	16666	18:40	7	1.20	20
		6/18/2006		17:40	92340	0.18	35.6
		6/20/2006		17:20	4612	>1.2	14.4
		6/21/2006		11:30	386	0.64	206
		6/21/2006		17:35	1233	0.09	18
		6/22/2006		11:00	1974	0.03	16.4

Table 3.6 *E.coli* , TSS and Flow Data from Intensive Survey # 2 - Cont'd

Watershed	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	Flow (cfs)	TSS (mg/L)
BRAYS BAYOU	1007P	6/17/2006	15848	17:38	50430	Erroneous flow	177
		6/18/2006		12:55	19745	23	44.8
		6/20/2006		1:45	15440	39	35.2
		6/21/2006		9:50	1087	14	4
		6/21/2006		15:15	531	11	18
		6/22/2006		8:35	690	9	<4.0
	1007E	6/17/2006	16652	18:35	56515	5.0	9.2
		6/18/2006		14:20	2445	4.1	7.2
		6/20/2006		2:55	19090	14.6	25.2
		6/21/2006		10:30	407	0.43	26.4
		6/21/2006		15:50	116160	0.76	5.2
		6/22/2006		9:25	7933	0.36	19.2
	1007B	6/17/2006	11138	19:35	70685	Depth	474
		6/18/2006		15:20	21945	Incomplete	108
		6/20/2006		18:30	18205	174	15.2
		6/21/2006		13:40	2319	181	28
		6/21/2006		19:20	4182	169	16.8
		6/22/2006		13:05	10990	138	56.4
SIMS BAYOU	1007N	6/17/2006	16655	19:05	12210	53.7	133
		6/18/2006		14:55	7495	7.6	37.6
		6/20/2006		15:35	NO READING	10.2	43.2
		6/21/2006		10:56	24196	5.0	27.6
		6/21/2006		16:20	36605	4.5	26.8
		6/22/2006		9:45	62210	3.2	64.8
	1007	6/18/2006	11132	11:55	34785	not precise	111
		6/20/2006		16:05	6875	195	117
		6/21/2006		9:15	4805	81	9.6
		6/21/2006		11:25	1968	73	19.6
		6/21/2006		18:57	4106	68	20.8
		6/22/2006		10:25	6405	37	<4.0

Table 3.6 *E.coli* , TSS and Flow Data from Intensive Survey # 2 - Cont'd

Watershed	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	Flow (cfs)	TSS (mg/L)
EASTERN HOUSTON WATERSHED	1007H	6/18/2006	16659	11:15	53235	12.5	30.8
		6/20/2006		16:40	17850	2.4	12.4
		6/20/2006		19:03	12750	4.8	23.6
		6/21/2006		11:49	991	1.1	6.8
		6/21/2006		17:15	1043	1.2	8
		6/22/2006		10:50	1052	0.90	<4.0
	1007I	6/18/2006	16658	10:40	64150	76	36.4
		6/20/2006		16:55	198630	11	30.8
		6/20/2006		19:19	132685	No flow	30
		6/21/2006		12:00	6100	4.05	10.8
		6/21/2006		17:30	3352	1.35	<4.0
		6/22/2006		11:00	5635	0	5.6
	1007G	6/17/2006	16653	20:10	48925	11	53.6
		6/18/2006		16:05	50730	23	26
		6/20/2006		17:55	25490	6.6	40.8
		6/21/2006		13:15	54200	2.0	<4.0
		6/21/2006		18:50	36305	1.5	<4.0
		6/22/2006		12:25	43585	0.84	<4.0
	1007K	6/18/2006	16650	9:30	69160	111	54
		6/20/2006		17:25	10735	8.2	12
		6/20/2006		19:35	42270	2.4	10
		6/21/2006		12:20	6350	-1.1	14.4
		6/21/2006		17:50	73975	3.0	<4.0
		6/22/2006		11:25	11990	5.4	8.4

Table 3.6 *E.coli* , TSS and Flow Data from Intensive Survey # 2 - Cont'd

Watershed	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	Flow (cfs)	TSS (mg/L)
EASTERN HOUSTON WATERSHED	1007O	6/18/2006	16649	9:56	61710	11.1	42
		6/20/2006		13:20	18370	0.4	19.2
		6/21/2006		8:25	7905	0	35.2
		6/21/2006		12:52	8835	No flow	23.6
		6/21/2006		18:15	5160	No flow	5.2
		6/22/2006		12:10	5982	No flow	6.4
	1006H	6/18/2006	16663	11:45	25065	52	118
		6/18/2006		18:45	11245	45	38
		6/20/2006		16:30	1238	16	60.8
		6/21/2006		12:50	565	5.9	43.2
		6/21/2006		18:40	293	9.2	40.8
		6/22/2006		10:00	378	4.3	24.8
	1006F	6/18/2006	16662	12:30	17005	50	72.4
		6/18/2006		19:25	8665	42	90
		6/20/2006		16:05	5971	31	40.8
		6/21/2006		13:15	505	21.6	14.8
		6/21/2006		19:03	1456	2.6	28.8
		6/22/2006		9:15	602	6.9	14.8
	1007M	6/18/2006	16657	13:30	33650	11	37.2
		6/20/2006		14:40	5550	11	14.8
		6/21/2006		14:45	1213	23	9.2
		6/22/2006		8:25	1235	1.4	18.4
		6/22/2006		13:40	1248	1.1	4
		6/22/2006		16:45	1107	0.9	21.2
	1007R	6/18/2006	11128	13:05	30050	52	72.4
		6/20/2006		14:55	5420	47	42.8
		6/21/2006		14:25	575	42	31.6
		6/21/2006		19:35	1000	58	18
		6/22/2006		8:52	494	25	17.2
		6/22/2006		14:49	441	54	18.8

Legend for the Field Measurements and E.coli Data Tables

Color	Description
	Precision Criteria for EC Failed
	Holding times for EC Not met
	TSS Field Duplicate Criteria Failed
	EC Field Duplicate Criteria Failed

Table 3.7 Field parameters recorded during Metro Intensive # 2

WATERSHED	SEGMENT ID	DATE	SITE ID	TIME	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
GREENS BAYOU	1016C	6/18/2006	11124	10:00	24.88	210	0.1	59.6	4.92	7.54	49.0
		6/18/2006		15:30	27.33	251	0.12	36.9	3.03	7.45	11.3
		6/21/2006		8:30	25.62	292	0.17	55.1	4.51	7.45	7.9
		6/21/2006		15:25	28.73	312	0.14	64.3	4.98	7.48	4.9
		6/22/2006		13:00	28.75	326	0.15	64.8	5.01	7.52	5.6
		6/22/2006		16:02	29.38	316	0.15	61.8	4.72	7.57	4.6
	1016D	6/18/2006	16676	10:30	25.09	162	0.08	64.2	5.30	7.33	14.9
		6/18/2006		16:00	27.91	194	0.09	26.1	2.04	7.36	10.8
		6/21/2006		9:40	26.40	232	0.11	36.1	2.88	7.36	5.6
		6/21/2006		16:08	29.08	241	0.11	45.2	3.46	7.31	4.6
		6/22/2006		12:13	28.41	301	0.14	33.5	2.60	7.41	3.0
		6/22/2006		15:40	28.78	323	0.15	39.1	2.99	7.53	3.0
	1016	6/17/2006	11371	20:20	25.29	215	0.1	70.7	5.80	7.63	145.7
		6/18/2006		16:20	26.98	190	0.09	29.8	2.29	7.62	81.4
		6/21/2006		9:00	25.68	228	0.11	67.1	5.37	7.65	45.6
		6/21/2006		15:50	29.57	251	0.12	74.8	5.69	7.64	53.4
		6/22/2006		12:37	29.51	350	0.16	72.1	5.48	7.65	52.3
		6/22/2006		15:15	30.47	354	0.17	74.2	5.56	7.75	47.9
	1016B	6/17/2006	20024 (TBD-02)	19:15	25.01	166	0.08	62.0	5.13	7.72	203.7
		6/18/2006		17:15	28.58	241	0.11	12.1	0.99	7.62	144.0
		6/20/2006		18:19	26.82	234	0.11	50.8	4.05	7.16	10.3
		6/21/2006		10:55	26.67	568	0.27	64.0	4.32	7.36	11.3
		6/21/2006		17:08	28.71	638	0.31	59.1	4.55	7.40	89.0
		6/22/2006		11:20	29.22	878	0.43	61.4	4.69	7.45	8.6
HALLS BAYOU	1006J	6/17/2006	16665	19:45	25.33	158	0.7	53.2	4.37	7.47	22.8
		6/18/2006		16:45	28.01	197	0.09	16.4	1.28	7.45	10.8
		6/20/2006		17:00	27.27	415	0.2	43.9	3.47	7.32	5.5
		6/21/2006		10:15	29.06	523	0.25	44.9	3.45	7.49	2.3
		6/21/2006		11:45	25.82	498	0.24	40.9	3.32	7.43	4.2
		6/22/2006		16:45	27.70	556	0.27	37.7	2.97	7.53	1.4
	1006D	6/17/2006	20023 (TBD-01)	17:55	24.78	226	0.11	75.8	6.29	7.72	290.0
		6/18/2006		18:05	27.81	271	0.13	74.9	5.80	7.49	84.4
		6/20/2006		17:45	26.09	226	0.11	57.8	4.66	7.37	121.3
		6/21/2006		12:20	27.32	325	0.15	78.3	6.19	7.59	95.7
		6/21/2006		10:37	28.37	398	0.19	72.2	5.50	7.63	46.0
		6/22/2006		18:00	29.57	347	0.16	74.7	5.68	7.71	71.3
	1006I	6/17/2006	16666	18:40	23.73	134	0.06	86.3	7.30	7.93	45.5
		6/18/2006		17:40	27.47	259	0.12	81.2	6.41	7.57	46.5
		6/20/2006		17:20	25.13	174	0.08	40.0	3.24	7.26	21.6
		6/21/2006		11:30	26.57	868	0.32	70.4	5.72	7.45	193.6
		6/21/2006		17:35	27.96	828	0.4	58.4	4.57	7.43	14.6
		6/22/2006		11:00	26.40	1232	0.61	41.5	3.30	7.42	9.3

Table 3.7 Field parameters recorded during Metro Intensive # 2 - Cont'd

WATERSHED	SEGMENT ID	DATE	SITE ID	TIME	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
BRAYS BAYOU	1007P	6/17/2006	15848	17:38	26.65	310	0.15	17.4	1.40	7.08	166.0
		6/18/2006		12:55	28.56	846	0.41	66.9	5.15	7.43	24.6
		6/20/2006		1:45	27.41	354	0.17	69.1	5.48	6.33	21.8
		6/21/2006		9:50	27.60	558	0.27	37.6	3.08	7.45	18.0
		6/21/2006		15:15	32.96	1025	0.5	30.9	2.26	7.66	17.9
		6/22/2006		8:35	27.53	752	0.36	43.5	3.43	7.44	21.3
	1007E	6/17/2006	16652	18:35	28.62	339	0.16	58.3	4.51	7.85	13.6
		6/18/2006		14:20	32.13	816	0.39	182	13.16	9.25	11.3
		6/20/2006		2:55	27.15	256	0.12	105	8.38	7.15	18.1
		6/21/2006		10:30	30.46	341	0.16	150	11.28	9.23	7.1
		6/21/2006		15:50	36.07	620	0.33	91.1	6.24	9.31	19.9
		6/22/2006		9:25	27.99	396	0.19	91.9	7.21	8.21	7.7
	1007B	6/17/2006	11138	19:35	26.64	349	0.17	41.2	3.35	7.73	330.0
		6/18/2006		15:20	28.16	590	0.28	95.3	7.44	7.99	58.7
		6/20/2006		18:30	27.51	371	0.18	106	8	7.86	37.4
		6/21/2006		13:40	31.63	645	0.31	75.2	5.55	8.36	17.9
		6/21/2006		19:20	31.26	650	0.31	93.1	6.88	8.48	20.5
		6/22/2006		13:05	31.20	687	0.33	89.8	6.65	8.40	22.8
SIMS BAYOU	1007N	6/17/2006	16655	19:05	25.49	293	0.14	31.9	2.64	7.81	168.0
		6/18/2006		14:55	28.05	672	0.33	66.1	5.15	8.27	41.8
		6/20/2006		15:35	27.35	438	0.21	59.5	4.70	7.01	33.3
		6/21/2006		10:56	27.20	503	0.24	38.5	3.05	8.03	20.4
		6/21/2006		16:20	31.47	910	0.44	27.3	2.08	8.13	20.1
		6/22/2006		9:45	27.54	552	0.26	25.8	2.03	7.78	23.4
	1007	6/18/2006	11132	11:55	24.99	649	0.31	85.9	7.09	7.68	103.1
		6/20/2006		16:05	27.63	456	0.22	82.0	6.54	7.25	89.6
		6/21/2006		9:15	26.92	503	0.24	79.2	6.36	7.58	89.9
		6/21/2006		11:25	27.82	512	0.24	63.4	4.98	7.83	90.5
		6/21/2006		18:57	16.50	720	0.36	38.4	2.91	7.89	74.0
		6/22/2006		10:25	27.00	468	0.22	42.6	3.27	7.87	58.2

Table 3.7 Field parameters recorded during Metro Intensive # 2 - Cont'd

WATERSHED	SEGMENT ID	DATE	SITE ID	TIME	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
EASTERN HOUSTON WATERSHED	1007H	6/18/2006	16659	11:15	24.41	605	0.29	78.5	6.56	7.45	31.7
		6/20/2006		16:40	25.70	502	0.24	56.2	4.60	7.19	5.2
		6/20/2006		19:03	25.31	520	0.25	54.7	4.45	7.40	7.9
		6/21/2006		11:49	26.38	579	0.28	24.0	1.93	7.52	7.7
		6/21/2006		17:15	28.09	533	0.26	15.1	1.01	7.43	6.5
		6/22/2006		10:50	27.39	391	0.19	29.8	2.31	7.57	9.4
	1007I	6/18/2006	16658	10:40	24.11	557	0.27	90.1	7..54	7.34	32.2
		6/20/2006		16:55	26.07	406	0.19	51.9	4.19	7.41	30.9
		6/20/2006		19:19	26.36	425	0.2	54.3	4.39	7.59	25.5
		6/21/2006		12:00	26.78	498	0.24	37.3	2.98	7.65	4.8
		6/21/2006		17:30	29.17	546	0.31	21.8	1.83	7.57	4.9
		6/22/2006		11:00	26.56	609	0.29	23.6	1.89	7.50	3.1
	1007G	6/17/2006	16653	20:10	25.48	259	0.12	43.9	3.61	7.78	73.8
		6/18/2006		16:05	26.40	430	0.23	86.6	6.97	7.83	29.1
		6/20/2006		17:55	26.08	463	0.22	90.5	7.32	7.58	33.7
		6/21/2006		13:15	27.31	532	0.26	46.4	3.69	7.68	12.1
		6/21/2006		18:50	28.06	596	0.29	44.6	3.50	7.63	7.5
		6/22/2006		12:25	27.83	532	0.25	58.6	4.60	7.52	3.3
	1007K	6/18/2006	16650	9:30	24.41	440	0.21	90.6	7.55	6.53	32.8
		6/20/2006		17:25	26.20	413	0.2	98.9	7.96	7.50	5.4
		6/20/2006		19:35	26.28	439	0.21	105.0	8.54	7.61	4.1
		6/21/2006		12:20	27.42	526	0.25	63.8	5.04	7.68	8.4
		6/21/2006		17:50	30.55	591	0.28	50.6	3.78	7.64	9.0
		6/22/2006		11:25	26.96	545	0.26	37.6	2.99	7.52	5.8

Table 3.7 Field parameters recorded during Metro Intensive # 2 - Cont'd

WATERSHED	SEGMENT ID	DATE	SITE ID	TIME	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
EASTERN HOUSTON WATERSHED	1007O	6/18/2006	16649	9:56	24.22	524	0.25	97.7	8.14	6.88	25.9
		6/20/2006		13:20	25.06	246	0.12	62.8	5.18	6.83	10.9
		6/21/2006		8:25	21.99	331	0.18	47.7	3.94	7.44	4.7
		6/21/2006		12:52	25.27	464	0.22	36.6	2.95	7.76	5.1
		6/21/2006		18:15	25.21	580	0.28	27.7	2.27	7.59	4.4
		6/22/2006		12:10	25.14	394	0.19	37.2	3.06	7.34	3.0
	1006H	6/18/2006	16663	11:45	24.23	184	0.09	70.1	5.89	7.47	123.8
		6/18/2006		18:45	27.62	296	0.14	66.6	6.07	7.68	28.8
		6/20/2006		16:30	26.16	305	0.14	74.2	6.00	7.33	61.6
		6/21/2006		12:50	26.49	453	0.22	78.6	6.31	7.50	65.7
		6/21/2006		18:40	27.94	455	0.22	78.5	6.15	7.53	70.6
		6/22/2006		10:00	27.54	508	0.24	79.7	5.28	7.69	88.9
	1006F	6/18/2006	16662	12:30	24.49	162	0.08	73.1	6.00	7.13	61.7
		6/18/2006		19:25	28.01	216	0.1	51.5	4.05	7.58	89.9
		6/20/2006		16:05	27.02	140	0.06	73.7	5.87	7.48	37.8
		6/21/2006		13:15	27.55	188	0.09	60.3	4.71	7.35	23.3
		6/21/2006		19:03	30.57	197	0.09	54.6	4.08	7.37	72.5
		6/22/2006		9:15	27.63	250	0.12	48.1	3.77	7.37	44.6
	1007M	6/18/2006	16657	13:30	25.51	153	0.07	70.2	5.78	7.78	31.0
		6/20/2006		14:40	26.02	172	0.08	6.4	5.19	6.95	13.6
		6/21/2006		14:45	29.73	281	0.13	62.2	4.72	7.48	9.4
		6/22/2006		8:25	27.74	325	0.15	46.3	3.54	7.58	34.5
		6/22/2006		13:40	30.27	327	0.15	59.1	4.45	7.70	40.9
		6/22/2006		16:45	30.90	338	0.16	58.3	4.33	7.63	34.2
	1007R	6/18/2006	11128	13:05	24.88	175	0.08	80.1	6.60	7.88	947.8
		6/20/2006		14:55	26.13	257	0.12	70.2	5.67	7.22	58.4
		6/21/2006		14:25	28.82	439	0.21	71.4	5.50	7.49	19.2
		6/21/2006		19:35	29.50	434	0.21	69.4	5.28	7.51	14.1
		6/22/2006		8:52	27.79	554	0.27	69.9	5.48	7.61	14.0
		6/22/2006		14:49	29.52	561	0.27	75.8	5.77	7.69	11.6

Purple Cells indicate unreasonably high DO% and DO mg/L measurements by YSI.

Units		
TURB	Turbidity	NTU
SAL	Salinity	ppt
COND	Conductivity	uS/cm
TMEP	Temperature	^{o}C

3.3 INTENSIVE SURVEY # 3

The third intensive event was an intermediate flow event since rainfall occurred on the second day of sampling as seen in Table 3.8. Each of the 21 locations within the Metro area was sampled 6 times for *E.coli* and flow. The *E.coli* concentrations, flow and total suspended solids (TSS) measured at each station are summarized in Table 3.9. Table 3.10 depicts the YSI readings measured each day of the third intensive survey.

Table 3.8 Rainfall Totals for Metro Intensive # 3

GAGE NAME	Rain Gage ID	Rainfall Totals for a 24 hr period										
		07/12/06	07/13/06	07/14/06	07/15/06	07/16/06	07/17/06	07/18/06	07/19/06	07/20/06	07/21/06	07/22/06
C106 Berry Bayou @ Nevada	310	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
C106 Berry Bayou @ Forest	320	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
C100 Sims Bayou @ Telephone	340	0.00	0.00	0.00	0.00	0.00	0.00	0.47	0.00	0.00	0.00	0.00
C100 Sims Bayou @ Martin	360	0.00	0.00	0.00	0.00	0.00	0.00	1.06	0.00	0.00	0.00	0.00
C100 Sims Bayou @ SH-288	370	0.00	0.00	0.00	0.00	0.00	0.00	1.14	0.00	0.00	0.00	0.00
C100 Sims Bayou @ Hiram-C	380	0.00	0.00	0.00	0.00	0.00	0.00	1.14	0.00	0.00	0.00	0.00
D109 Harris Gulley @ S. M	400	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.00
D100 Brays Bayou @ Lawndale	410	0.00	0.00	0.00	0.00	0.00	0.00	0.43	0.00	0.00	0.00	0.00
D100 Brays Bayou @ South	420	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	0.00	0.00	0.00
D100 Brays Bayou @ Stella	430	0.00	0.00	0.00	0.00	0.00	0.00	1.02	0.00	0.00	0.00	0.00
D100 Willow Watering Hole	435	0.00	0.00	0.00	0.00	0.00	0.00	1.10	0.00	0.00	0.00	0.00
D100 Brays Bayou @ Rice	440	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
D100 Brays Bayou @ Gessne	460	0.00	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00
D100 Brays Bayou @ Beltwa	465	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.00
D100 Brays Bayou @ Belle	470	0.00	0.00	0.00	0.00	0.00	0.00	1.14	0.00	0.00	0.00	0.00
D100 Brays Bayou @ Bellai	475	0.00	0.00	0.00	0.00	0.00	0.00	0.83	0.00	0.00	0.00	0.00
D118 Keegans Bayou @ Roar	480	0.00	0.00	0.00	0.00	0.00	0.00	0.55	0.00	0.00	0.00	0.00
D100 Brays Bayou @ SH 6	485	0.00	0.00	0.00	0.00	0.00	0.00	0.28	0.00	0.00	0.00	0.00
D118 Keegans Bayou @ Keegan	490	0.00	0.00	0.00	0.00	0.00	0.00	0.31	0.00	0.00	0.00	0.00
H100 Hunting Bayou @ IH-1	820	0.00	1.57	0.12	0.00	0.00	0.00	0.79	0.00	0.00	0.00	0.00
H100 Hunting Bayou @ Loop	830	0.00	0.28	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00
H100 Hunting Bayou @ Lock	840	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Reliant Park	1020	0.00	0.00	0.00	0.00	0.00	0.00	0.67	0.00	0.00	0.00	0.00
P100 Greens Bayou @ Mt. H	1600	0.00	0.00	0.04	0.00	0.00	0.00	0.04	0.00	0.00	0.00	0.00
P100 Greens Bayou @ Norma	1610	0.00	0.00	0.00	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00
P100 Greens Bayou @ Ley R	1620	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P130 Garners Bayou @ Belt	1630	0.00	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P100 Greens Bayou @ US-59	1640	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P100 Greens Bayou @ Beltw	1645	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P130 Garners @ Rankin Rd	1650	0.00	0.00	0.12	0.00	0.35	0.00	0.00	0.00	0.00	0.00	0.00
P100 Greens Bayou @ Knobc	1660	0.00	0.00	0.00	0.00	0.00	0.51	0.00	0.00	0.00	0.00	0.00
P100 Greens Bayou @ Bamme	1665	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.00	0.00	0.00	0.00
P100 Greens Bayou @ Cutten	1670	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.00	0.00	0.00	0.00
P118 Halls Bayou @ Tidwell	1675	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P118 Halls Bayou @ Jensen	1680	0.00	0.23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P100 Greens Bayou @ Tidwell	1685	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
P118 Halls Bayou @ Airlin	1690	0.00	0.00	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SH 288 @ MacGregor	3010	0.00	0.00	0.08	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00
IH 45 S HOV @ DwT Terminus	3020	0.00	0.00	0.08	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00
Galveston Rd @ Allendale	3030	0.00	0.00	0.08	0.00	0.00	0.00	0.20	0.00	0.00	0.24	1.77
IH 10 @ Normandy	3060	0.00	0.00	0.00	0.00	0.04	0.00	0.98	0.00	0.00	0.00	0.00
SH 288 @ Loop 610	3070	0.00	0.00	0.00	0.00	0.00	0.00	0.63	0.00	0.00	0.00	0.00
IH 45 W Road HOV Entrance	3520	0.00	0.00	0.08	0.00	0.00	0.30	0.00	0.00	0.00	0.00	2.20
Metro Rail @ Fannin	3990	0.00	0.00	0.08	0.00	0.00	0.00	0.94	0.00	0.00	0.00	0.00
Brazos River @ SH 36	4310	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.04	0.04	0.00	0.00

Higlighted columns indicate the sampling days

Table 3.9 *E.coli*, Flow and TSS Data from Intensive Survey # 3

WATERSHED	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	*Flow (cfs)*	*TSS (mg/L)*
GREENS BAYOU	1016C	7/17/2006	11124	11:05	424	0.6	<4.0
		7/17/2006		17:25	986	0.7	<4.0
		7/19/2006		11:20	1698	0.6	<4.0
		7/19/2006		16:40	641	0.5	<4.0
		7/20/2006		12:45	1150	1.0	4.4
		7/20/2006		18:15	571	0.7	<4.0
	1016D	7/17/2006	16676	11:25	16355	0.2	<4.0
		7/17/2006		17:50	3189	0.2	<4.0
		7/19/2006		12:10	3096	0.3	<4.0
		7/19/2006		18:10	1011	0.2	<4.0
		7/20/2006		13:08	2255	0.5	<4.0
		7/20/2006		18:35	1378	0.3	<4.0
	1016	7/17/2006	11371	11:45	222	20.5	22
		7/17/2006		18:10	36	13.2	12.4
		7/19/2006		11:55	1329	22.2	14.8
		7/19/2006		18:40	452	10.4	12.8
		7/20/2006		13:24	266	10.9	21.6
		7/21/2006		9:45	452	22.5	4.4
	1016B	7/17/2006	20024 (TBD-02)	13:04	28	0.0	4
		7/17/2006		18:50	368	1.1	4.4
		7/19/2006		13:10	54	0.1	10
		7/20/2006		9:55	71	0.2	<4.0
		7/20/2006		14:10	31	0.2	<4.0
		7/21/2006		10:45	63	0.0	4
HALLS BAYOU	1006J	7/17/2006	16665	12:37	1063	0.2	<4.0
		7/17/2006		18:30	260	0.2	<4.0
		7/19/2006		12:50	217	0.4	4
		7/20/2006		9:20	524	0.0	<4.0
		7/20/2006		13:50	525	0.4	4.4
		7/21/2006		10:05	301	0.1	9.4
	1006D	7/18/2006	20023 TBD # 1	9:45	95	4.1	17.6
		7/19/2006		14:03	7	14.4	8
		7/20/2006		10:30	72	10.8	<4.0
		7/20/2006		15:40	64	17.4	8.8
		7/21/2006		11:35	30	9.9	6.4
	1006I	7/17/2006	16666	14:25	560	0.0	153
		7/18/2006		9:30	518	0.0	10
		7/19/2006		13:30	658	0.0	246
		7/20/2006		10:10	473	0.0	10.4
		7/20/2006		15:25	565	0.0	9.2
		7/21/2006		11:08	211	0.0	162

Table 3.9 *E.coli*, Flow and TSS Data from Intensive Survey # 3 – *Cont'd*

WATERSHED	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	*Flow (cfs)*	*TSS (mg/L)*
BRAYS BAYOU	1007P	7/17/2006	15848	10:35	515	5.7	29.6
		7/18/2006		10:00	20140	11.8	43.2
		7/19/2006		12:15	5515	10.9	23.6
		7/20/2006		9:25	898	6.9	24
		7/20/2006		14:50	715	9.6	26.8
		7/21/2006			721	3.8	32.4
	1007E	7/17/2006	16652	11:25	3551	2.1	<4.0
		7/18/2006		10:45	177	0.2	<4.0
		7/19/2006		13:10	29	0.7	<4.0
		7/20/2006		10:00	328	0.3	<4.0
		7/20/2006		15:30	9	0.3	<4.0
		7/21/2006			221	0.2	< 4.0
	1007B	7/17/2006	11138	12:10	608	measurements	18
		7/19/2006		11:35	18605	177	27.2
		7/19/2006		16:50	1508	142	16.4
		7/20/2006		13:00	1729	147	21.2
		7/20/2006		18:05	733	132	19.2
		7/21/2006		12:55	568	131	19.2
SIMS BAYOU	1007N	7/17/2006	16655	11:50	42690	0.1	10.4
		7/18/2006		11:11	9234	0.2	12
		7/19/2006		1405	817	1.1	26
		7/20/2006		10:15	551	0.9	42.8
		7/20/2006		16:00	849	0.9	35.2
		7/21/2006		10:45	548	-0.7	41.6
	1007	7/17/2006	11132	14:40	462	7.4	86.8
		7/19/2006		10:30	7235	143	134
		7/19/2006		14:40	4030	190	153
		7/20/2006		11:00	1017	85	82
		7/20/2006		16:20	984	103	89
		7/21/2006		11:10	845	51	81.2

Table 3.9 *E.coli*, Flow and TSS Data from Intensive Survey # 3 – *Cont'd*

WATERSHED	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	*Flow (cfs)*	*TSS (mg/L)*
EASTERN HOUSTON WATERSHED	1007H	7/17/2006	16659	15:15	770	0.6	<4.0
		7/19/2006		10:00	155310	0.4	11.6
		7/19/2006		15:15	17125	0.1	8
		7/20/2006		11:25	4133	0.3	6.4
		7/20/2006		16:45	2618	0.5	13.2
		7/21/2006		11:35	796	0.1	< 4.0
	1007I	7/17/2006	16658	17:45	1424	1.1	4.4
		7/19/2006		16:55	185965	-0.9	23.6
		7/19/2006		11:50	220295	-2.4	20
		7/20/2006		11:40	>241900.6	4.5	18.4
		7/20/2006		9:45	>241900.6	6.1	18.4
		7/21/2006		15:30	>241900.6	-4.5	23.6
	1007G	7/17/2006	16653	12:35	667	1.1	<4.0
		7/19/2006		11:00	121335	3.7	8.8
		7/19/2006		17:10	19830	1.3	<4.0
		7/20/2006		13:25	4762	1.7	<4.0
		7/20/2006		18:35	3365	1.4	<4.0
		7/21/2006		13:25	2207	0.7	< 4.0
	1007K	7/17/2006	16650	18:25	12015	1.3	17.2
		7/19/2006		15:50	41660	3.3	4
		7/19/2006		12:00	20640	1.9	4
		7/20/2006		17:25	38925	0.6	34.4
		7/20/2006		12:10	11450	34.5	< 4.0
		7/21/2006		9:10	>241900.6	5.2	4

Table 3.9 *E.coli*, Flow and TSS Data from Intensive Survey # 3 – *Cont'd*

WATERSHED	SEGMENT ID	DATE	SITE ID	TIME	*E.coli* (MPN/100mL)	*Flow (cfs)*	*TSS (mg/L)*
EASTERN HOUSTON WATERSHED	1007O	7/18/2006	16649	9:15	26180	0.0	4.8
		7/19/2006		8:45	24860	0.0	6.8
		7/19/2006		16:15	23725	0.0	5.6
		7/20/2006		12:31	31785	0.0	7.2
		7/20/2006		17:45	38730	0.0	23.2
		7/21/2006		12:30	72840	0.0	17.2
	1006H	7/17/2006	16663	15:14	61	0.5	<4.0
		7/18/2006		10:35	398	3.4	10.8
		7/19/2006		15:30	78	1.4	10.4
		7/20/2006		11:00	83	2.4	13.6
		7/20/2006		16:10	54	2.4	10
		7/21/2006		12:15	72	1.3	11.2
	1006F	7/17/2006	16662	15:51	570	0.1	6.8
		7/19/2006		9:45	1496	0.4	6
		7/19/2006		16:00	518	0.3	6.4
		7/20/2006		11:38	230	0.2	<4.0
		7/20/2006		16:40	169	0.1	11.6
		7/21/2006		12:40	89	0.4	< 4.0
	1007M	7/17/2006	16657	16:40	75	0.2	16
		7/19/2006		10:55	5850	0.9	10.8
		7/19/2006		17:00	3990	0.4	8.8
		7/20/2006		12:15	2618	0.2	12.8
		7/20/2006		17:40	943	0.1	12.4
		7/21/2006		13:40	376	0.1	16
	1007R	7/17/2006	11128	16:15	27	12	16.8
		7/19/2006		10:35	763	11	16.4
		7/19/2006		16:35	435	19	15.2
		7/20/2006		12:00	59	46	12
		7/20/2006		17:20	51	31	12.4
		7/21/2006		13:10	39	22	17.6

Legend for the Field Measurements and E.coli Data Tables

Color	Description
	Precision Criteria for EC Failed
	Holding times for EC Not met
	TSS Field Duplicate Criteria Failed
	EC Field Duplicate Criteria Failed

Table 3.10 Field parameters recorded during Intensive Survey # 3

WATERSHED	SEGMENT ID	DATE	SITE ID	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
GREENS BAYOU	1016C	7/17/2006	11124	29.54	629	0.3	73.3	5.57	7.74	1.3
		7/17/2006		30.41	642	0.31	94.2	7.03	8.09	1.9
		7/19/2006		28.65	498	0.24	47.4	3.66	7.60	5.4
		7/19/2006		29.82	531	0.25	13.2	1.00	7.81	1.8
		7/20/2006		29.16	437	0.21	82.7	6.31	7.87	2.7
		7/20/2006		29.22	420	0.2	73.9	5.65	7.86	7.3
	1016D	7/17/2006	16676	28.38	705	0.34	45.1	3.25	7.90	0.3
		7/17/2006		29.66	756	0.36	61.2	4.63	7.88	2.6
		7/19/2006		27.69	825	0.4	5.4	0.45	7.62	0.6
		7/19/2006		29.20	817	0.4	9.3	0.72	7.62	0.6
		7/20/2006		28.16	491	0.23	61.7	4.71	7.79	1.8
		7/20/2006		29.51	616	0.3	57.7	4.30	7.73	1.6
	1016	7/17/2006	11371	31.66	776	0.37	104	7.61	8.34	17.0
		7/17/2006		35.18	765	0.37	166	11.5	8.58	14.6
		7/19/2006		31.07	655	0.31	41.8	3.10	7.91	13.0
		7/19/2006		33.38	655	0.31	22.0	1.58	8.45	13.1
		7/20/2006		…..	…..	…..	…..	…..	…..	…..
		7/21/2006		30.55	822	0.4	78.4	5.86	8.04	24.2
	1016B	7/17/2006	20024 (TBD-02)	31.73	1122	0.55	146	10.7	8.44	10.3
		7/17/2006		30.15	803	0.39	84.9	6.25	8.14	3.9
		7/19/2006		31.64	1505	0.75	27.9	2.64	8.04	3.1
		7/20/2006		29.44	1121	0.55	63.3	4.77	7.97	4.2
		7/20/2006		31.86	1129	0.55	132	9.7	8.25	3.5
		7/21/2006		29.81	1555	0.78	82.5	6.24	7.82	1.0
HALLS BAYOU	1006J	7/17/2006	16665	29.25	739	0.36	67.0	5.07	7.91	2.4
		7/17/2006		30.68	743	0.36	74.6	5.57	7.94	2.4
		7/19/2006		28.46	801	0.39	24.1	1.88	7.75	1.5
		7/20/2006		27.16	626	0.3	43.2	3.44	7.72	3.2
		7/20/2006		28.67	547	0.26	68.0	5.22	7.86	2.6
		7/21/2006		27.23	…..	0.12	50.2	3.97	7.88	5.9
	1006D	7/18/2006	20023 TBD # 1	31.09	789	0.38	83.4	6.18	8.22	6.8
		7/19/2006		33.01	784	0.38	43.1	3.10	8.27	7.4
		7/20/2006		29.97	632	0.3	86.1	6.41	8.06	6.5
		7/20/2006		32.86	612	0.29	120	8.7	8.33	25.7
		7/21/2006		30.75	665	0.32	118	8.7	8.14	8.0
	1006I	7/17/2006	16666	28.71	2073	1.05	61.6	4.77	7.78	4.8
		7/18/2006		27.24	2224	1.13	56.5	4.39	7.90	9.3
		7/19/2006		28.90	2068	1.05	21.2	1.55	7.78	9.8
		7/20/2006		26.26	1297	0.64	65.0	5.24	7.79	12.3
		7/20/2006		29.01	1442	0.72	99.0	7.52	7.92	8.4
		7/21/2006		19.23	1002	0.49	58.1	4.65	7.78	4.4

Table 3.10 Field parameters recorded during Intensive Survey # 3 - Cont'd

WATERSHED	SEGMENT II	DATE	SITE ID	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
BRAYS BAYOU	1007P	7/17/2006	15848	29.83	930	0.45	70.3	5.31	7.57	21.3
		7/18/2006		36.98	796	0.38	64.5	4.28	7.66	26.7
		7/19/2006		30.93	607	0.29	64.0	4.75	7.71	18.1
		7/20/2006		38.72	455	0.21	50.2	3.29	7.44	16.2
		7/20/2006		51.73	368	0.17	107	5.7	7.59	28.6
		7/21/2006		28.8	753	0.36	54.6	4.24	7.49	22.1
	1007E	7/17/2006	16652	33.35	725	0.35	234	16.7	8.44	0.1
		7/18/2006		38.16	587	0.27	296	16.7	9.12	1.5
		7/19/2006		50.53	251	0.11	224	12.2	9.82	22.8
		7/20/2006		36.73	219	0.1	204	13.4	8.99	2.2
		7/20/2006		50.16	184	0.08	233	12.6	10.20	1.7
		7/21/2006		29.12	401	0.19	208	16.0	8.72	-0.2
	1007B	7/17/2006	11138	36.60	837	0.4	230	15.5	8.44	0.1
		7/19/2006		30.72	557	0.27	186	13.9	8.56	22.3
		7/19/2006		46.91	519	0.24	166	9.5	8.91	16.6
		7/20/2006		51.61	337	0.15	177	9.5	8.54	16.3
		7/20/2006		35.36	445	0.21	227	16.0	9.04	14.8
		7/21/2006		30.72	654	0.35	203	14.0	8.76	17.2
SIMS BAYOU	1007N	7/17/2006	16655	31.67	1197	0.59	105	7.7	8.15	16.7
		7/18/2006		37.96	1085	0.52	71.9	4.77	8.15	14.9
		7/19/2006		44.86	573	0.27	110	6.53	8.15	36.0
		7/20/2006		41.53	390	0.18	55.7	3.47	7.96	19.2
		7/20/2006		50.50	367	0.16	127	7.1	8.38	32.2
		7/21/2006		32.47	643	0.39	66.2	5.91	7.76	19.1
	1007	7/17/2006	11132	34.63	1060	0.51	139	10	8.32	64.6
		7/19/2006		41.98	478	0.22	72.7	4.50	7.53	117.0
		7/19/2006		41.75	380	0.18	69.1	4.26	8.32	133.1
		7/20/2006		46.53	223	0.1	61.9	3.58	8.04	73.2
		7/20/2006		50.83	227	0.1	79.6	4.10	7.99	73.9
		7/21/2006		30.06	530	0.25	61.1	4.60	8.10	81.2

Table 3.10 Field parameters recorded during Intensive Survey # 3 - Cont'd

WATERSHED	SEGMENT II	DATE	SITE ID	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
EASTERN HOUSTON WATERSHED	1007H	7/17/2006	16659	37.03	537	0.25	131	9	8.30	1.8
		7/19/2006		38.70	341	0.16	13.7	0.89	7.32	12.3
		7/19/2006		48.90	338	0.15	30.1	1.65	7.86	7.7
		7/20/2006		45.72	213	0.1	26.0	1.52	7.71	3.5
		7/20/2006		46.30	257	0.12	89.0	5.45	7.83	7.9
		7/21/2006		29.00	480	0.23	44.7	3.44	7.80	0.3
	1007I	7/17/2006	16658	31.23	662	0.32	0.8	0.03	7.39	12.2
		7/19/2006		42.47	245	0.11	52.3	3.22	7.38	28.4
		7/19/2006		40.41	279	0.13	14.1	0.84	8.60	23.2
		7/20/2006		49.80	153	0.07	-5.6	-0.32	7.58	18.9
		7/20/2006		48.90	152	0.07	-0.6	-0.04	7.58	34.9
		7/21/2006		28.06	355	0.18	3.5	0.31	8.02	12.3
	1007G	7/17/2006	16653	33.99	546	0.26	68.1	4.79	8.19	0.3
		7/19/2006		28.74	281	0.13	55.3	4.28	7.55	7.6
		7/19/2006		49.10	234	0.11	78.3	4.40	7.46	1.8
		7/20/2006		47.27	170	0.08	36.1	2.09	7.38	0.9
		7/20/2006		29.78	241	0.11	36.4	2.81	7.41	0.8
		7/21/2006		29.44	417	0.2	55.2	4.20	7.40	1.8
	1007K	7/17/2006	16650	36.92	792	0.38	144	10	7.90	13.4
		7/19/2006		41.68	223	0.1	25.1	1.61	7.42	4.0
		7/19/2006		51.74	225	0.1	54.1	2.88	8.21	2.5
		7/20/2006		48.25	165	0.07	37.8	2.12	7.41	0.5
		7/20/2006		46.97	169	0.08	64.2	3.65	7.59	28.0
		7/21/2006		30.30	307	0.14	31.2	2.35	8.00	1.7

Table 3.10 Field parameters recorded during Intensive Survey # 3 - Cont'd

WATERSHED	SEGMENT ID	DATE	SITE ID	TEMP	COND	SAL	DO%	DO mg/L	pH	TURB
EASTERN HOUSTON WATERSHED	1007O	7/18/2006	16649	35.14	824	0.4	21.3	1.47	8.34	4.6
		7/19/2006		39.18	614	0.29	26.5	1.74	7.53	7.7
		7/19/2006		45.56	548	0.28	33.0	2.08	8.04	7.9
		7/20/2006		45.25	333	0.15	24.8	1.43	7.24	7.1
		7/20/2006		44.89	240	0.11	37.7	2.25	7.46	24.0
		7/21/2006		32.03	467	0.22	30.3	2.10	7.98	12.2
	1006H	7/17/2006	16663	29.90	906	0.44	99.3	7.48	8.17	2.8
		7/18/2006		29.42	1269	0.63	79.6	6.03	8.17	20.1
		7/19/2006		30.16	1289	0.64	34.7	2.61	8.01	15.1
		7/20/2006		28.64	1033	0.51	82.3	6.29	8.07	15.0
		7/20/2006		30.04	1018	0.5	88.9	6.68	8.08	14.4
		7/21/2006		28.84	1085	0.53	95.3	7.50	7.99	10.7
	1006F	7/17/2006	16662	36.97	610	0.29	482	32	8.37	45.7
		7/19/2006		29.05	584	0.28	63.1	5.11	7.49	3.6
		7/19/2006		34.90	579	0.27	43.5	3.01	7.82	5.1
		7/20/2006		31.65	475	0.22	136	10	7.96	9.3
		7/20/2006		34.22	477	0.22	207	15	8.34	12.3
		7/21/2006		32.77	791	0.09	205	15	7.93	2.2
	1007M	7/17/2006	16657	35.35	451	0.21	252	18	8.36	15.1
		7/19/2006		29.34	408	0.19	69.6	5.29	7.70	10.0
		7/19/2006		32.79	418	0.2	29.2	2.10	7.84	7.5
		7/20/2006		30.23	353	0.17	73.0	5.11	7.93	14.2
		7/20/2006		32.25	361	0.17	99.6	7.24	7.95	11.0
		7/21/2006		32.73	587	0.28	50.9	3.73	8.00	11.2
	1007R	7/17/2006	11128	32.74	565	0.27	325	23	8.23	9.2
		7/19/2006		29.57	604	0.29	85.8	6.50	7.72	8.5
		7/19/2006		32.04	621	0.3	35.8	2.61	7.96	9.5
		7/20/2006		29.92	488	0.23	87.8	6.62	7.93	8.8
		7/20/2006		32.01	496	0.24	115	8	8.14	10.6
		7/21/2006		31.04	708	0.34	135	10	7.89	10.1

Purple Cells indicate unreasonably high DO% & DO mg/L measurements by YSI

Units		
TURB	Turbidity	NTU
SAL	Salinity	ppt
COND	Conductivity	uS/cm
TMEP	Temperature	^{o}C

CHAPTER 4

SUMMARY AND FUTURE ACTIVITIES

4.1 SUMMARY

Results from the sampling conducted at 21 locations in the Houston Metro area during FY 06 were presented. The historical load duration analysis indicated that sources of bacteria in the Metro area are likely to be diverse in nature and of dry – weather and wet – weather origin.

4.2 PLANNED ACTIVITIES FOR THE FUTURE

The next quarter will focus on further analysis of the data from the Metro intensive surveys 1 through 3 and developing a strategy for calculating the TMDL.