MARSH BAYOU WATERSHED TMDL FOR OXYGEN-DEMANDING SUBSTANCES INCLUDING A WATERSHED NONPOINT SOURCE LOAD ALLOCATION

SUBSEGMENT 030603

TMDL Report

Engineering Group 2
Environmental Technology Division
Office of Environmental Assessment
Louisiana Department of Environmental Quality

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Marsh Bayou Watershed TMDL
Subsegment 030603
Originated: May 25, 2001
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EXECUTIVE SUMMARY

A Total Maximum Daily Load (TMDL) for oxygen demanding substances has been developed for the Marsh Bayou Watershed based on hydrologic and water quality data available as of August, 2000. Marsh Bayou was not included on the 1996 Section 303(d), the 1998 Section 303(d), or the Court Ordered Section 303(d) lists as not meeting the water quality standard for dissolved oxygen. However, Marsh Bayou has been included in the year 2000 305(b) list as being impaired due to low dissolved oxygen. The year 2000 305(b) list was based upon data collected in 1999 and new assessment methodology. The suspected cause of impairment is natural sources and the waterbody has been proclaimed by LDEQ to be naturally dystrophic. Much of the landuse in the subsegment consists of agriculture, wetland, rangeland, and forests (naturally wooded). The stream is believed to be naturally dystrophic due to low slopes, with much of the nonpoint loading coming from natural sources.

According to the year 2000 Environmental Regulatory Code, Part IX Water Quality Regulations, the dissolved oxygen standard for Marsh Bayou is 5.0 mg/L for both the summer (May – October) and winter (November – April) seasons (LA DEQ, 2000). It is projected that a 67 percent reduction of the total nonpoint loading will bring the stream into compliance with the existing dissolved oxygen criteria for the summer critical conditions.

The Marsh Bayou watershed is subsegment 030603 of the Calcasieu River Basin (Basin 3). Subsegment 030603 is comprised of Marsh Bayou and all tributaries, including Little Marsh Bayou and numerous unnamed tributaries. Subsegment 030603 was void of any known point source dischargers.

TMDLs for the Calcasieu River Basin are scheduled for completion by December 31, 2001. Therefore, the completion of a TMDL for Marsh Bayou is considered to be high priority by LA DEQ.

Marsh Bayou was modeled from a headwater boundary site (River Kilometer 9.52) to its confluence with the Calcasieu River (River Kilometer 0.00). The survey was conducted on June 13-15, 2000. Subcritical (drought) conditions appeared to exist throughout the bayou. Thus, the data collected may not be representative of typical, low-flow conditions in the bayou. Many of the traditionally perennial waterbodies in the Calcasieu River Basin were pooled or dry. None of the tributaries to Marsh Bayou had a velocity that could be measured with typical survey equipment. It was anticipated that these tributaries either become pooled or do not flow during typical low flow conditions. Consequently, none of the tributaries were included as boundary sites. Velocity could be measured at only the headwater site on the main stem. Stream velocity was too low to be measured at the other sites along the mainstem of Marsh Bayou.

However, there was a beaver dam near the lower end of the bayou. According to survey personnel, the beaver dam had a head differential of approximately 1.0 foot and water was seen trickling through the beaver dam. Based upon this information, it was determined that the bayou contained a small amount of streamflow from the headwater site through the beaver dam. Therefore the streamflow measured at the headwater site was continued throughout the calibration model.

The headwater boundary loads were the only loads represented as point source loads for the purpose of the model input. These loads were actually the result of the nonpoint loads in the drainage area upstream of the headwater survey site. A review of LA DEQ's Permit Tracking System did not reveal any facilities that discharged into Marsh Bayou.

Nonpoint loading dominated the bayou. The nonpoint source loads included headwater loading (as a boundary condition), nonpoint loading not associated with flow (representing resuspension) throughout the modeled reaches, and sediment oxygen demand.

The various spreadsheets that were used in conjunction with the modeling program may be found in the appendices in the general order in which they were used. The flow calibration was based on measurements taken during the survey of Marsh Bayou as well as observations made regarding the hydrologic conditions of the stream. Water quality calibration was also based on measurements taken during this survey.

Summer and winter projection models were developed to meet the current dissolved oxygen (D.O.) criterion during the summer and winter critical conditions. Currently, the D.O. criterion for Marsh Bayou is 5.0 mg/L throughout the year. The critical conditions were based upon streamflow and temperature. Projection models were developed by reducing boundary loads, sediment oxygen demand loads, and nonpoint source loads from the loads used in the calibration model. Typically, load allocations are developed once the projection model demonstrates that the D.O. criterion can be met.

Various summer and winter projections were simulated. Each model run with a percent reduction of the man-made load less than 100 percent includes a margin of safety (MOS) of 20 percent that has been applied to the man-made portion of the load. The MOS was not applied to the natural background loads. The table on the following page summarizes the results of simulating the various reductions of the man-made and background loading for the summer and winter critical conditions.

All natural background and man-made loads mentioned in this report are considered to be a best estimate. Generally, the natural background loads are based on reference stream data. Some other data may be used if it is representative of the waterbody. In that regard, the natural background load is a best estimate. The man-made loads are generally the difference between the calibration loads and the natural background loads. Therefore, the man-made loads are also considered to be a best estimate.

Margin of Safety Applied	% Reduction of Man-Made Loading	% Reduction of Natural Background Loading	% Reduction of the Total Nonpoint Loading	Summer Minimum D.O. Concentration (mg/L)	Winter Minimum D.O. Concentration (mg/L)
20%	0	0	0	0.00	NA
	50	0	22	1.72	4.78
	60	0	29	2.48	5.46
	70	0	37	2.99	5.87
	80	0	44	3.50	NA
	90	0	51	4.00	NA
0%	100	0	58	4.51	7.13
	100	10	63	4.82	NA
	100	20	67	5.12	7.59
	100	25	69	5.27	7.70
	100	50	79	6.03	8.27

The results demonstrate that approximately 67 percent of the total nonpoint loading must be eliminated in order to meet the existing stream criterion in Marsh Bayou during the summer critical conditions. The existing stream criterion is 5.0 mg/L. Results of this type demonstrate that the stream is naturally dystrophic and that an inappropriate D.O. criterion has been established for Marsh Bayou.

As an alternative, a stream criterion of 3.0 mg/L is presented for the summer critical conditions. The modeling results demonstrate that a 37 percent reduction of the total nonpoint loading would result in an instream dissolved oxygen concentration of 2.99 mg/L. According to previous statements made by Region 6 of EPA, this can be accepted as meeting a D.O. criterion of 3.0 mg/L.

A land use map is presented in Appendix A. According to the map, land use in the Marsh Bayou watershed is fairly homogeneous. Agricultural land dominates the subsegment. It covers approximately 45.04 percent of the subsegment. Wetlands cover approximately 19.90 percent of the watershed, primarily along the bayou. Rangelands occupy approximately 19.04 percent of the watershed. They appear to be scattered throughout the subsegment. Forestlands occupy approximately 14.35 percent of the watershed. The primary concentration of forestland appears to be in the northeast region of the subsegment. Landuse activities may change periodically due to weather and/or economic conditions.

During the reconaissance survey, much of the land adjacent to Marsh Bayou appeared to have minimal man-made impacts. A forested buffer zone with adjacent pasture land existed along most of the surveyed reaches. The size of the buffer zone varied. This would indicate that much of the loading is natural.

Any statement regarding "man-made" or "natural background" loading is based upon the use of reference stream data (or other applicable data) to represent "natural background" loading. Since this bayou appeared to be relatively unimpacted, a reduction in the total nonpoint loading is probably more appropriate.

Total Maximum Daily Loads (TMDLs) and Load Allocations (LAs) were developed for the existing stream criterion of 5.0 mg/L (throughout the year) and alternative stream criteria of 3.0 mg/L / 5.0 mg/L (summer / winter). The summer and winter season TMDLs and accompanying LAs are shown in the tables below. In some cases the sum of the LAs and MOSs may differ from the TMDL by a value of one in units of lbs/day. This is simply due to round off error in the spreadsheets used to calculate the values. The total MOS loads are not 20 percent of the TMDLs because the MOS is applied to the man-made portion of the load and not the natural background load. For modeling purposes the summer and winter seasons were considered to be May through October and November through April, respectively. The summer and winter seasons were selected based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual (LTP), revision 6, dated September 8, 2000.

TMDLs and LAs For the Existing Criterion

Loading Description	Summer season (May – Oct.) BOD Load (lbs./day)	Winter season (Nov. – April) BOD Load (lbs./day)
Total point source allocations (WLA)	0	0
Point source margin of safety (MOS)	0	0
Headwater/Tributary Loads	95	110
Benthic Loads (based upon nonpoint and SOD loads used in the projection)	714	490
Total maximum daily load (TMDL)	809	600
Nonpoint source margin of safety (MOS for benthic and boundary loads)	0	0
Natural Nonpoint Load	809	600
Man-Made Nonpoint Load	0	0

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TMDLs and LAs For the Alternative Criteria

	Summer season (May – Oct.)	Winter season (Nov. – April)
Loading Description	BOD Load (lbs./day)	BOD Load (lbs./day)
Total point source allocations (WLA)	0	0
Point source margin of safety (MOS)	0	0
Headwater/Tributary Loads	168	192
Benthic Loads (based upon nonpoint and SOD loads used in the projection)	1182	825
Total maximum daily load (TMDL)	1435	1085
Nonpoint source margin of safety (MOS for benthic and boundary loads)	86	68
Natural Nonpoint Load	1004	747
Man-Made Nonpoint Load	345	269

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1. Introduction

A total maximum daily load (TMDL) for oxygen-demanding substances to meet the dissolved oxygen (D.O.) criterion has been developed for the Marsh Bayou watershed. The TMDL was based on hydrologic and water quality data available as of August 23, 2000. The Marsh Bayou watershed is subsegment 030603 of the Calcasieu River Basin (Basin 03). Marsh Bayou was not included on the 1996 Section 303(d), the 1998 Section 303(d), or the Court Ordered Section 303(d) lists as not meeting the water quality standard for dissolved oxygen. However, Marsh Bayou has been included in the year 2000 305(b) list as being impaired due to organic enrichment/low dissolved oxygen (D.O.). The year 2000 305(b) list was based upon data collected in 1999 and new assessment methodology. The suspected cause of impairment is natural sources, and the waterbody has been proclaimed by LDEQ to be naturally dystrophic. In addition, the sampling was done during drought conditions, which contribute to low dissolved oxygen conditions in the stream.

The Marsh Bayou watershed is subsegment 030603 of the Calcasieu River Basin (Basin 03). Subsegment 030603 is comprised of Marsh Bayou and numerous unnamed tributaries. TMDLs for the Calcasieu River Basin are scheduled for completion by December 31, 2001. Therefore the completion of a TMDL for Marsh Bayou is considered to be high priority by LA DEQ.

Much of the landuse in the subsegment consists of agriculture, wetlands, rangelands, and forests (naturally wooded). The bayou has buffer zones of varying sizes. The buffer zones consist of forests and riparian vegetation. The stream is believed to be naturally dystrophic due to low slopes, with much of the nonpoint loading source (NPS) coming from natural sources (decaying plant matter). This TMDL establishes load limitations for oxygen-demanding substances and goals for reduction of those pollutants.

A calibrated water quality model for the Marsh Bayou watershed was developed and projections were run to quantify the nonpoint source load allocations (LAs) required to meet established and/or proposed dissolved oxygen criteria. This report presents the model development and results.

1.1 Seasonality and Margin of Safety

The Clean Water Act requires the consideration of seasonal variation of conditions affecting the constituent of concern and the inclusion of a margin of safety (MOS) in the development of a TMDL.

Critical conditions for dissolved oxygen were determined for Marsh Bayou using water quality assessment data from the station 0839 on the LDEQ Ambient Monitoring Network. The critical conditions for dissolved oxygen concentrations were those of negligible nonpoint run-off and low stream flow combined with high temperature.

When the rainfall runoff (and nonpoint loading) and stream flow are high, turbulence is higher due to the higher flow and the temperature is lowered by the runoff. In addition, runoff coefficients are higher in cooler weather due to reduced evaporation and evapotranspiration, so that the high flow periods of the year tend to be the cooler periods. D.O. saturation rates are, of course, much higher when water temperatures are cooler, but BOD decay rates are much lower. For these reasons, periods of high loading are periods of higher reaeration and dissolved oxygen but not necessarily periods of high BOD decay.

This phenomenon was interpreted in TMDL modeling by assuming that annual nonpoint loading, rather than loading for any particular day, is responsible for the accumulated benthic blanket of the waterbody, which is, in turn, expressed as SOD and/or resuspended BOD in the model. This accumulated loading has its greatest impact on the waterbody during periods of higher temperature and lower flow. The man-made portion of the NPS loading is the difference between the calibration load and the reference stream load where the calibration load is higher.

Critical summer conditions were simulated as a part of the model projections. The critical conditions were based upon flow and temperature. Critical summer flow conditions were simulated in the Marsh Bayou dissolved oxygen TMDL projection model by using the greater of the estimated 7Q10 flow or 0.1 cfs for all headwaters as stated in the LTP. The estimated 7Q10 was 2.17 cfs(0.061 cms). The LTP recommends a temperature of 30°C or, when appropriate data is available, the 90th percentile temperature for the summer months. Marsh Bayou had assessment data, therefore the 90th percentile temperature for the summer months was used. The summer months were assumed to be May through October. Incremental flow was assumed to be zero; model loading was from nonpoint sources and sediment oxygen demand. In addition, a 20% margin of safety was applied to the man-made portion of all loads. (LDEQ, 2000)

Critical winter conditions were also simulated based upon flow and temperature. Critical winter flow conditions were simulated by using the greater of the estimated 7Q10 flow or 1.0 cfs as stated in the LTP. The estimated winter 7Q10 was 2.51 cfs(0.071 cms). The recommended temperature was 20°C or, if appropriate data is available, the 90th percentile temperature for the winter months. The winter months were assumed to be November through April. Again, incremental flow was assumed to be zero; model loading was from nonpoint sources and sediment oxygen demand. Again, a 20% margin of safety was applied to the man-made portion of all loads.(LDEQ, 2000)

In reality, the highest stream temperatures occur in July-August and the lowest stream flows typically occur in October-November. The model is established as if these conditions happened at the same time. Other conservative assumptions regarding rates and loadings are also made during the modeling process. A list of assumptions used during the model and TMDL development process is provided in the following text. The explicit MOS was applied in addition to these conservative assumptions. The MOS was intended to account for any future growth, safety, model uncertainty, and data inadequacies.

List of Assumptions

1. The bayou was surveyed under steady-state conditions.
2. "Natural background" loading was estimated using available data from LA DEQ's reference stream data. However, natural background loading may be greater than the loading provided by the reference stream data or the loading indicated by land use statistics.
3. Generally, the man-made loads were estimated to be the difference between the calibration loads and the natural background loads.
4. A 20% margin of safety (MOS) was applied to the man-made portion of the loading.
5. Critical streamflow and stream temperature occur at the same time.
6. The percent reduction of the man-made loading used for the summer projection was also applied to the winter projection. This was done because previous data analysis by LA DEQ has demonstrated the impact of the nonpoint loading is activated during periods of higher stream temperatures and lower streamflows, although the load accumulation occurs throughout the year. In reality, the percent reduction of the man-made loading required to meet the D.O. criterion under the winter critical conditions would be less than the percent reduction required for the summer critical conditions. This also results in a summer TMDL that is higher than the winter TMDL.
7. The cross-sectional geometry for reaches 5 - 6 and 9 did not vary greatly with streamflow. The geometry for the remaining reaches, primarily reaches 1 - 4, varied slightly with flow. The geometry for reach 10 varied with flow, provided that the water was running over or across the beaver dam. Otherwise, the width and depth was zero. Geometry for the reaches downstream of the beaver dam were affected more by the water level in the Calcasieu River than the streamflow in Marsh Bayou.
8. Little Marsh Bayou doesn't flow during periods of low flow conditions due to the effects of the beaver dam and the Calcasieu River.
9. The projections are intended to simulate the combined effects of critical streamflow and critical stream temperature.

2. Study Area Description

2.1 Calcasieu River Basin

The Calcasieu River Basin is located in southwestern Louisiana. It begins in the hills west of Alexandria, LA and flows south for approximately 257.44 km (160 miles) to the Gulf of Mexico. The mouth of the river is approximately 48.27 km (30 miles) east of the Texas-Louisiana state border. (LA DEQ, 1996). The basin encompasses the hill region of the state, the terrace region, and a section of the coastal marsh. The upper end of the basin consists of pine forested hills, while the lower end of the basin consists of brackish and salt marshes. Originally, much of the area was covered by tall prairie grasses, among which were scattered clumps of trees. (Soil Survey, 1962).

The hill region includes the longleaf pine forests, maximum elevations and relief, dendritic and trellis drainage, interior salt domes, wolds or cuestas (hard sedimentary rock), ironstone, excellent surface and groundwater resources, mature soils and the oldest rocks in the state. The soil types consist of coastal plain soils and flatwoods soils. Vegetation includes longleaf pine forests (longleaf pines, slash pines, some hardwoods) and bottomland hardwoods (cottonwood, sycamore, willow, water oaks, gum, maple, loblolly pine). (Kniffen, 1988)

The terrace region includes intermediate elevations and relief, older alluvium, and a large percentage of tabular surfaces. The terraces range from flatwoods to prairies. The flatwoods consist of low relief, mixed longleaf forests, bagols, pimple mounds, dendritic drainage, and flatwoods soils. Vegetation includes flatwoods (longleaf pine, oak, palmetto, wiregrass), cypress forests (cypress, tupelo), and bottomland hardwoods. The prairies consist of low relief, prairie grassland, prairie soils, pimple mounds, dendritic streams, ice-age channels, and platin or marais (small, shallow undrained ponds in the prairies). Vegetative cover consists of prairie vegetation (bluestem, broomsedge), cypress forests, and bottomland hardwoods (Kniffen, 1988)

The coastal region includes fresh and salt/brackish marshes. It consists of muck and peat soils. Vegetation includes cattail, Roseau cane, three-corner grass and other types of marsh grasses. The region exists in the lower end of the basin. (Kniffen, 1988)

The Calcasieu River Basin is bounded on the north and west by the Sabine River Basin, on the north by the Red River Basin, and on the east by the Mermentau River Basin. The Gulf of Mexico marks the southern boundary of the Calcasieu River. The Calcasieu River Basin is approximately 10,123 km^2 (3,910 mi^2) in area. (LA DEQ, 1996)

The slope of the land toward the Gulf is very gradual, especially in the coastal zone. This condition is ideal for agricultural use (LA DEQ, 1999). Land use in the Calcasieu River Basin is largely agricultural, with many areas that have been impacted by industrial dischargers.

Although the low slope condition provides fewer problems for agricultural activities (LA DEQ, 1999), it causes many of the streams in the Calcasieu River Basin to be characteristically sluggish. Many of the tributaries to the Calcasieu River, have low flows or become stagnant during critical times of the year. This statement is not accurate for the Calcasieu River itself, which tends to have a significant amount of flow throughout the year. Because many waterbodies in the basin have little gradient and sluggish flows, their reaeration potential is low.

Prior studies have shown nonpoint sources dominate the northern subsegments of the basin while a few municipal dischargers also exist in these subsegments. The nonpoint sources include runoff from pine forests, agricultural areas, and pastureland. Point source dischargers and saltwater intrusion dominate the southern subsegments of the basin below Lake Charles, LA. The point source discharges primarily include industrial and municipal dischargers, with the highest concentration of industry in the Lake Charles area.

2.2 Marsh Bayou Watershed, Subsegment 030603

Subsegment 030603 lies in Beauregard, Allen, Calcasieu, and Jefferson Davis parishes. It is comprised of Marsh Bayou as the main stem with several tributaries. The tributaries include Little Marsh Bayou and several unnamed tributaries. Little Marsh Bayou is the only tributary that may be perennial, based upon the USGS quadrangle maps. However, field observations, drainage areas, and estimated 7Q10 streamflow values indicate that it probably does not flow under low flow conditions. Marsh Bayou is a tributary of the Calcasieu River. Marsh Bayou has a drainage area of approximately 102.31 km^2(39.52 mi^2). It begins east of Dequincy and flows approximately 37.9 km (23.6 mi) to the confluence with Calcasieu River.

Average annual precipitation in the segment is approximately 59 inches, according to information provided by Jay Grymes, III, State Climatologist at the Southern Regional Climate Center, Louisiana Office of State Climatology. This value was based on the period of record from 1961 to 1990.

This area is typical of the vast majority of the basin with its low relief and sluggish waterbodies. Land use in the Marsh Bayou watershed is fairly homogeneous. In the subsegment under study, agricultural land and wetland account for 45.04 and 19.90 percent of the total subsegment area, respectively. Rangeland and forestland account for 19.04 and 14.35 percent of the subsegment area, respectively. Land uses in Subsegment 030603 are shown in Table 1 (LA DEQ, 2000).

Table 1. Land uses in Segment 030603 of the Marsh Bayou Subsegment

Land use	Acres	%
Urban	0.0	0.0
Rangeland	4697.549	19.04
Agricultural	11112.861	45.04
Forestland	3540.659	14.35
Water	410.848	1.67
Wetland	4909.311	19.90
Barren Land	0.0	0.0
Totals	24671.228	100

However, reconaissance surveys revealed that the majority of the land near the bayou was rangeland (pasture land) with varying amounts of buffer zones along the bayou. The buffer zones typically consisted of bottomland hardwoods, cypress forests, and other riparian vegetation. One of the bridge crossings was littered with trash, including discarded automotive fluid containers, automotive parts, a metal barrel, and other common garbage. Based on these observations, many of the reaches of Marsh Bayou may be considered to be in a "natural state". At least one of the bridge crossing locations may be an exception to this.

Based upon the reconaissance survey observations, some reaches of Marsh Bayou may have been dredged many years ago. Some reaches had steep banks and spoils, which were covered with trees and vegetation. The size and amount of the trees and vegetation indicate that the dredging may have occurred many years ago. The procedure may have inhibited the bayou's abilities to perform natural processes, such as reaeration. It may also have increased the amount of sediment and organic material deposited in the streambed, thereby increasing the SOD.

2.3 Water Quality Standards

Water quality standards for the State of Louisiana have been defined (LA DEQ, 2000). The standards are defined according to designated uses of the waterbodies. Both general narrative standards and numerical criteria have been defined. General standards include prevention of objectionable color, taste and odor, solids, toxics, oil and grease, foam, and nutrient conditions as well as aesthetic degradation. The numerical criteria are shown in Table 2.

Table 2. Current Numerical Criteria for Marsh Bayou (LA DEQ, 2000)

Parameter	Criteria
Cl, mg/L	60
SO_4, mg/L	60
pH	6.0-8.5
BAC, # col./100 mL	200 (5/1-10/31) and 1,000 (11/1-4/30)
Temperature, deg Celsius	32
TDS, mg/L	250
Dissolved Oxygen	5.0

Designated uses for Marsh Bayou from its headwaters to the Calcasieu River (waterbody subsegment 030603) include primary contact recreation (5/1-10/31), secondary contact recreation (11/1-4/30), and the propagation of fish and wildlife.

Section 303(d) of the Clean Water Act requires the identification, listing, ranking and development of TMDLs for waters that do not meet applicable water quality standards after implementation of technology-based controls. Marsh Bayou was not listed on the 1996 303(d), 1998 303(d), or Court Ordered 303(d) lists as a waterbody requiring a dissolved oxygen TMDL. It was listed on the year 2000 305(b) Assessment as a waterbody not meeting the established criterion for dissolved oxygen. The 2000 305(b) list was based on new assessment methodology. Marsh Bayou was placed on the list based on data collected in 1999. The assessment data for Marsh Bayou has been provided at the end of Appendix B. The data can also be obtained from the LDEQ public website.

Current dissolved oxygen criteria are shown in Table 2. TMDLs for the Calcasieu River Basin are scheduled for completion by December 31, 2001. Therefore, the completion of a TMDL for Marsh Bayou was considered a high priority.

Due to diurnal variations in dissolved oxygen, the time in which the assessment samples were taken was an important factor. Algae and macrophytes that produce dissolved oxygen in the water column in the presence of sunlight (photosynthesis) and utilize dissolved oxygen in the absence of sunlight (respiration) cause diurnal variations in dissolved oxygen. This process can cause the dissolved oxygen levels of the water to be depressed during the early morning hours and elevated during the evening hours. Either extreme is not representative of the stream. It is uncertain if the samples that were used to assess Marsh Bayou and place it on the 305(b) waterbody list were representative of the stream or the diurnal effects of algae and macrophytes.

2.4 Discharger Inventory

Based on available LA DEQ permit data, there were no facilities that were known to be discharging into Marsh Bayou or any of its tributaries.

3. Model Documentation

3.1 Program Description

The model used for this TMDL was LA-QUAL version 4.10, a steady-state one-dimensional water quality model. Its history dates back to the QUAL-I model developed by the Texas Water Development Board with Frank D. Masch & Associates in 1970 and 1971. William A. White wrote the original code.

In June, 1972, the United States Environmental Protection Agency awarded Water Resources Engineers, Inc. (now Camp Dresser & McKee) a contract to modify QUAL-I for application to the Chattahoochee-Flint River, the Upper Mississippi River, the Iowa-Cedar River, and the Santee River. The modified version of QUAL-I was known as QUAL-II.

Over the next three years, several versions of the model evolved in response to specific client needs. In March, 1976, the Southeast Michigan Council of Governments (SEMCOG) contracted with Water Resources Engineers, Inc. to make further modifications and to combine the best features of the existing versions of QUAL-II into a single model. That became known as the QUAL-II/SEMCOG version.

Between 1978 and 1984, Bruce L. Wiland with the Texas Department of Water Resources modified QUAL-II for application to the Houston Ship Channel estuarine system. Numerous modifications were made to enable modeling this very large and complex system including the addition of tidal dispersion, lower boundary conditions, nitrification inhibition, sensitivity analysis capability, branching tributaries, and various input/output changes. This model became known as QUAL-TX and was subsequently applied to streams though out the State of Texas.

In 1999, the Louisiana Department of Environmental Quality and Wiland Consulting, Inc. developed LA-QUAL based on QUAL-TX Version 3.4. The program was converted from a DOS-based program to a Windows-based program with a graphical interface and enhanced graphic output. Other program modifications specific to the needs of Louisiana and the Louisiana DEQ were also made at that time. Subsequent modifications have also been made as deemed necessary by LA DEQ. LA-QUAL is a user-oriented model and is intended to provide the basis for evaluating total maximum daily loads in the State of Louisiana.

3.2 Model Schematic and Description

The Marsh Bayou watershed was modeled according to the vector diagram on the following page. The modeled portion of Marsh Bayou extended from river kilometer 9.52 (RM 5.92) to river kilometer 0.0 (RM 0.0). Everything above RKM 9.52 was input as headwaters. River kilometer 0.0 is located at the confluence of Marsh Bayou and the Calcasieu River.

Little Marsh Bayou was the tributary with the greatest potential of being perennial. It has been indicated on the vector diagram as site 6. However, the survey was conducted during drought conditions. As a result, there were no tributaries flowing into Marsh Bayou. For reasons previously stated, Little Marsh Bayou and the remaining tributaries were not simulated as point source inputs in the calibration or projection models.

3.3 Calibration and Projection

The various spreadsheets that were used in conjunction with the modeling program may be found in the appendices in the order in which they were used and are described in the following sections.

The flow and water quality calibrations were based on headwater, tributary, and main stem data and samples obtained from the field survey conducted on June 13-15, 2000. These data have been provided in Appendix B.

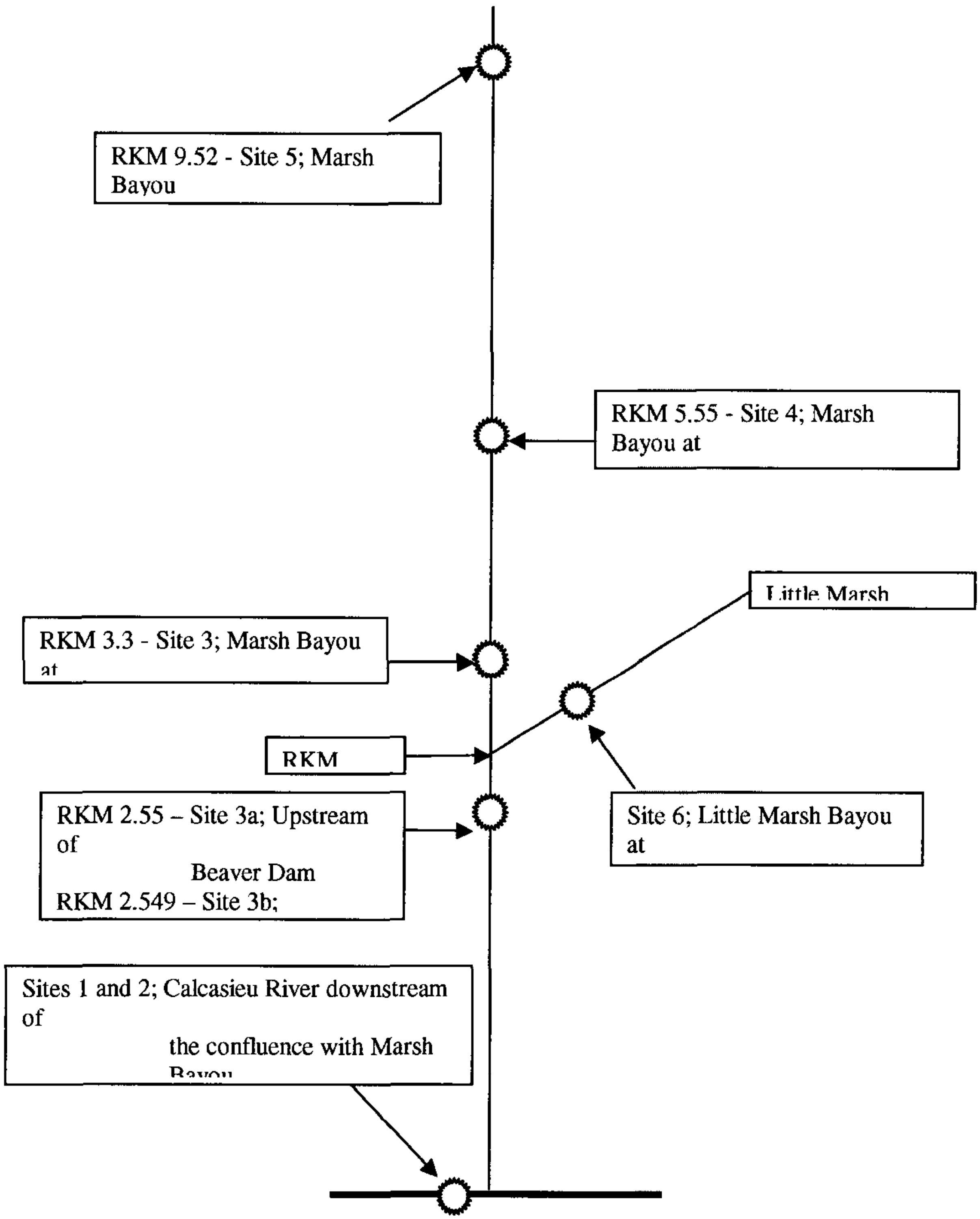

Figure 1. Vector Diagram of the Marsh Bayou Watershed

Each of the tributaries to Marsh Bayou had a velocity that was too low to be detected by LA DEQ equipment. Only one of the mainstem sites had a velocity that was great enough to be measured and provide a streamflow measurement. The remaining sites on Marsh Bayou did not have a visible velocity.

It should be noted that the flow measurements obtained at sites 1 and 2 were obtained by using a single drogue. Streamflow measurements based upon single drogue velocity measurements usually overestimate the streamflow. However, site 1 had a velocity that was too low to be measured. Site 2 was determined to be located on the Calcasieu River instead of Marsh Bayou as originally intended. Therefore, the flow for site 2 was not used in the modeling of Marsh Bayou.

Although none of the remaining sites on Marsh Bayou had flow that could be detected by LA DEQ equipment, the survey personel did indicate that flow was observed to be trickling through the beaver dam. The beaver dam was located during the survey. They also indicated that the water surface elevation upstream of the beaver dam was approximately one foot higher than the water surface elevation on the downstream side of the dam. This indicated that some streamflow existed in Marsh Bayou. In order to develop the calibrated model, it was assumed that the streamflow measured at site 5 proceeded through the length of the entire bayou.

According to the survey personnel, none of the tributaries had a measurable flow. Most of the tributaries are historically intermittent and were dry or not flowing at the time of the survey. Therefore, none of the tributaries were modeled as boundary loads because of this observation and previously stated reasons.

Insitu (field) and laboratory water quality data was obtained at sites 1 through 5. These values are summarized in Table 3. Insitu water quality data was also obtained at sites 3a and 3b (upstream and downstream of the beaver dam). Insitu water quality data included temperature, dissolved oxygen, conductivity, and pH.

BOD samples were obtained at sites 1 through 5, along with parameters for laboratory analysis (i.e. TSS, TDS, Color, Cl, SO_4, Na, hardness, NO_2-NO_3, total phosphorus, TKN, NH3-N, TOC, and total nitrogen.

Continuous monitors were deployed at sites 1, 2, 5, and 6 at mid-depth, not to exceed a depth of 1 meter. The sites were monitored every 15 minutes for dissolved oxygen, pH, temperature, specific conductivity, and percentage of the dissolved oxygen saturation concentration.

The water quality calibration produced results that simulated the $CBOD_U$, $NBOD_U$, and dissolved oxygen values obtained from the water quality data. This required the use of nonpoint source $CBOD_U$ and $NBOD_U$ loading and SOD loading.

Site #	Site Description	Field Depth M	Field Gage Height ft	Field pH	Field Temp. deg C	Field D.O. ppm	Field Conduc-tivity µmhos	Field Secchi Disc inches	Field Salinity ppt	TSS ppm
1	Calcasieu River below confluence of Marsh Bayou	1	NR	6.72	29.09	6.45	65	NR	NR	11
2	Marsh Bayou @ confluence of Calcasieu River	1	NR	6.65	29.11	6.8	66	NR	NR	19.5
3	@ Marsh Bayou Road	NR	NR	6.96	24.25	1.25	165	NR	NR	Not detected
4	@ Topsy Road	NR	NR	6.98	24.9	2.31	207	NR	NR	7
5	@ Welcome Road	NR	NR	6.94	25.2	1.77	242	NR	NR	4.8
	Marsh Bayou Site 1 Duplicate	1	NR	6.72	29.09	6.45	65	NR	NR	14
	Marsh Bayou Trip Blank	NR	NR	NR	NR	NR	NR	NR	NR	Not detected

Site #	Site Description	TDS ppm	Specific Conduc-tance µmhos/cm	Color PCU	Chloride (IC) ppm	Sulfate ppm	Sodium ppm	Hardness ppm	Nitrate+Nitrite-Nitrogen ppm	Total Phosphorus (TP) ppm
1	Calcasieu River below confluence of Marsh Bayou	78	65.34	45	6.4	3.3	7.5	14.7	0.04	0.11
2	Marsh Bayou @ confluence of Calcasieu River	77	68.1	44	6.4	2.8	14.2	15.4	0.03	0.12
3	@ Marsh Bayou Road	129	175.6	110	16.1	1.7	13.8	53.4	0.05	0.35
4	@ Topsy Road	154	219.8	110	22.8	4.7	17.9	60.9	0.14	0.25
5	@ Welcome Road	160	256.6	110	20.4	5.4	22.2	67.8	0.47	0.21
	Marsh Bayou Site 1 Duplicate	81	67.29	45	6.4	3.2	7	14.6	0.04	0.12
	Marsh Bayou Trip Blank	Not detected	Not detected	Not detected	Not detected	Not detected	<1.0	Not detected	0.02	Not detected

Site #	Site Description	TKN ppm	Ammonia-Nitrogen ppm	TOC ppm	Total Nitrogen (TN) ppm	TN/TP	Comments
1	Calcasieu River below confluence of Marsh Bayou	0.31	Not detected	6.1	0.35	3.18	Nitrogen limited
2	Marsh Bayou @ confluence of Calcasieu River	0.25	Not detected	4.6	0.28	2.33	Nitrogen limited
3	@ Marsh Bayou Road	1.26	0.25	21.5	1.31	3.74	Nitrogen limited
4	@ Topsy Road	2.7	0.62	18.2	2.84	11.36	Possible algae production
5	@ Welcome Road	3.39	1.66	17.2	3.86	18.38	Possible algae production
	Marsh Bayou Site 1 Duplicate	0.3	Not detected	4.4	0.34	2.83	
	Marsh Bayou Trip Blank	ND	Not detected	Not detected	NA	NA	

Table 3. Marsh Bayou Watershed Survey (6/13-15/00) Water Quality Data (Field and Laboratory)

The Louisiana Equation was used to simulate reaeration in reaches 1 – 9, 11, and 12. The equation of $K_2 = 2.3/D$ was used to simulate the reaeration in reaches 13 – 15. "D" is equal to the average depth for the reach.

Reach 10 was used to simulate the beaver dam. The reaeration was input manually in order to simulate the insitu dissolved oxygen values that were obtained immediately upstream and downstream of the dam. Additional loading was not applied in this reach.

Projections were adjusted to meet the dissolved oxygen criteria by reducing man-made (anthropogenic) nonpoint source and headwater loading to obtain load allocations. Spreadsheets were used to aid in the calculation of man-made headwater and nonpoint load reductions and the input values to be used in the projection models.

The reduction in nonpoint loads were estimated based upon average reference stream data for all reference streams available at the time the model was developed and the calibration model values. Total benthic loads were estimated by adding the $CBOD_U$, $NBOD_U$, and sediment oxygen demand in terms of g $O_2/m^2/day$. This was done for the calibration model values and the reference stream values. The reference stream total benthic values were assumed to be representative of the "natural background" total benthic values. For the purpose of projection modeling, the difference in the calibration total benthic values and the "natural background" total benthic values were considered to be representative of the man-made (anthropogenic) benthic loading. This load was reduced by a specified percentage. The reduced load was adjusted by the declared MOS. The resulting value was then redistributed as $CBOD_U$, $NBOD_U$, and sediment oxygen demand based. The redistributed values were based upon the ratios of the individual parameter loads to the total benthic load that were exhibited in the calibration model.

The reduction in man-made (anthropogenic) headwater loads were based upon reference stream data from Indian Bayou. The reference stream concentrations were assumed to be representative of the "natural background" concentrations. The man-made portion of the concentrations were estimated to be the difference between the calibration concentrations and the natural background concentrations. The man-made portion was then reduced by the stated percentage and adjusted by the stated MOS. The result was then added back to the "natural background" concentration.

The projection results are presented and discussed in terms of total nonpoint load reduction.

The summer season was the critical season and required a greater percentage reduction in the man-made nonpoint and headwater boundary loads in order to meet the stream criterion. LA DEQ has determined that nonpoint loading accumulates throughout the year. Therefore the same reduction percentage of man-made nonpoint and headwater boundary loads was applied when projecting to critical conditions for the winter season.

In actuality, the winter projection model required a smaller reduction percentage in the man-made nonpoint and headwater boundary loads to meet the winter D.O. criterion.

"No Load" models were developed to simulate summer and winter scenarios void of all man-made loads. They were developed in order to demonstrate the likelihood of the bayou to meet the dissolved oxygen criteria under "natural conditions".

3.3.1 Flow Calibration

The vector diagram is presented in Figure 1 and Appendix A. The spreadsheets in items 2 through 4 are presented in Appendix C in the order in which they are explained.

1. Vector Diagram

   The vector diagram shows the main stem of Marsh Bayou. The length of the bayou was digitally measured in order to set up the model reaches and elements.

2. Reach and Element Layout for the Marsh Bayou LA-QUAL Model

   This spreadsheet lists the descriptions and details of every reach. The details include river kilometers, reach descriptions, reach length, element sizes, and the number of elements in each reach.

3. Marsh Bayou Flow Calibration
   The spreadsheet was used to perform a preliminary flow calibration for the model. A characteristic flow was calculated for each reach.

4. Marsh Bayou Stream Geometry

   The various cross-sectional data used for the hydrologic calibration of the model is listed in the spreadsheet. Cross-sections were grouped based upon location within individual reaches. In cases where there were multiple values, the spreadsheet calculates the average for the reach. Otherwise, the single value was used.

5. Marsh Bayou Reaches and Elements

   The spreadsheet lists the model reaches that were selected, and details the layout of elements. It was developed for presentation purposes. It shows the coefficients, exponents, and constants used in the model to estimate the average reach widths and depths.

   The spreadsheet referenced some values from other spreadsheets. The columns containing widths and depths were filled in based upon the average values from item 4. The characteristic flow was obtained from item 3. The exponents selected to use in the modified Leopold equations were based upon values suggested Appendix B of the USGS report by Leopold and Maddock titled "The Hydraulic Geometry of Stream Channels and Some Physiographic Implications". Reach 10 was used to simulate the beaver dam. Therefore the exponents for reaches 9 and 10 were modified to simulate the effects of the beaver dam. The width exponents for the lower reaches were also modified. (Leopold and Maddock, 1953).

An assumption was made that the cross-sectional geometry for reaches 5 through 6 and 9 through 10 did not vary greatly with flow as long as the flow near low flow conditions. The remaining reaches, primarily reaches 1 - 4, appeared to vary with flow to a small extent. This was primarily due to the effects of the beaver dam and the extremely low water surface slopes of Marsh Bayou and the Calcasieu River. This assumption was based on the fact that the upper reaches had small, defined channels with measurable velocities at low flow conditions, while the lower reaches had larger channels with flows that were not measurable with LA DEQ survey equipment due to low velocities. The lower reaches also stretched out into forests and swamps along the main channel.

Therefore, the width and depth constants were set at to a value slightly less than the average width and depth values for reaches 1 through 4, 7, and 8. The coefficients were determined by calibration. In reaches 5-6 and 9-15, the width and depth constants were assumed to be equivalent to the average width and depth values obtained during the survey.

At this point, the input file was created and the model was run. The model was calibrated with the one streamflow measurement that could be made during the survey. The model was adjusted so that the widths and depths matched the values that were obtained in the field. The model velocities, although extremely low, appeared to be representative of the values that were observed in the field. This is not the ideal situation. However, the model output confirmed the preliminary flow calibration and plots of flow, velocity, width, and depth versus river kilometer were printed. The field measurements were overlaid on their respective plots. They are presented in Appendix C.

Ion balances on the water quality data showed that the conservative water quality values obtained at site 2 were questionable.

Mass flow balances for chlorides and sulfates were inconclusive because of the lack of available flow data and the fact that the flow data that was obtained was extremely low. The chloride and sulfate values showed some slight fluctuations from sight to sight. This was probably due to the extremely low streamflow. The chloride and sulfate values appeared to decrease near the lower reaches of Marsh Bayou. This was probably due to the influence of Calcasieu River. Therefore, the chloride and sulfate values were not considered to be appropriate for checking the flow balance.

The water quality data showed that the beaver dam was acting as a barrier. The water quality values in the reaches of Marsh Bayou downstream of the beaver dam appeared to be more representative of the values observed in the Calcasieu River than the values observed in Marsh Bayou upstream of the beaver dam.

3.3.2 Water quality calibration

The basic premise that governed water quality calibration and projections of Marsh Bayou was that the dominant oxygen demanding load in the watershed at low flow is from an accumulation of benthic material washed into the streams during periods of higher flow. This load was exerted as sediment oxygen demand (SOD) and as resuspension of material from the bottom. The LA-QUAL model can accommodate both a baseline SOD and a steady state SOD from the settling of CBOD and NBOD. However, it does not have a mechanism for simulating the decay or loss of SOD.

Much of the Calcasieu River Basin consists of sandy bottom streams. In the remaining streams, it is suspected that the accumulation of benthic material is considerable and that the settling of BOD at low flow as simulated by the model does not significantly alter the sediment oxygen demand. SOD was therefore not tied to settling in the execution of this model.

Except where indicated, the following spreadsheets, reports, and plots are presented in Appendix D in the order in which they are explained.

1. $CBOD_U$, $NBOD_U$, and Dissolved Oxygen Loads, Marsh Bayou Watershed Calibration Model

   The headwater boundary loads and nonpoint loads are listed by reach.

2. BOD_U plots

   All BOD_U plots from the watershed survey are presented in Appendix B, along with the survey data.

3. Model Output File

   The model output file is presented. It includes all input values.

4. Model Output Plots

   The model output plots are presented. They include plots for flow, width, depth, velocity, chloride concentrations, sulfate concentrations, dissolved oxygen concentrations, $CBOD_U$ concentrations, $NBOD_U$ concentrations, sediment oxygen demand (SOD), reaeration, and dispersion. In addition, the dissolved oxygen plot can be seen in Figure 2.

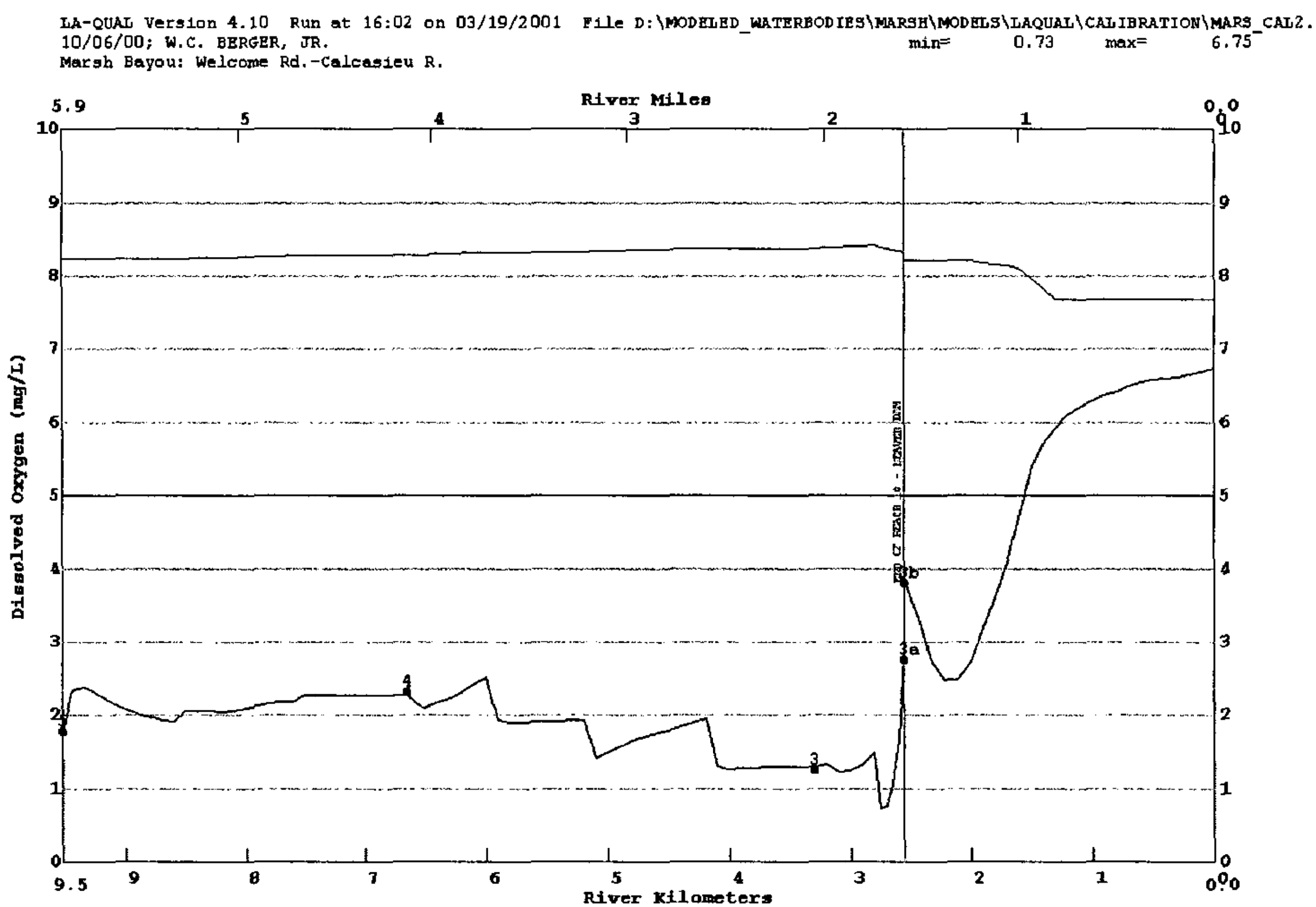

Figure 2. Dissolved Oxygen vs. River Kilometer Plot for the Marsh Bayou Calibration Model

5. Marsh Bayou Water Quality Calibration Model Input Description

These spreadsheets present all the data that were used in the calibration model. They also provide the source of the data or justifications for their usage. Some of the data included are:

a. Advective dispersion

LA-QUAL uses the equation $D_L = 18.53nuh^{5/6}$ for advective dispersion, where n is Manning's "n", u is the velocity in m/s, and h is the depth in meters.

b. Tidal Dispersion

The tidal dispersion values for Marsh Bayou were estimated based upon the fact that the beaver dam appeared to be acting as a barrier. The water quality in the reaches of Marsh Bayou downstream of the beaver dam were greatly affected by the water quality in the Calcasieu River. However, the beaver dam prohibited the water quality in the Calcasieu River from influencing the water quality in Marsh Bayou upstream of the beaver dam. The tidal dispersion values were estimated accordingly.

c. Initial Conditions

The initial condition values were obtained from the survey data. These values are used as a starting point during the iterative solution technique of LAQUAL

d. Reaeration Rates

The Louisiana Reaeration Equation was used in reaches 1 through 9, 11 and 12 of the watershed model. The Louisiana Reaeration Equation is applicable to streams with depths between 0.3 feet and 3.0 feet (0.091 meters and 0.914 meters) and velocities ranging from 0.02 to 0.8 feet/sec (0.0061 to 0.244 m/sec).

Reach 10 was used to simulate the beaver dam and the reaeration value was input manually so that the simulated dissolved oxygen levels calibrated to field measurements taken at the immediate upstream and downstream sides of the beaver dam.

The reaeration equation used in reaches 13 through 15 was set to 2.3 divided by the depth. These reaches were deeper with lower velocities. This combination of conditions reduces the reaeration potential for the reaches. The reaeration equation ($K_2 = 2.3/\text{depth}$) was based upon a policy for the minimum reaeration value that can be used. This policy was the result of a joint agreement by LA DEQ and the USA EPA, Region 6.

e. Decay Rates, Settling Rates, and SOD Rates

The initial decay and settling rates were based upon values in the Louisiana TMDL Technical Procedures Manual, 2000. These values were then modified during the model calibration process using Best Professional Judgement (BPJ).

f. Chlorophyll a

Algal production was not simulated in the calibration or projection models. However the effects of algal production on dissolved oxygen could be simulated if there was a significant amount of chlorophyll a

Field measurement values for chlorophyll a were obtained at sites 1, 2, and 4. These values were not considered to be significant, but they were included in the model nevertheless. Sites 1 and 2 were on the Calcasieu River. The data from site 2 was used for the Lower Boundary Condition. The chlorophyll a value from site 4 was used throughout the modeled reaches of Marsh Bayou.

g. Incremental Loads (with flow)

Incremental flows and loads were not required to calibrate the Marsh Bayou Watershed model.

h. Nonpoint Loads (without flow)

Nonpoint $CBOD_U$ and $NBOD_U$ were added to calibrate the model. This loading is assumed to represent the combined impact of resuspension of benthic material and other loading entering the water column without an associated flow. This modeling parameter does not include sediment oxygen demand.

i. Lower boundary conditions

Lower boundary condition values for the calibration model were taken from site 1 of the watershed survey conducted on June 13 - 15, 2000. This site was located in the Calcasieu River downstream of the confluence with Marsh Bayou.

3.3.3 Sensitivity Analysis

Sensitivity analysis was performed for the calibration model. A spreadsheet presenting the results of the analysis is provided in Appendix E.

The model was most dependent upon depth and temperature related parameters. Five of the top ten parameters affecting the minimum dissolved oxygen value were related to depth. They include reaeration, benthal, depth, velocity, and BOD settling. Four of the top ten parameters were related to temperature. They include temperature, reaeration, aerobic BOD decay, and benthal. One parameter, baseflow, was related to flow and depth. The baseflow was not affected by the depth as many of the other parameters were. Instead, the baseflow affected the depth.

3.3.4 Water quality projections

Projections were developed for the summer critical (May-October) and winter critical (November-April) seasons. Only parameters that are used to define the critical conditions were modified from the calibration model values. They include the headwater flow, the headwater temperature, the headwater dissolved oxygen concentration, initial temperature conditions , initial dissolved oxygen concentration conditions, and the nonpoint loads. Projection models were also created to simulate summer and winter critical conditions without man-made loading.

Spreadsheets, reports, and plots developed to estimate the nonpoint load input data required for the projection models are presented in Appendix F. They are presented in the order in which they are explained in the following text.

1. Reference Stream Nonpoint Loading

   It is the purpose of the projections to produce load allocations (LAs) and percent reductions of man-made loading for nonpoint sources. In order to differentiate man-made nonpoint loading from natural background nonpoint loading, some measure of natural background nonpoint loading is needed. Toward that end, the available calculated loading from the reference stream program is listed. From this spreadsheet, the total natural benthic load was estimated to be 2.0 g O_2/m^2/day. This total natural benthic load was considered to be representative of the natural background nonpoint loading. The term benthic loading is used here to reference the sum of the sediment oxygen demand and the nonpoint loading in units of g O_2/m^2/day. (Smythe, 1999).

2. Calibration Model Non-Point Load Equivalent Calculations

   Also needed for the calculation of percent reduction of man-made nonpoint loading is the calibration total benthic loading. The calibration total benthic loading was calculated for each reach in this spreadsheet.

3. Summer Projection, Nonpoint Benthic Load Input and TMDL Calculations

   This spreadsheet estimated the nonpoint and SOD loads used in the projection model, based on the calibration total benthic loading values, and the total natural background benthic loading values, and selected percentage reductions of the man-made and natural background nonpoint and SOD loading. It also calculated the loads that were used in the TMDL calculations. Individual versions of the spreadsheet have been provided for the two load reduction scenarios presented in this report.

4. Winter Projection, Nonpoint Benthic Load Input and TMDL Calculations

   The explanation applied to the summer projection in item 3 may be applied to the winter projection.

5. Summer TMDL Calculations and Projection Model Calculations for Headwater/ Tributary Loads

   This spreadsheet estimated projection concentrations for the headwater boundary site. The calculations were performed in terms of the $CBOD_U$ and $NBOD_U$ loads. They were based upon the calibration concentrations, projection flows, reference stream data, and percent reduction values for the man-made and natural background portions of the concentration. It was assumed that the headwater boundary site was caused by the nonpoint loading that existed upstream of the site during periods of higher streamflow. The spreadsheet also calculated the headwater loads that were used in the TMDL calculations. Individual versions of the spreadsheet have been provided for the two load reduction scenarios presented in this report.

6. Winter TMDL Calculations and Projection Model Calculations for Headwater/ Tributary Loads

   The explanation applied to the summer projection in item 5 may be applied to the winter projection.

The following spreadsheets, reports, and plots present the input data justifications and the projection results for the summer critical conditions. They are presented in Appendix F1 in the order in which they are explained.

1. Summer Projection Model Output and Plots - 67 % Reduction of the Total Nonpoint Loads (100% Reduction of the Estimated Man-Made Loads and 20% Reduction of the Estimated Natural Background Loads)

   The output file for this summer projection model is provided. It includes a summary of the input data. Plots produced by the model are also provided. The plot for dissolved oxygen is also presented in Figure 3. The Lower Boundary Condition was utilized because of the effects of the Calcasieu River.

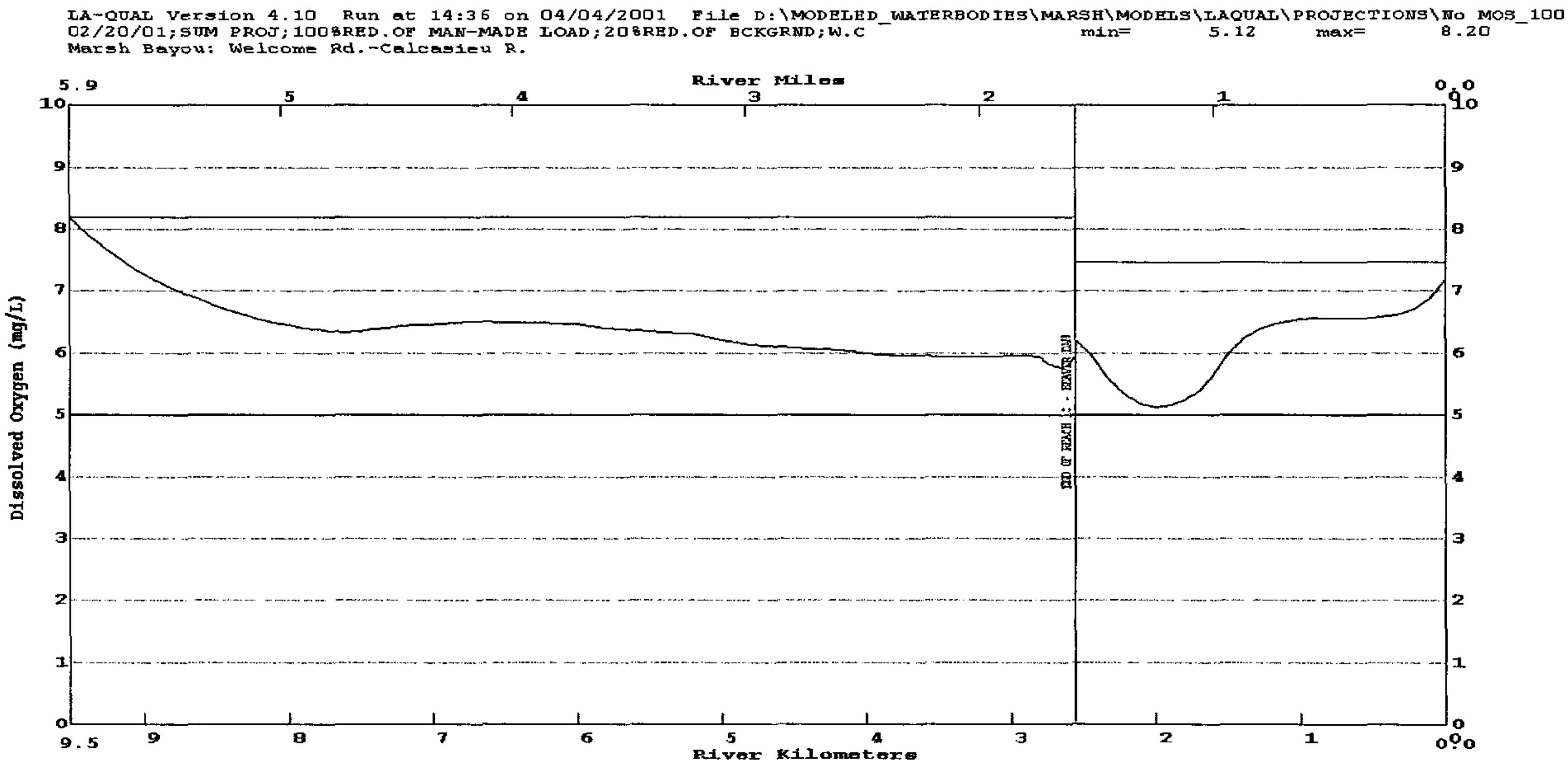

Figure 3. Dissolved Oxygen vs. River Kilometer for the Summer Projection Model - 67% Reduction of the Total Nonpoint Loads (Man-Made Loads Reduced 100%, Natural Background Loads Reduced 20%)

2. Marsh Bayou Water Quality Summer Projection Model Input Description - 67% Reduction of the Total Nonpoint Loads (100% Reduction of the Estimated Man-Made Loads and 20% Reduction of the Estimated Natural Background Loads)

   The input data and data sources or justifications are provided in spreadsheet format.

3. Summer Projection Model Output and Plots - 37% Reduction of the Total Nonpoint Loads (70% Reduction of the Estimated Man-Made Loads)

   The output file for this summer projection model is provided. A summary of the input data is included. Plots produced by the model are also provided. The Lower Boundary Condition was utilized because of the affects of the Calcasieu River downstream of the beaver dam. The plot for dissolved oxygen is presented in Figure 4.

4. Marsh Bayou Water Quality Summer Projection Model Input Description - 37% Reduction of the Total Nonpoint Loads (70% Reduction of the Estimated Man-Made Loads)

   The input data and data sources or justifications are provided in spreadsheet format.

5. Plots for Additional Summer Projections

   Additional summer projections were made to demonstrate the variation in the dissolved oxygen projections with the reductions in nonpoint loading.

The following spreadsheets, reports, and graphs are presented in Appendix F2. They present the input data justifications and projection results for the winter critical conditions.

1. Winter Projection Model Output and Plots - 67% Reduction of the Total Nonpoint Loads (100% Reduction of the Estimated Man-Made Loads and 20% Reduction of the Estimated Natural Background Loads)

   The output file for this winter projection model is provided. It includes a summary of the input data. Plots produced by the model are also provided. The dissolved oxygen plot is presented in Figure 5 for convenience. Once again the lower boundary condition card was utilized for the winter model because of the effects of the Calcasieu River downstream of the beaver dam.

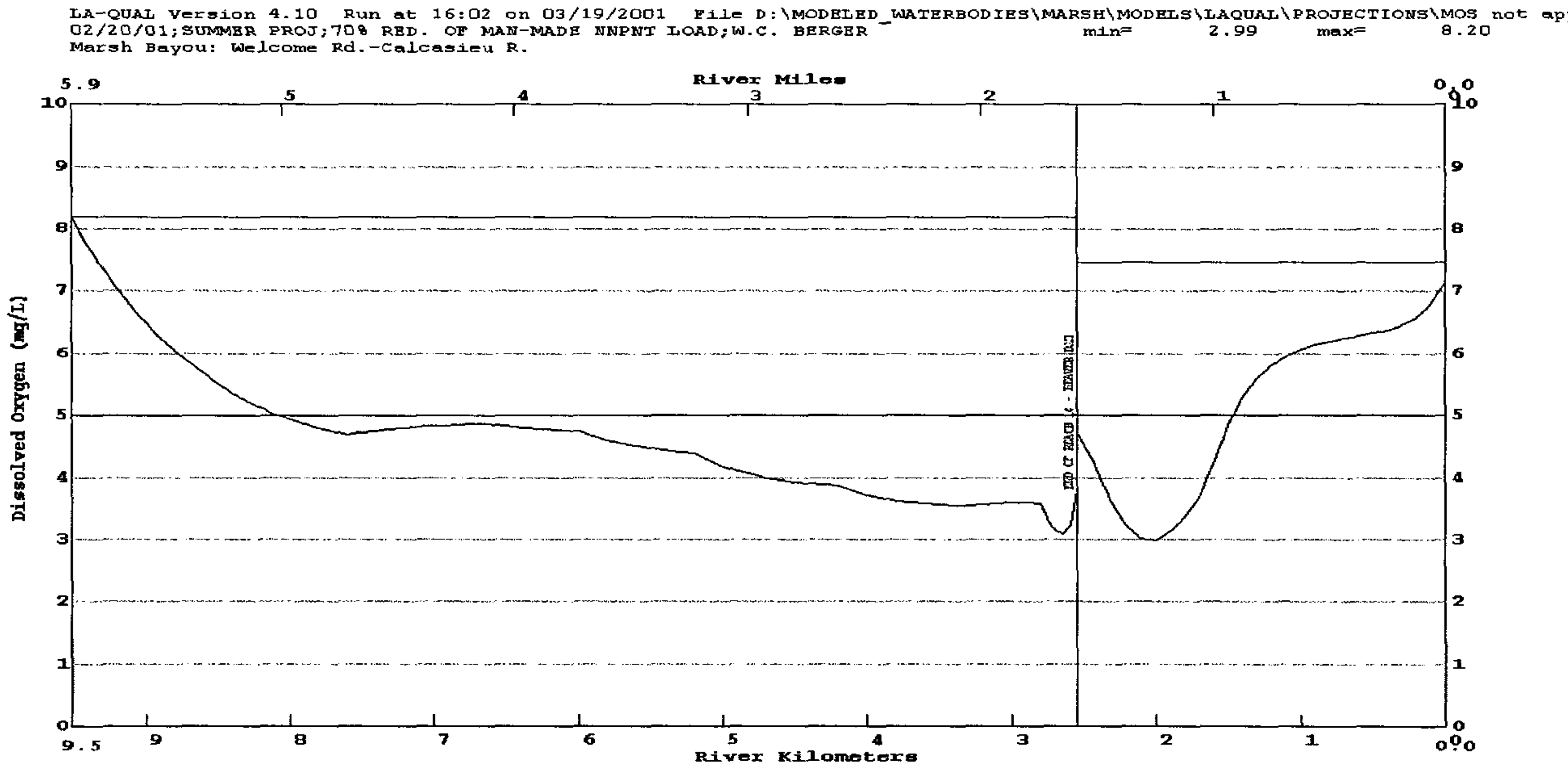

Figure 4. Dissolved Oxygen vs. River Kilometer Plot for the Summer Projection Model - 37% Reduction of the Total Nonpoint Loads (Man-Made Loads Reduced 70%)

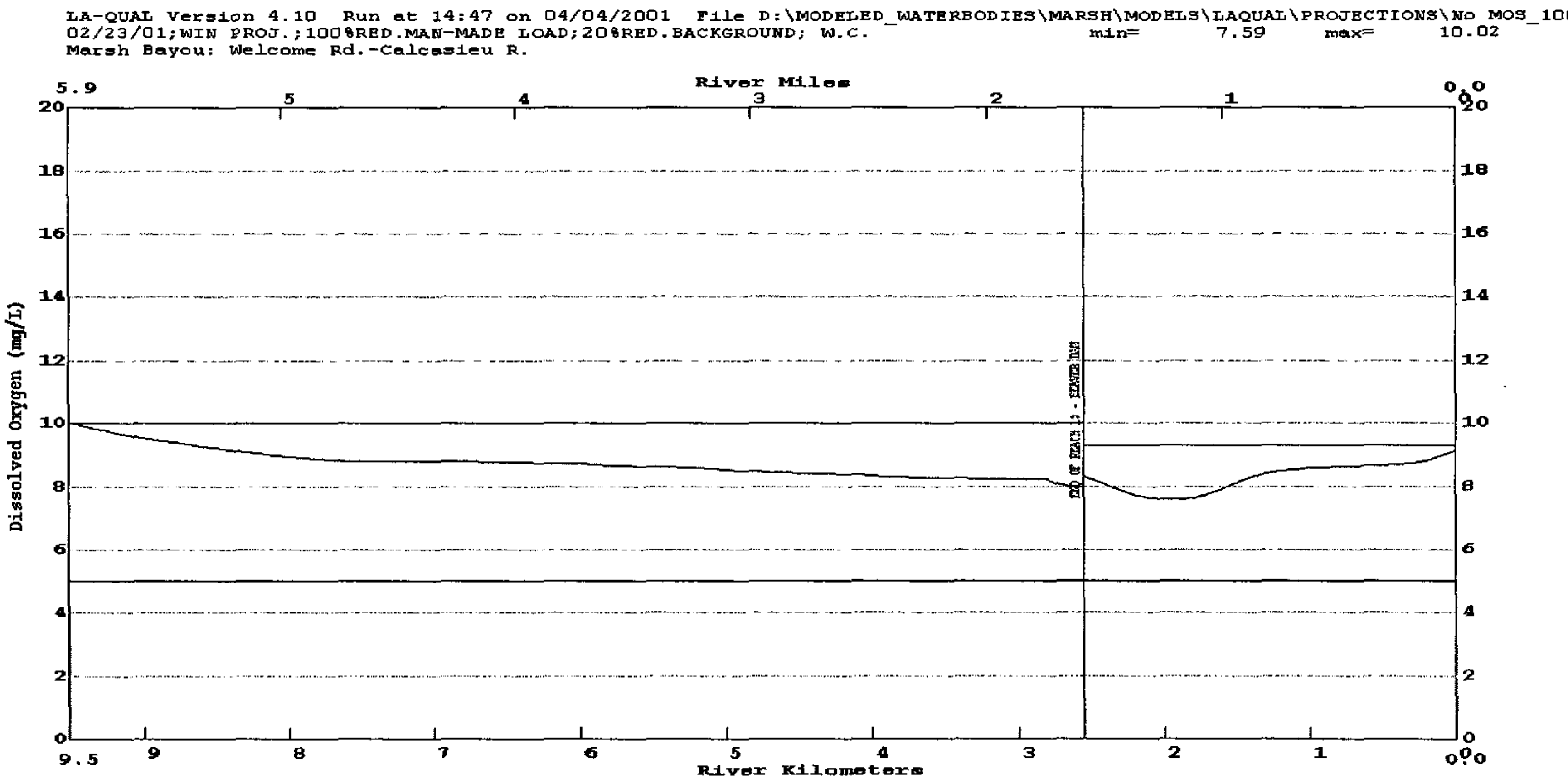

Figure 5. Dissolved Oxygen vs. River Kilometer for the Winter Projection Model - 67% Reduction of the Total Nonpoint Loads (Man-Made Loads Reduced 100%, Natural Background Loads Reduced 20%)

Assumptions were made when determining the percent reductions of the man-made nonpoint and headwater boundary loads. LA DEQ has documented that the incremental loading occurs throughout the year, but has its greatest effect during summer critical conditions in the form of benthic loads (SOD) and nonpoint loads (resuspension). In this case, the term benthic is used to represent the SOD as it is in the model input. Recognizing this fact, and the fact that LA DEQ cannot implement percentage load reductions on a seasonal basis, the percentage load reductions for the winter critical conditions were set equivalent to the percentage load reductions that protected the dissolved oxygen criteria for the summer critical conditions.

2. Marsh Bayou Water Quality Winter Projection Model Input Description 67% Reduction of the Total Nonpoint Load (100% Reduction of the Estimated Man-Made Loads and 20% Reduction of the Estimated Natural Background Loads)

   The input data and data sources or justifications are provided in spreadsheet format.

3. Winter Projection Model Output and Plots - 37% Reduction of the Total Nonpoint Loads (70% Reduction of the Estimated Man-Made Loads)

   The output file for this winter projection model is provided. For reasons previously explained, the percentage reduction values used in the summer model were also used in the winter model. Included is a summary of the input data. Plots produced by the model are also provided. The lower boundary condition card was utilized. The dissolved oxygen plot is presented in Figure 6.

4. Marsh Bayou Water Quality Winter Projection Model Input Description - 37% Reduction of the Total Nonpoint Loads (70% Reduction of the Estimated Man-Made Loads)

   The input data and data sources or justifications are provided in spreadsheet format.

4. TMDLs and Allocations

Land use in the Marsh Bayou watershed is fairly homogeneous, comprised of principally agriculture and forestry. Therefore, oxygen-demanding TMDLs have been calculated for the entire watershed for both the summer and winter critical conditions. The summer TMDL was higher than the winter TMDL.

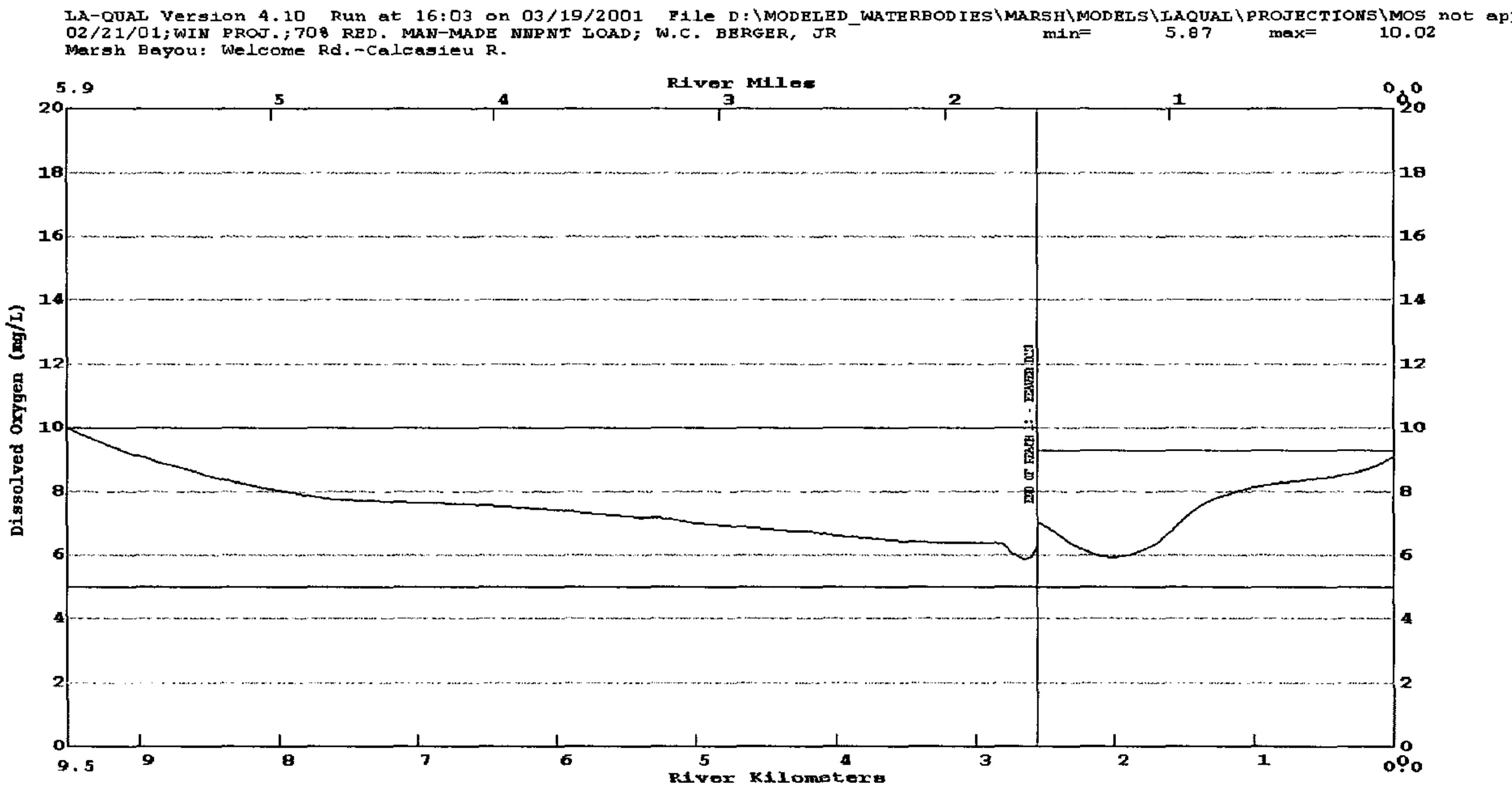

Figure 6. Dissolved Oxygen vs. River Kilometer for the Winter Projection Model - 37% Reduction of the Total Nonpoint Loads (Man-Made Loads Reduced 70%)

The modeling results demonstrated that the total nonpoint loads must be reduced by approximately 67 percent in order to meet the existing stream criterion for dissolved oxygen (5.0 mg/L) for both the summer critical conditions. Results of this type indicate the waterbody is naturally dystrophic and inappropriate dissolved oxygen criterion has been established for Marsh Bayou.

Any statement regarding "man-made" or "natural background" loading is based upon the use of reference stream data (or other applicable data) to represent "natural background" loading. Since this bayou appeared to be relatively unimpacted, a reduction in the total nonpoint loading is probably more appropriate.

Additional modeling results indicated that a 37 percent reduction of the total nonpoint loading would produce an instream dissolved oxygen concentration of 2.99 mg/L for the summer critical conditions. According to previous statements made by Region 6 of EPA, this can be accepted as meeting a D.O. criterion of 3.0 mg/L. An additional winter critical projection indicated that the existing stream criterion would be met with a 37percent reduction of the total nonpoint loading. As a result, an alternative combination of D.O. criteria are presented. The alternative D.O. criteria are 3.0 mg/L (summer critical conditions) and 5.0 mg/L (winter critical conditions).

In addition, summer and winter TMDLs and LAs have been calculated based upon the existing stream criterion. Alternative TMDLs and LAs have also been calculated based upon the alternative criterion.

This TMDL has been developed in accordance with the State of Louisiana's antidegradation policy (LAC 33:IX.1109).

Equivalent percent reduction values were applied in the winter projection models because the loading occurs annually, although the greatest impact is felt during the summer.

The primary difference between the summer and winter TMDLs was the benthic load (SOD and nonpoint loads). The cause of the difference was the sediment oxygen demand (SOD). When considering SOD, the percent reduction for both the summer and winter models were based upon the same calibration SOD value at 20 degrees Celsius. After this value was reduced, it was put into the summer and winter projections, which were at different stream temperatures. The projection models then corrected the SOD values for stream temperature. The temperature-corrected SODs were then used in the TMDL calculations, producing a higher summer TMDL value.

The headwater boundary load was slightly higher in the winter projection due to higher flows. However, it is relatively insignificant when compared to the differences in the SOD loads.

The following text contains a brief outline of the projection and TMDL calculations. It will help explain some of the calculations in the Appendices. The TMDLs and allocations are summarized in Tables 4 and 5.

1. The natural background total benthic loading was estimated from reference stream nonpoint $NBOD_U$, nonpoint $CBOD_U$, and SOD (at 20°C) data. The average total benthic load value of all available reference streams was used. The units were gm $O_2/m^2 \bullet$day.

2. The calibration man-made (anthropogenic) benthic loading was determined for each reach as follows:

   - Calibration non-point $CBOD_U$ and $NBOD_U$ (resuspension), and SOD (at 20°C) were summed for each reach as gm O_2/m^2d to get the total calibration benthic loading.
   - The natural background benthic loading was subtracted from the total calibration benthic loading to get the total man-made calibration benthic loading (at 20°C).

3. For each reach, the man-made portions of the non-point CBOD and NBOD (resuspension), and SOD were adjusted by the stated percentage of reduction and a margin of safety to produce a projected in-stream dissolved oxygen that was in compliance with the stream criterion. The percent reduction man-made nonpoint benthic loading and the modified man-made benthic loads were calculated as follows:

   - The total estimated man-made projection benthic loading was multiplied by a percentage of reduction.
   - A margin of safety was applied to the reduced man-made portion of the benthic loading.
   - The result was then added back to the natural background benthic loading to calculate an adjusted total benthic loading that would meet the in-stream water quality criterion.
   - Once the man-made portion of the benthic load was reduced by 100 percent, the value used to represent the natural background benthic load was reduced by an additional percentage
   - The percent reduction of the total nonpoint load was manually calculated based upon the Total Calibration Benthic Loads (TCBL) and the Reduced TCBL Adjusted for the MOS that was used in the projection models. These values are found in the "Summer Projection, Nonpoint Benthic Load Input and TMDL Calculations" spreadsheets in Appendix F. The Total Calibration Benthic Load was summed for all reaches. Reduced TCBL Adjusted for MOS was summed for all reaches. The difference of

the respective sums was then divided by the TCBL and multiplied by 100 to calculate the percent reduction of the total nonpoint load.

4. The total projection benthic loading for each reach was calculated as follows:

   - The adjusted total benthic loading was partitioned out as $CBOD_U$, $NBOD_U$, and SOD by the same ratios that were observed in the calibration data.
   - The projection SOD at 20°C was adjusted to stream critical temperature by the model.
   - The projection CBOD, NBOD, and SOD were summed to get the total benthic loading at stream temperature critical in lb/d for each reach. The margin of safety loads were also calculated.

5. Boundary (Headwater) Concentrations were calculated as follows:

   - Natural background concentrations for $CBOD_U$ and $NBOD_U$ were estimated from the Indian Bayou reference stream data.
   - Natural background loads were estimated for $CBOD_U$ and $NBOD_U$ using the natural background concentrations and the projections flows.
   - Calibration loads were estimated for $CBOD_U$ and $NBOD_U$ using the calibration concentrations and projection flows.
   - The man-made portions of the loads were estimated by subtracting the calibration loads from the natural background loads
   - The estimated man-made loads were reduced by a stated percentage.
   - The margin of safety was applied to the adjusted man-made loads.
   - The natural background loads were then added back to the resulting loads.
   - The projection concentrations for $CBOD_U$ and $NBOD_U$ were estimated by dividing the resulting loads by the projection flows and a conversion factor.
   - Once the man-made loading was reduced by 100 percent, the value used to represent the natural background concentration was reduced by an additional percentage.

6. Projection runs were made with:

   - The adjusted nonpoint CBODU, NBODU, and SOD (at critical temperature) loads
   - Boundary (headwater and tributary) flows at an estimated seasonal 7Q10 value or 0.1(summer)/1.0(winter) cfs, whichever was greater.
   - The adjusted boundary (headwater and tributary) concentrations for $CBOD_U$ and $NBOD_U$

- The dissolved oxygen concentrations were set at 90 percent of the dissolved oxygen saturation concentration at the 90th percentile temperature.

7. The total stream loading capacity at stream critical temperature was calculated as the sum of the:

- Boundary (headwater) $CBOD_U$ and $NBOD_U$ loads in lb/d.
- Projection benthic loads for all reaches of the stream in lb/d.
- The margins of safety for the boundary and benthic loads.

The TMDL for the Marsh Bayou River watershed was set equal to the total stream loading capacity. Tables 4 and 5 present the load allocations, margins of safety, and the TMDLs for the summer and winter critical conditions for the existing and the alternative criteria. In some cases the sum of the LAs and MOSs may differ from the TMDL by a value of one in units of lbs/day. This is simply due to round off error in the spreadsheets used to calculate the values.

The following spreadsheets are in Appendix G.

Summer and Winter TMDL Calculations
Summer and winter TMDLs have been calculated for the entire watershed. The spreadsheets sum loading from headwaters, nonpoint loading (not associated with flow), and sediment oxygen demand (SOD).

Table 4. TMDLs for the Existing Dissolved Oxygen Criterion
(5.0 mg/L-summer and winter critical condtions)

	Summer season (May – Oct.)		Winter season (Nov.–April)	
Loading Description	BOD Load lbs./day	% of TMDL	BOD Load lbs./day	% of TMDL
Total point source allocations (WLA)	0	0	0	0
Point source margin of safety (MOS)	0	0	0	0
Headwater/Tributary Loads	95	12	110	18
Benthic Loads (based upon nonpoint and SOD loads used in the projections)	714	88	490	82
Incremental Loads	0	0	0	0
Total maximum daily load (TMDL)	809	100	600	100
Nonpoint source margin of safety (MOS for benthic and boundary loads)	0	0	0	0
Natural Nonpoint Loads	809	100	600	100
Man-Made Nonpoint Loads	0	0	0	0

Table 5. TMDLs for the Alternative D.O. Criteria
(3.0 mg/L-summer critical conditions, 5.0 mg/L-winter critical conditions)

	Summer season (May – Oct.)		Winter season (Nov.–April)	
Loading Description	BOD Load lbs./day	% of TMDL	BOD Load lbs./day	% of TMDL
Total point source allocations (WLA)	0	0	0	0
Point source margin of safety (MOS)	0	0	0	0
Headwater/Tributary Loads	168	12	192	18
Benthic Loads (based upon nonpoint and SOD loads used in the projections)	1182	82	825	76
Incremental Loads	0	0	0	0
Total maximum daily load (TMDL)	1435	100	1085	100
Nonpoint source margin of safety (MOS for benthic and boundary loads)	86	6	68	6
Natural Nonpoint Loads	1004	70	747	69
Man-Made Nonpoint Loads	345	24	269	25

3. Conclusion

LDEQ will work with other agencies such as local Soil Conservation Districts to implement agricultural best management practices in the watershed through the 319 programs. LDEQ will also continue to monitor the waters to determine whether standards are being attained.

In accordance with Section 106 of the federal Clean Water Act and under the authority of the Louisiana Environmental Quality Act, the LDEQ has established a comprehensive program for monitoring the quality of the state's surface waters. The LDEQ Surveillance Section collects surface water samples at various locations, utilizing appropriate sampling methods and procedures for ensuring the quality of the data collected. The objectives of the surface water monitoring program are to determine the quality of the state's surface waters, to develop a long-term data base for water quality trend analysis, and to monitor the effectiveness of pollution controls. The data obtained through the surface water monitoring program is used to develop the state's biennial 305(b) report (*Water Quality Inventory*) and the 303(d) list of impaired waters. This information is also utilized in establishing priorities for the LDEQ nonpoint source program.

The LDEQ has implemented a watershed approach to surface water quality monitoring. Through this approach, the entire state is sampled over a five-year cycle with two targeted basins sampled each year. Long-term trend monitoring sites at various locations on the larger rivers and Lake Pontchartrain are sampled throughout the five-year cycle. Sampling is conducted on a monthly basis or more frequently if necessary to yield at least 12 samples per site each year. Sampling sites are located where they are considered to be representative of the waterbody. Under the current monitoring schedule, targeted basins follow the TMDL priorities. In this manner, the first TMDLs will have been implemented by the time the first priority basins will be monitored again in the second five-year cycle. This will allow the LDEQ to determine whether there has been any improvement in water quality following implementation of the TMDLs. As the monitoring results are evaluated at the end of each year, waterbodies may be added to or removed from the 303(d) list. The sampling schedule for the first five-year cycle is shown below.

1998 - Mermentau and Vermilion-Teche River Basins
1999 - Calcasieu and Ouachita River Basins
2000 - Barataria and Terrebonne Basins
2001 - Lake Pontchartrain Basin and Pearl River Basin
2002 - Red and Sabine River Basins

(Atchafalaya and Mississippi Rivers will be sampled continuously.)
Calcasieu and Ouachita Basins will be sampled again in 2004.

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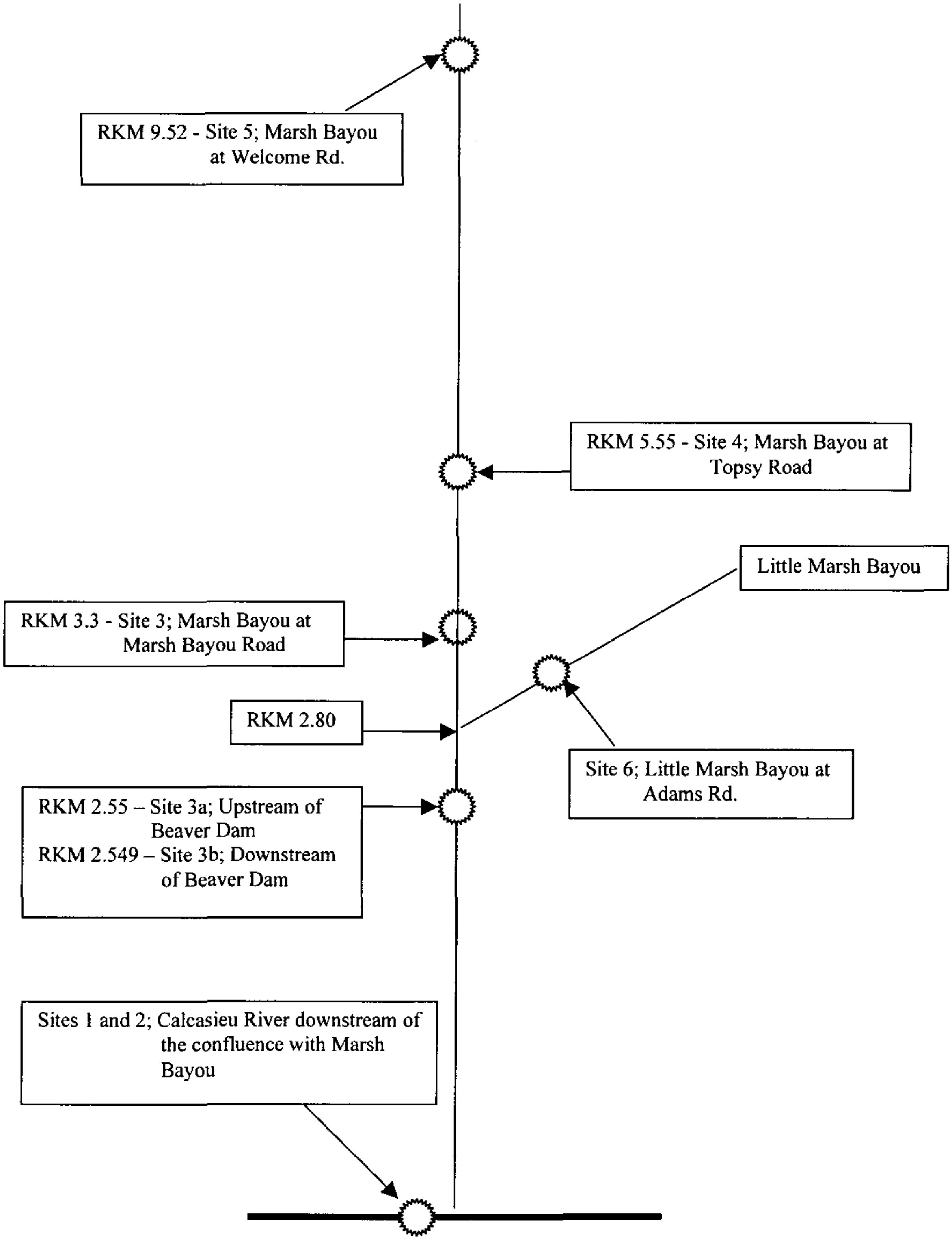
APPENDIX A – MODEL SCHEMATIC

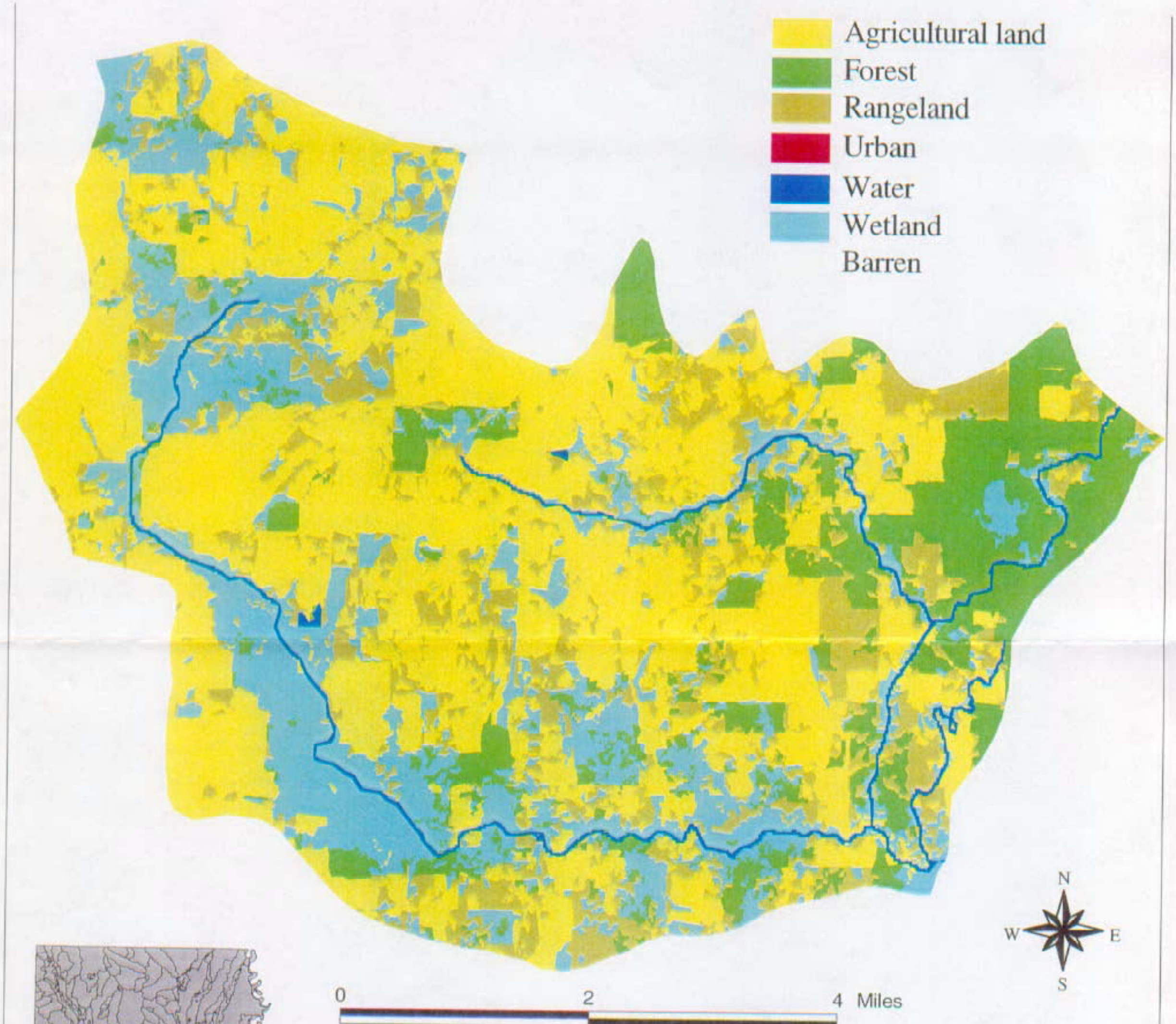
Marsh Bayou Vector Diagram
Marsh Bayou Landuse Map
Marsh Bayou Vicinity Map
Marsh Bayou Watershed Survey (6/13-15/00) Site Descriptions for Discharge, Water Quality, and Cross-Section

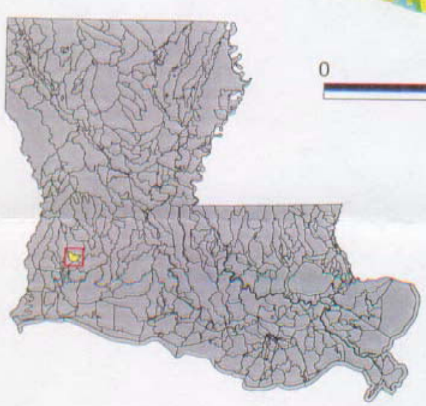


Vector Diagram of the Marsh Bayou Watershed

LDEQ Basin Subsegment 030603

Gap Land Use Data

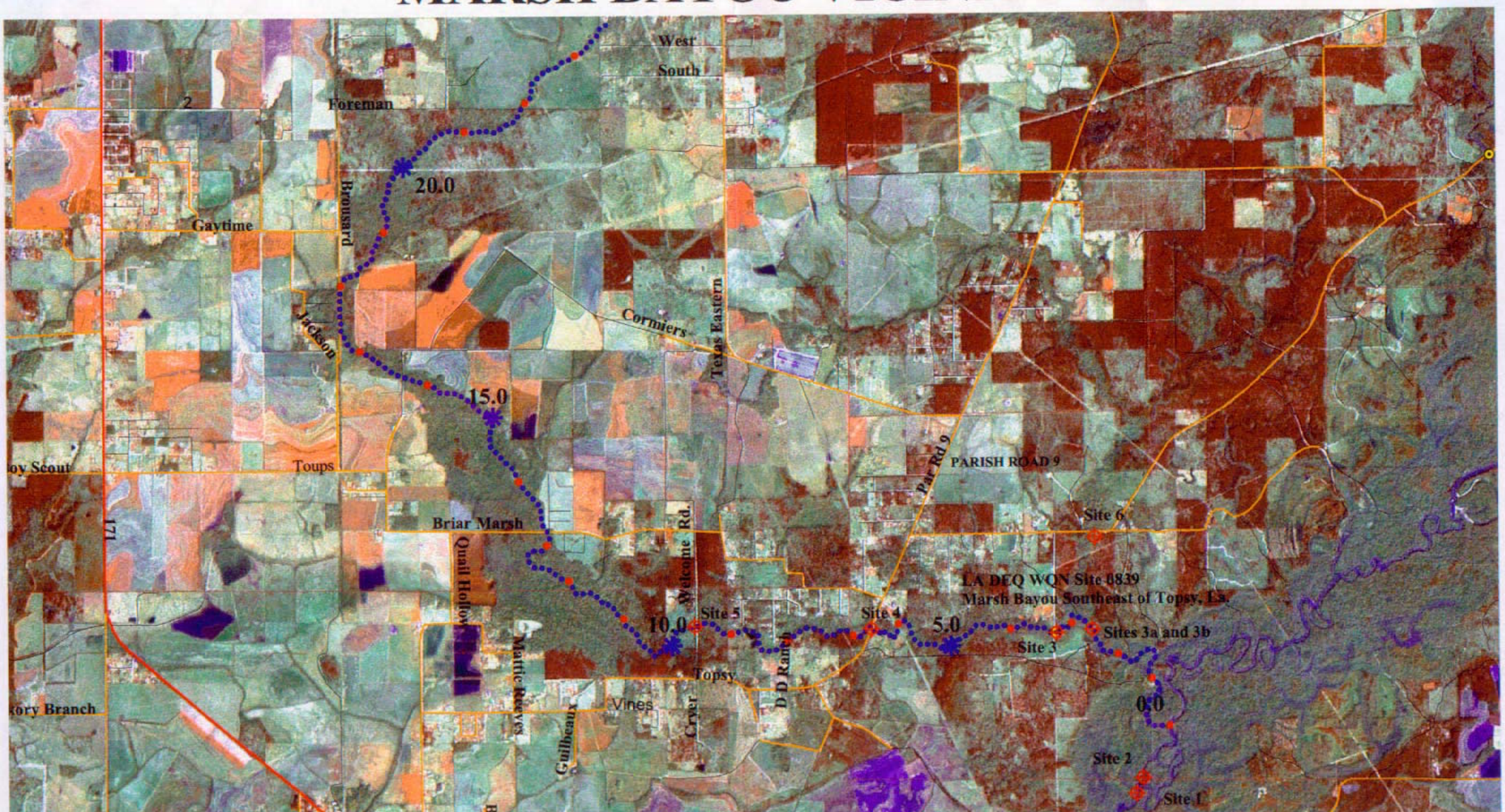




Land Use	Percent	Acres
Agricultural land	45.04	11112.8610
Forest land	14.35	3540.6590
Rangeland	19.04	4697.5490
Water	1.67	410.8480
Wetland	19.90	4909.3110
Urban	0.00	0.0000
Barren	0.00	0.0000

Map Number: 200001273
Map Date: 09/20/2000
Map Projection: UTM, NAD 27
Map Source: LDEQ Basin subsegment data, USGS
Louisiana GAP Land Cover Data

MARSH BAYOU VICINITY MAP



N

1 0 1 2 Kilometers

Environmental Technology Division\Engineering Group 2
Map Number: 200103003
Map Date: April 6, 2001
Map Projection: UTM, NAD 27
Map Source: LDEQ Survey Data, USGS, ESRI Street Map, Spot TM Merge Data

LDEQ Disclaimer:
The Louisiana Department of Environmental Quality (LDEQ) has made every reasonable effort to ensure quality and accuracy in producing this map or data set. Nevertheless, the user should be aware that the information on which it is based may have come from any of a variety of sources, which are of varying degrees of accuracy. Therefore LDEQ cannot guarantee the accuracy of this map or data set, and does not accept any responsibility for the consequence of its use.

MARSH BAYOU WATERSHED SURVEY (6/13-15/00) SITE DESCRIPTIONS FOR DISCHARGE, WATER QUALITY, AND CROSS-SECTION DATA									
SITE NUMBER	DESCPRIPTION	DATA COLLECTED							
		DISCHARGE MEASUREMENT WITH A FLOWMETER	DISCHARGE MEASUREMENT WITH A DROGUE	REPRESENTATIVE CROSS-SECTION DATA	IN-SITU WATER QUALITY DATA	LABORATORY WATER QUALITY DATA	BOD DATA	CHLOROPHYLL a DATA	CONTINUOUS MONITOR DATA
6	Little Marsh Bayou at Adams Rd.								X
5	Marsh Bayou at Welcome Rd.	X		X	X	X	X		X
4	Marsh Bayou at Topsy Rd. (LDEQ WQN Site 0839, Marsh Bayou Southeast of Topsy, LA)			X	X	X	X	X	
3	Marsh Bayou at Marsh Bayou Rd.			X	X	X	X		
3a	Marsh Bayou on the upstream side of the beaver dam				X				
3B	Marsh Bayou on the downstream side of the beaver dam				X				
2	Calcasieu River, downstream of the confluence with Marsh Bayou		X	X	X	X	X	X	X
1	Calcasieu River, downstream of the confluence with Marsh Bayou		X	X	X	X	X	X	X

APPENDIX B – SURVEY DATA AND ASSESSMENT DATA

Marsh Bayou Watershed Survey Discharge Sheets
Marsh Bayou Watershed Survey (6/13-15/00) Water Quality Data (Field and Laboratory)
Ambient Water Quality Network Data: Marsh Bayou Southeast of Topsy Road (Site 58010839)
Ambient Water Quality Network Data: Calcasieu River at Moss Bluff, LA (Site 58010093)
Marsh Bayou Survey Report
Marsh Bayou Reconaissance Survey Notes
Chlorophyll a Datasheet
Marsh Bayou Watershed Survey BOD_U Plots
Marsh Bayou Watershed Survey Cross-Sections
Marsh Bayou Watershed Survey Continuous Monitor Data
Marsh Bayou Reconaissance and Survey Pictures
Marsh Bayou Assessment Data

STREAM DISCHARGE SPREADSHEET

Site Number: 5 **Waterbody:** Marsh Bayou
Stream Description: Marsh Bayou at Welcome Road
Type of Meter: ☐ Price A:A 1:1 ☑ Pygmy ☐ Price A:A 5:1 **Standard:** ☐ Standard 1 ☑ Standard 2
Type of Equipment: ☑ Wading ☐ Bridge Board ☐ Boat Board
Initial Bank: ☐ RDB ☑ LDB
Tapedown:
Guage Height:
Weather: Partly cloudy
Date: 06/14/2000
Start Time: 11:02 **End Time:** 11:20

WIDTH (ft): (Note 1)	2.30
AREA (ft^2): (Note 2)	0.18
AVG. DEPTH (ft): (Note 3)	0.08
DISCHARGE (cfs): (Note 4)	0.05
AVG. VELOCITY (fps): (Note 5)	0.28

Subsection	Distance from initial point (ft)	Width of element (ft) (Note 6)	Depth of element (ft)	Area of element (ft^2) (Note 7)	Velocity of element (fps) .2D	.6D	.8D	Average (Note 8)	Adjusted Angle (Note 9)	Discharge through element (cfs) (Note 10)	Element discharge at % of total discharge (Note 11)
1	0.0	0.15	0.00	0.00		0.00		0.00			
2	0.3	0.30	0.05	0.02		0.00		0.00		0.00	0.00%
3	0.6	0.30	0.10	0.03		0.22		0.22		0.01	13.09%
4	0.9	0.30	0.10	0.03		0.34		0.34		0.01	20.79%
5	1.2	0.30	0.15	0.05		0.38		0.38		0.02	34.55%
6	1.5	0.30	0.10	0.03		0.37		0.37		0.01	22.55%
7	1.8	0.30	0.05	0.02		0.30		0.30		0.00	9.03%
8	2.1	0.25	0.05	0.01		0.00		0.00		0.00	0.00%
9	2.3	0.10	0.00	0.00		0.00		0.00		0.00	0.00%
10											
11											
12											
13											
14											
15											
16											
17											
18											
19											
20											
21											
22											
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27											
28											
29											
30											
31											
32											
33											
34											
35											
36											
37											
38											
39											
40											
41											
42											
43											
44											
45											
	Total	2.30		0.18						0.05	100.00%

Data Collection Crew		Office Data Work	
Measurement made by:	D. Kinard	Data Inputed by / Date:	D. Kinard / 6-14-00
Notetaker/Recorder:	B. Blalock	Data Input Checked by / Date:	
Other:			

Note 1: WIDTH (ft) = sum of the width column
Note 2: AREA (ft^2) = sum of the area column
Note 3: AVG. DEPTH (ft) = area/width (using the values from this table)
Note 4: DISCHARGE (cfs) = sum of the discharge column
Note 5: AVG. VELOCITY (fps) = discharge/area (using the values from this table)
Note 6: Width of element
Note 7: Area = width*depth for element. These areas are generally not representative of the stream.
Note 8: Average velocity = Use 0.6D velocity if depth is less than 2.5 ft or the average of 0.2D and 0.8D velocities if depth is greater than 2.5 ft.
Note 9: If blank assume 1
Note 10: Discharge through element = area of element*average velocity of element
Note 11: Element discharge percent = discharge through element/total discharge X 100%. Element discharge should not exceed 10%.

MARSH BAYOU WATERSHED SURVEY (6/13-15/00) WATER QUALITY DATA (FIELD AND LABORATORY)

Site #	Site Description	Field Depth M	Field Gage Height ft	Field pH	Field Temp. deg C	Field D.O. ppm	Field Conduc-tivity umhos	Field Secchi Disc inches	Field Salinity ppt	TSS ppm
1	Calcasieu River below confluence of Marsh Bayou	1	NR	6.72	29.09	6.45	65	NR	NR	11
2	Marsh Bayou @ confluence of Calcasieu River	1	NR	6.65	29.11	6.8	66	NR	NR	19.5
3	@ Marsh Bayou Road	NR	NR	6.96	24.25	1.25	165	NR	NR	Not detected
4	@ Topsy Road	NR	NR	6.98	24.9	2.31	207	NR	NR	7
5	@ Welcome Road	NR	NR	6.94	25.2	1.77	242	NR	NR	4.8
	Marsh Bayou Site 1 Duplicate	1	NR	6.72	29.09	6.45	65	NR	NR	14
	Marsh Bayou Trip Blank	NR	NR	NR	NR	NR	NR	NR	NR	Not detected

Site #	Site Description	TDS ppm	Specific Conduc-tance umhos/cm	Color PCU	Chloride (IC) ppm	Sulfate ppm	Sodium ppm	Hardness ppm	Nitrate+Nitrite-Nitrogen ppm	Total Phosphorus (TP) ppm
1	Calcasieu River below confluence of Marsh Bayou	78	65.34	45	6.4	3.3	7.5	14.7	0.04	0.11
2	Marsh Bayou @ confluence of Calcasieu River	77	68.1	44	6.4	2.8	14.2	15.4	0.03	0.12
3	@ Marsh Bayou Road	129	175.6	110	16.1	1.7	13.8	53.4	0.05	0.35
4	@ Topsy Road	154	219.8	110	22.8	4.7	17.9	60.9	0.14	0.25
5	@ Welcome Road	160	256.6	110	20.4	5.4	22.2	67.8	0.47	0.21
	Marsh Bayou Site 1 Duplicate	81	67.29	45	6.4	3.2	7	14.6	0.04	0.12
	Marsh Bayou Trip Blank	Not detected	Not detected	Not detected	Not detected	Not detected	<1.0	Not detected	0.02	Not detected

MARSH BAYOU WATERSHED SURVEY (6/13-15/00) WATER QUALITY DATA (FIELD AND LABORATORY)

Site #	Site Description	TKN ppm	Ammonia-Nitrogen ppm	TOC ppm	Total Nitrogen (TN) ppm	TN/TP	Comments
1	Calcasieu River below confluence of Marsh Bayou	0.31	Not detected	6.1	0.35	3.18	Nitrogen limited
2	Marsh Bayou @ confluence of Calcasieu River	0.25	Not detected	4.6	0.28	2.33	Nitrogen limited
3	@ Marsh Bayou Road	1.26	0.25	21.5	1.31	3.74	Nitrogen limited
4	@ Topsy Road	2.7	0.62	18.2	2.84	11.36	Possible algae production
5	@ Welcome Road	3.39	1.66	17.2	3.86	18.38	Possible algae production
	Marsh Bayou Site 1 Duplicate	0.3	Not detected	4.4	0.34	2.83	
	Marsh Bayou Trip Blank	ND	Not detected	Not detected	NA	NA	

Critical Temperature and DO Determinations:

Site Description:	SITE 58010839 MARSH BAYOU

Input values into shaded area

Raw Data				
Date			DO	Temperature
Mo	D	Yr	(mg/l)	(C°)
1	20	99	0.43	10.97
2	18	99	5.8	13.26
3	17	99	5.82	11.45
4	21	99	1.37	17.36
5	19	99	1.39	22.52
6	16	99	2.96	24.78
7	21	99	2.87	25.2
8	18	99	0.54	25.62
9	22	99	1.47	19.9
10	20	99	1.68	15.52
11	17	99	0.26	11.11
12	22	99	8.52	7.46

Summer Season 10th Percentile, DO(mg/l):	**0.965**
Winter Season 10th Percentile, DO(mg/l):	**0.345**
Annual 10th Percentile, DO(mg/l):	**0.441**

Summer Season 90th Percentile, Temperature(°C):	**25.4**
Winter Season 90th Percentile, Temperature(°C):	**15.3**

Summer Season Median, DO(mg/l):	**1.5**
Winter Season Median, DO(mg/l):	**1.4**
Annual Median, DO(mg/l):	**1.5**

Summer Seasonal Months
5
6
7
8
9
10

Winter Seasonal Months
11
12
1
2
3
4

Critical Temperature and DO Determinations:

Site Description:	SITE 0093 CALCASIEU RIVER AT MOSS BLUFF, LA

Input values into shaded area

Raw Data				
Date			DO	Temperature
Mo	D	Yr	(mg/l)	(C°)
1	9	95	9.1	10.7
2	13	95	8.5	11.4
3	13	95	6.8	15.6
4	3	95	6.7	16.8
5	8	95	6	23.1
6	12	95	4.8	27.3
7	10	95	4.8	26.5
8	14	95	3.5	29
9	11	95	4.8	28.8
10	9	95	5.5	20.6
11	13	95	6.9	17.1
12	11	95	8.4	14.1
1	8	96	9.3	9.3
2	12	96	9.3	12
3	11	96	9.3	14.38
4	8	96	6.8	18.6
5	13	96		
6	10	96	5.6	27.9
7	8	96	7.9	30.6
8	12	96	3.8	29.6
9	9	96	3.3	26.9
10	14	96	4.6	21.7
11	18	96	6.6	18
12	9	96	7.4	14.8
1	6	97	7.3	17.5
2	17	97	8.9	10.2
3	10	97	6.4	18.6
4	14	97	5.9	18.6
5	12	97	5	22.3
6	9	97	5	25.7
7	14	97	5.1	29
8	11	97	3.9	28.8
9	8	97	4	29.2
10	13	97	3.6	26.2
11	17	97	7.2	14
12	8	97	7.2	13.4
1	12	98	8.2	14.2
2	9	98	9.2	12.8
3	9	98	6.1	16.1
4	13	98	5.8	21.4
5	11	98	5.3	25.5
6	8	98	5.53	28.7

Summer Season 10th Percentile, DO(mg/l):	**3.248**
Winter Season 10th Percentile, DO(mg/l):	**6.08**
Annual 10th Percentile, DO(mg/l):	**3.76**

Summer Season 90th Percentile, Temperature(°C):	**30.7**
Winter Season 90th Percentile, Temperature(°C):	**18.8**

Summer Season Median, DO(mg/l):	**4.8**
Winter Season Median, DO(mg/l):	**6.9**
Annual Median, DO(mg/l):	**5.9**

Summer Seasonal Months
5
6
7
8
9
10

Winter Seasonal Months
11
12
1
2
3
4

Critical Temperature and DO Determinations:

Site Description:	SITE 0093 CALCASIEU RIVER AT MOSS BLUFF, LA

Input values into shaded area

Raw Data				
Date			DO	Temperature
Mo	D	Yr	(mg/l)	(C°)
7	13	98	5.2	31.4
8	10	98	5.4	30.94
9	10	98	3.04	25.44
10	12	98	2.95	22.5
11	16	98	6.19	17.84
12	14	98	6.87	12.45
1	26	99	6.24	15.84
2	23	99	7.32	14.78
3	23	99	6.47	17.24
4	28	99	4.57	24
5	25	99	4.7	27.06
6	22	99	4.26	27.54
7	27	99	4.5	29.97
8	24	99	2.37	31.18
9	28	99	5.64	27.58
10	26	99	3.94	19.94
11	23	99	6.89	20.47
12	1	99	6.72	15.76

Marsh Bayou Survey Report
Survey: June 13-15, 2000
Report: June 20, 2000

Continuous Monitor Data

Continuous monitors were deployed at site 1, site 2, site 6, and site 5 on June 13, 2000. The monitor at site 5 was set upstream of the bridge and trash, while at site 6 the monitor was set downstream of the bridge, trash, and dead animals. Continuous monitors were collected on June 15, 2000.

Stream Discharge or Flow Data

Stream discharge data was collected at site 5, the uppermost site using a wading rod and flow meter. Flow was determined at site 2 using dye and drogue method. No flow was detected at any other sites. A beaver dam was located 1/8 mile downstream of site 3 with a one-foot water elevation difference.

Water Quality and Chlorophyll-a

Water Quality was collected on all main-stem sites. Chlorophyll-a samples were collected at site 1, site 2, and site 4. A set of Blank and Duplicate samples were also collected for the survey.

Representative Cross-Sections

Using the fathometer, representative cross-sections were established for site 1 and site 2. At sites 5, 4, and 3 a wading rod was used to establish the representative cross-section.

In situ Measurements

In situ profile measurements were collected every meter from the surface to the substrate for each site. Temperature, conductivity, D.O., pH, battery voltage, and % saturated D.O. was recorded at each respective depth. In situ measurements were also collected immediately above and below the beaver dam.

GPS Data

GPS coordinates were collected for sites 1, 2, 3, and 6. Due to densely vegetative surroundings GPS coordinates were not determined for sites 4 and 5, these coordinates may be obtained by modeler using 1:24,000 DRGs.

Marsh Bayou Reconaissance Notes – 2/21/00

Marsh Bayou @ LA 171

Picture number DSCN0220.jpg, looking downstream

Estimated representative width = 15 – 20 ft; estimated representative depth = 3.0 ft;

Little Marsh Bayou

Picture numbers DSCN0221.jpg and DSCN0222.jpg - looking downstream

New bridge; trash dumped over the side of bridge; estimated representative width = 15 ft

Marsh Bayou @ Marsh Bayou Rd.

Picture number DSCN0224.jpg - looking downstream

Estimated representative width = 40 – 45 ft; estimated representive depth = 2.0 ft; bottomland hardwood; silt/clay bed with ditritus material (high SOD); sediment depth approx. = 6 inches; water surface covered with an oil sheen due to the lignens and tanins from the decay of organic material in the stream and on the streambed; area turns into a swamp during high waters; low bank slope (less than approx. 30 deg); low erosion; low ground cover due to tree cover; large riparian zone, totaling 250 – 350 yards wide

Marsh Bayou at Hunting Camp at the end of Marsh Bayou Rd.

Picture number DSCN0225.jpg - looking upstream
Picture number DSCN0226.jpg - looking downstream

Possibly upstream flow; possibly tidal; high water marks approx. 3 – 5 ft above the water surface

Marsh Bayou on Jersey Drive

Picture number DSCN0227.jpg - looking downstream

Stream is pooled

Marsh Bayou at Jersey Drive

Picture number DSCN0228.jpg - looking upstream

Marsh Bayou Reconnaissance Survey
Survey Date: 2/21/00
Survey Crew: D. Greenwood, **S. Pearce**, J. Severson, S. Stone, **W.C. Berger**

Marsh Bayou at East Welcome Rd.

Picture number DSCN0229.jpg - looking downstream
Picture number DSCN0230.jpg - looking upstream

No Q, new bridge - smells of creosote; lots of trash

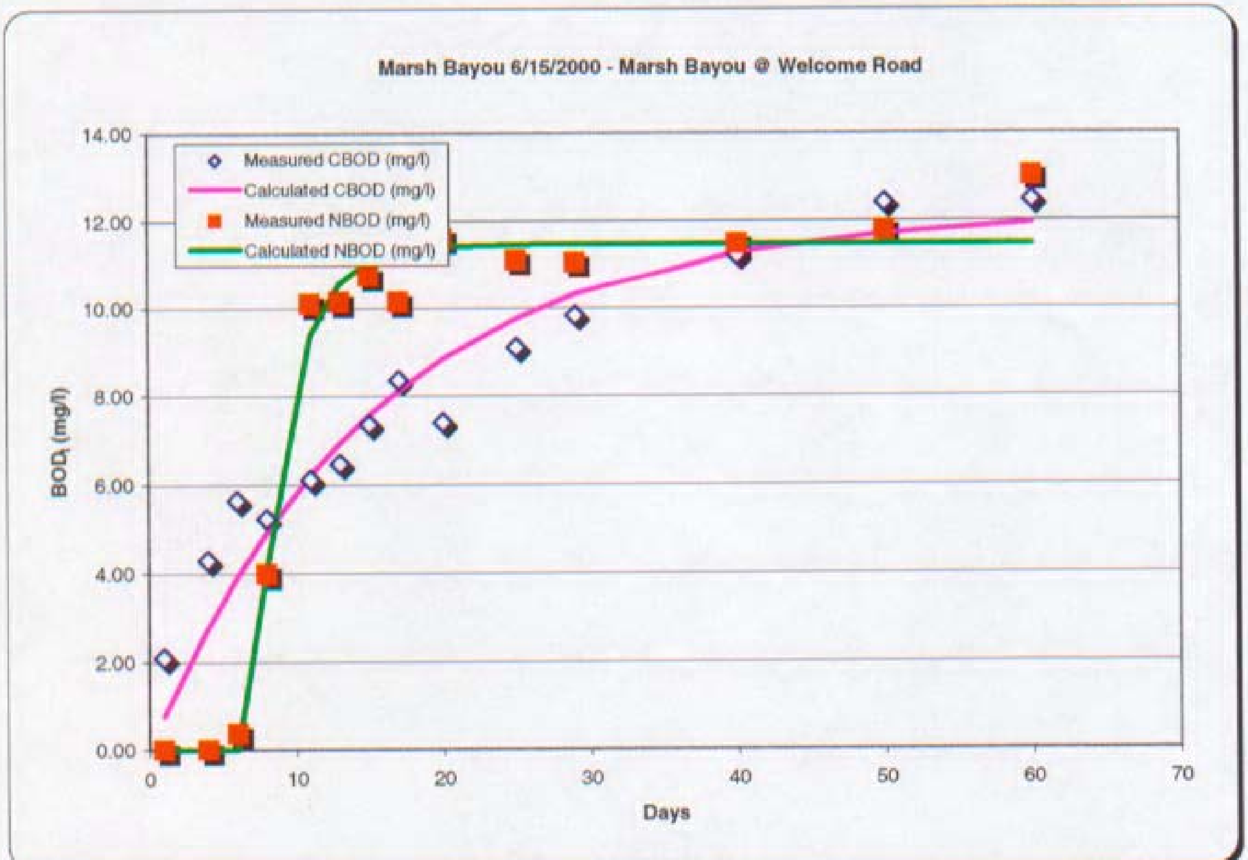
Marsh Bayou at Briar Marsh Rd.

No Q in network of four streams that pass through the upland hardwood swamp

Station/Sample ID	Lab ID	Date Collected	Date Analyzed	Original Volume	Extract Volume	Dilution Factor	RB	RA	Range	Acid Ratio-r	Conversion Factor-F	Uncorrected Chlorophyll A result	Corrected Chlorophyll A result	Pheophytin A result
MARSHB4C	AA27279	6.14.00	9.20/21.00	250	50	0.2	66.8	42.1	10	1.71	1	13.36	11.9	2.5
MARSHB2C	AA27278	6.14.00	9.20/21.00	250	60	0.24	38.2	31.4	10	1.71	1	9.17	3.93	8.96
MARSHB1C	AA27277	6.14.00	9.20/21.00	250	50	0.2	55	42.3	10	1.71	1	11	6.12	8.35
LR3CH	AA27260	6.28.00	9.20/21.00	250	60	0.24	5.5	4.9	10	1.71	1	1.32	0.35	1.66
LR3CHB	AA27261	6.28.00	9.20/21.00	250	50	0.2	-4	-0.07	10	1.71	1	-0.8	-1.89	1.87
INDB5CH	AA27262	6.28.00	9.20/21.00	250	50	0.2	7.6	7.1	30	1.73	0.44	0.67	0.1	0.98
INDB4CH	AA27263	6.28.00	9.20/21.00	250	70	0.28	5	4.8	30	1.73	0.44	0.62	0.06	0.96
INDB2CH	AA27264	6.28.00	9.20/21.00	250	60	0.24	36.5	21	3	1.56	3.13	27.42	32.44	-7.83
INDBCHBL	AA27265	6.28.00	9.20/21.00	250	60	0.24	0.1	-0.3	10	1.71	1	0.02	0.23	-0.35
INDB1CH	AA27337	6.28.00	9.20/21.00	250	50	0.2	79.4	47.5	10	1.71	1	15.88	15.37	0.88
BS29CH	AA27266	7.12.00	9.20/21.00	250	60	0.24	20.6	17.5	30	1.73	0.44	2.18	0.78	2.42
BS26CH	AA27267	7.12.00	9.20/21.00	250	50	0.2	55.9	46.4	30	1.73	0.44	4.92	1.98	5.08
BS25CH	AA27268	7.12.00	9.20/21.00	250	60	0.24	36.3	26	10	1.71	1	8.71	5.95	4.72
BS99CH	AA27269	7.12.00	9.20/21.00	250	50	0.2	71.4	55.1	30	1.73	0.44	6.28	3.4	4.99
BS23CH	AA27270	7.12.00	9.20/21.00	250	50	0.2	37.8	35.2	10	1.71	1	7.56	1.25	10.79
BS7CH	AA27271	7.12.00	9.20/21.00	250	60	0.24	41.5	28.9	30	1.73	0.44	4.38	3.15	2.13
BS8CH	AA27272	7.12.00	9.20/21.00	250	60	0.24	38	30.2	30	1.73	0.44	4.01	1.95	3.57
BS6CH	AA27273	7.12.00	9.20/21.00	250	50	0.2	42.1	32.7	30	1.73	0.44	3.7	1.96	3.02
BS5CH	AA27274	7.12.00	9.20/21.00	250	50	0.2	57.9	42.7	30	1.73	0.44	5.1	3.17	3.33
BS9CH	AA27275	7.12.00	9.20/21.00	250	50	0.2	53	39.8	30	1.73	0.44	4.66	2.75	3.31
BS6CH	AA27276	7.12.00	9.20/21.00	250	50	0.2	54.7	43.9	30	1.73	0.44	4.81	2.25	4.43
DR15CH	AA27280	8.2.00	9.20/21.00	250	50	0.2	31.8	23.9	30	1.73	0.44	2.8	1.65	1.99
TC12CH	AA272306	8.16.00	9.20/21.00	250	50	0.2	46	27.7	3	1.56	3.13	28.8	31.91	-4.86
TC13CH	AA272307	8.16.00	9.20/21.00	250	50	0.2	37.8	24.6	10	1.71	1	7.56	6.36	2.05
TC19CH	AA272308	8.16.00	9.20/21.00	250	50	0.2	54.7	34	30	1.73	0.44	4.81	4.32	0.86

BOD Analysis of the for: **Marsh Bayou 6/15/2000 - Marsh Bayou @ Welcome Road**

Measured Data					Calculated Data		
Days	*Total BOD (mg/l)*	*NOx as N (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	
Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	
0		0.5					
1	2.1	0.37	0.00	2.10	0.00	0.76	
4	4.3	0.38	0.00	4.30	0.00	2.78	
6	6	0.58	0.37	5.63	0.00	3.92	
8	9.2	1.37	3.98	5.22	4.09	4.92	
11	16.20	2.71	10.10	6.10	9.38	6.20	
13	16.6	2.72	10.15	6.45	10.57	6.93	
15	18.1	2.85	10.74	7.36	11.08	7.57	
17	18.5	2.72	10.15	8.35	11.31	8.13	
20	19	3.04	11.61	7.39	11.43	8.84	
25	20.2	2.93	11.11	9.09	11.47	9.77	
29	20.9	2.92	11.06	9.84	11.47	10.32	
40	22.7	3.01	11.47	11.23	11.47	11.27	
50	24.2	3.08	11.79	12.41	11.47	11.71	
60	25.5	3.35	13.02	12.48	11.47	11.94	
					11.47	12.19	UBOD (mg/l)
					0.42	0.06	k rate (1/day)
					6.95	0.00	Lag time (days)



Note 1 - Days from the BOD test start date.

Note 2 - Measured total BOD at time in "Days" column.

Note 3 - Measured (NO_2 + NO_3 as nitrogen) at time in "Days" column.

Note 4 - Calculated by multipling the measured (NO_2+NO_3 as nitrogen) minus the day zero (NO_2 +NO_3 as nitrogen) by 4.57.

Note 5 - Determined by subtracting the calculated NBOD from the measured total BOD.

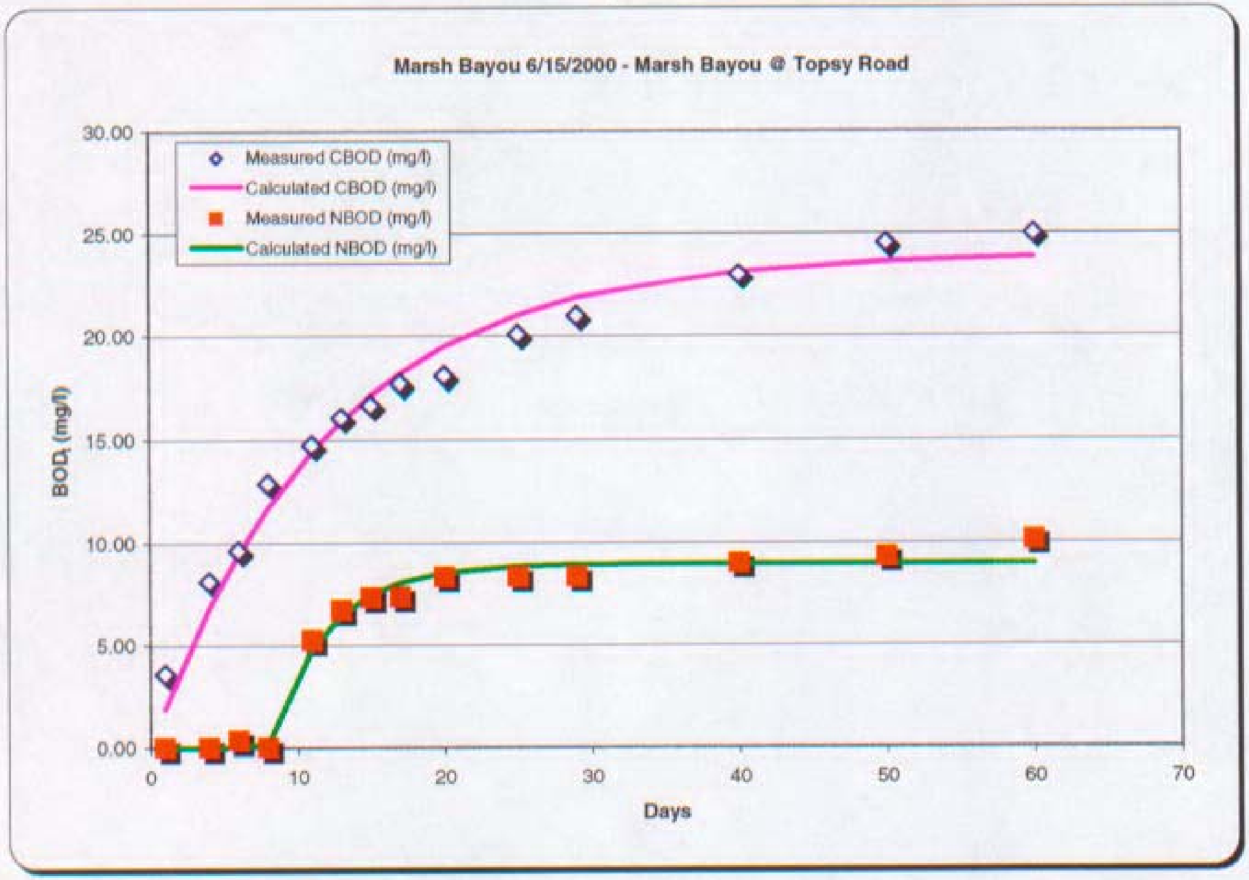
Note 6 - Calculated from the formula {NBODt=UNBOD[1-e-(k(t-lag))]} using the listed values of UNBOD, k decay rate and lag time.

Note 7 - Calculated from the formula {CBODt=UCBOD[1-e-(k(t-lag))]} using the listed values of UCBOD, k decay rate and lag time.

BOD Analysis of the for: **Marsh Bayou 6/15/2000 - Marsh Bayou @ Topsy Road**

Measured Data					Calculated Data	
Days	Total BOD (mg/l)	NOx as N (mg/l)	NBOD (mg/l)	CBOD (mg/l)	NBOD (mg/l)	CBOD (mg/l)
Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7
0		0.15				
1	3.6	0.11	0.00	3.60	0.00	1.92
4	8.1	0.13	0.00	8.10	0.00	6.81
6	10	0.23	0.37	9.63	0.00	9.46
8	12.9	0.06	0.00	12.90	0.17	11.69
11	20.00	1.3	5.26	14.74	4.84	14.42
13	22.8	1.62	6.72	16.08	6.48	15.89
15	24	1.75	7.31	16.69	7.46	17.14
17	25.1	1.76	7.36	17.74	8.06	18.20
20	26.4	1.97	8.32	18.08	8.54	19.48
25	28.4	1.97	8.32	20.08	8.85	21.03
29	29.3	1.97	8.32	20.98	8.92	21.87
40	32	2.12	9.00	23.00	8.96	23.15
50	33.8	2.18	9.28	24.52	8.97	23.63
60	35.1	2.36	10.10	25.00	8.97	23.84

NBOD	CBOD	
8.97	24.00	UBOD (mg/l)
0.25	0.08	k rate (1/day)
7.92	0.00	Lag time (days)



Note 1 - Days from the BOD test start date.

Note 2 - Measured total BOD at time in "Days" column.

Note 3 - Measured ($NO_2 + NO_3$ as nitrogen) at time in "Days" column.

Note 4 - Calculated by multipling the measured (NO_2+NO_3 as nitrogen) minus the day zero (NO_2 +NO_3 as nitrogen) by 4.57.

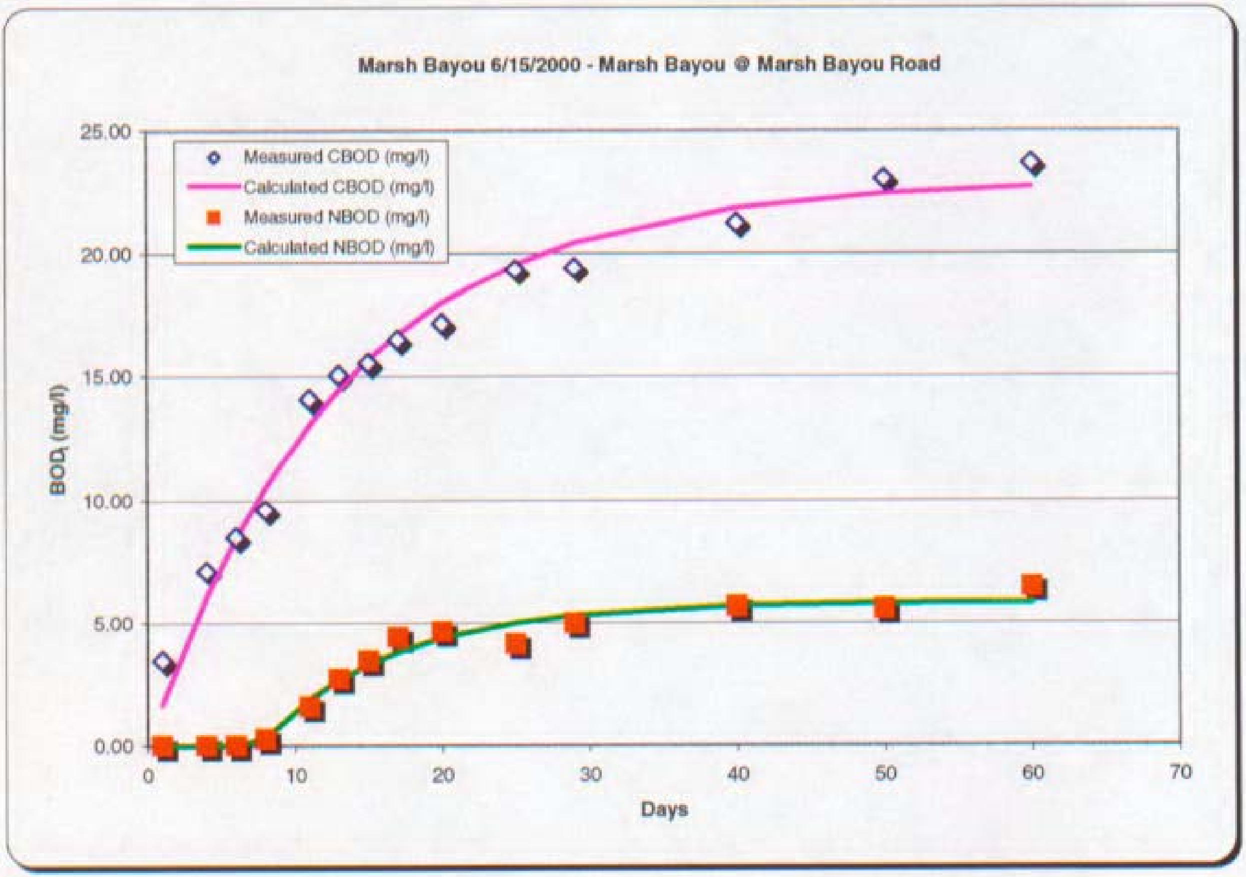
Note 5 - Determined by subtracting the calculated NBOD from the measured total BOD.

Note 6 - Calculated from the formula {NBODt=UNBOD[1-e-(k(t-lag))]} using the listed values of UNBOD, k decay rate and lag time.

Note 7 - Calculated from the formula {CBODt=UCBOD[1-e-(k(t-lag))]} using the listed values of UCBOD, k decay rate and lag time.

BOD Analysis of the for: <u>Marsh Bayou 6/15/2000 - Marsh Bayou @ Marsh Bayou Road</u>

Measured Data					Calculated Data		
Days	*Total BOD (mg/l)*	*NOx as N (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	
Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	
0		0.06					
1	3.5	0.05	0.00	3.50	0.00	1.69	
4	7.1	0.04	0.00	7.10	0.00	6.05	
6	8.5	0.06	0.00	8.50	0.00	8.45	
8	9.9	0.12	0.27	9.63	0.30	10.50	
11	15.70	0.41	1.60	14.10	1.89	13.05	
13	17.8	0.66	2.74	15.06	2.68	14.45	
15	19	0.82	3.47	15.53	3.32	15.65	
17	20.9	1.03	4.43	16.47	3.83	16.69	
20	21.8	1.08	4.66	17.14	4.40	17.97	
25	23.5	0.97	4.16	19.34	5.02	19.54	
29	24.4	1.15	4.98	19.42	5.31	20.43	
40	26.9	1.3	5.67	21.23	5.68	21.85	
50	28.6	1.28	5.58	23.02	5.78	22.42	
60	30.1	1.47	6.44	23.66	5.82	22.69	
					5.83	22.92	UBOD (mg/l)
					0.11	0.08	k rate (1/day)
					7.53	0.00	Lag time (days)



Note 1 - Days from the BOD test start date.

Note 2 - Measured total BOD at time in "Days" column.

Note 3 - Measured (NO_2 + NO_3 as nitrogen) at time in "Days" column.

Note 4 - Calculated by multipling the measured (NO_2+NO_3 as nitrogen) minus the day zero (NO_2 +NO_3 as nitrogen) by 4.57.

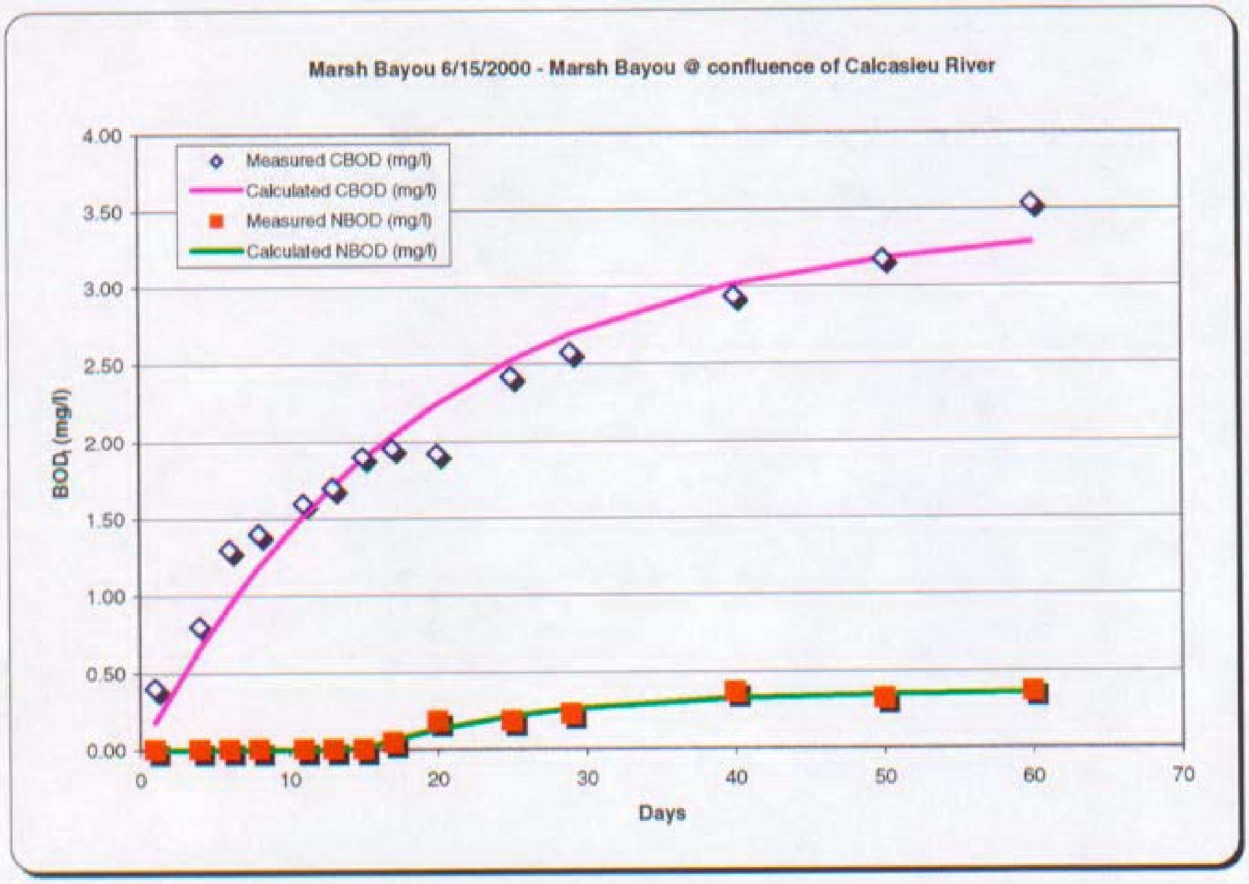
Note 5 - Determined by subtracting the calculated NBOD from the measured total BOD.

Note 6 - Calculated from the formula {NBODt=UNBOD[1-e-(k(t-lag))]} using the listed values of UNBOD, k decay rate and lag time.

Note 7 - Calculated from the formula {CBODt=UCBOD[1-e-(k(t-lag))]} using the listed values of UCBOD, k decay rate and lag time.

BOD Analysis of the for: **Marsh Bayou 6/15/2000 - Marsh Bayou @ confluence of Calcasieu River**
(Later determined to be on the Calcasieu River downstream of Marsh B.)

Measured Data					Calculated Data		
Days	*Total BOD (mg/l)*	*NOx as N (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	
Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	
0		0.05					
1	0.4	0.03	0.00	0.40	0.00	0.18	
4	0.8	0.03	0.00	0.80	0.00	0.66	
6	1.3	0.02	0.00	1.30	0.00	0.93	
8	1.4	0.03	0.00	1.40	0.00	1.19	
11	1.6	0.03	0.00	1.60	0.00	1.52	
13	1.7	0.03	0.00	1.70	0.00	1.71	
15	1.9	0.05	0.00	1.90	0.00	1.88	
17	2	0.06	0.05	1.95	0.06	2.04	
20	2.1	0.09	0.18	1.92	0.13	2.24	
25	2.6	0.09	0.18	2.42	0.21	2.52	
29	2.8	0.1	0.23	2.57	0.26	2.69	
40	3.3	0.13	0.37	2.93	0.32	3.02	
50	3.5	0.12	0.32	3.18	0.35	3.18	
60	3.9	0.13	0.37	3.53	0.36	3.28	
					0.36	3.42	UBOD (mg/l)
					0.09	0.05	k rate (1/day)
					14.88	0.00	Lag time (days)



Note 1 - Days from the BOD test start date.

Note 2 - Measured total BOD at time in "Days" column.

Note 3 - Measured (NO_2 + NO_3 as nitrogen) at time in "Days" column.

Note 4 - Calculated by multipling the measured (NO_2+NO_3 as nitrogen) minus the day zero (NO_2 +NO_3 as nitrogen) by 4.57.

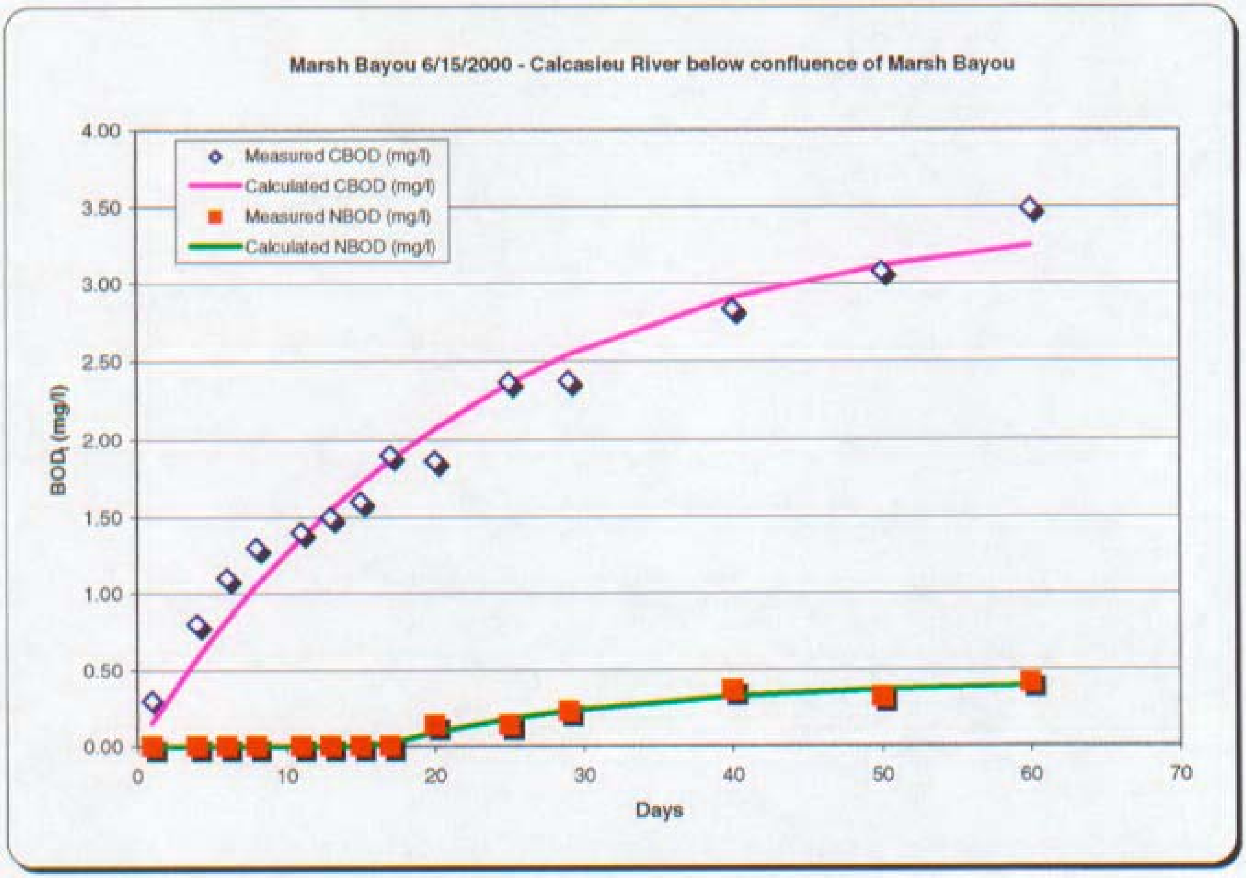
Note 5 - Determined by subtracting the calculated NBOD from the measured total BOD.

Note 6 - Calculated from the formula {NBODt=UNBOD[1-e-(k(t-lag))]} using the listed values of UNBOD, k decay rate and lag time.

Note 7 - Calculated from the formula {CBODt=UCBOD[1-e-(k(t-lag))]} using the listed values of UCBOD, k decay rate and lag time.

BOD Analysis of the for: **Marsh Bayou 6/15/2000 - Calcasieu River below confluence of Marsh Bayou**

Measured Data					Calculated Data		
Days	*Total BOD (mg/l)*	*NOx as N (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	
Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	
0		0.05					
1	0.3	0.03	0.00	0.30	0.00	0.15	
4	0.8	0.03	0.00	0.80	0.00	0.57	
6	1.1	0.03	0.00	1.10	0.00	0.83	
8	1.3	0.04	0.00	1.30	0.00	1.05	
11	1.4	0.03	0.00	1.40	0.00	1.36	
13	1.5	0.04	0.00	1.50	0.00	1.54	
15	1.6	0.04	0.00	1.60	0.00	1.71	
17	1.9	0.05	0.00	1.90	0.02	1.86	
20	2	0.08	0.14	1.86	0.09	2.07	
25	2.5	0.08	0.14	2.36	0.18	2.35	
29	2.6	0.1	0.23	2.37	0.23	2.54	
40	3.2	0.13	0.37	2.83	0.32	2.91	
50	3.4	0.12	0.32	3.08	0.37	3.12	
60	3.9	0.14	0.41	3.49	0.39	3.25	
					0.42	3.48	UBOD (mg/l)
					0.06	0.05	k rate (1/day)
					16.19	0.00	Lag time (days)



Note 1 - Days from the BOD test start date.

Note 2 - Measured total BOD at time in "Days" column.

Note 3 - Measured (NO_2 + NO_3 as nitrogen) at time in "Days" column.

Note 4 - Calculated by multipling the measured (NO_2+NO_3 as nitrogen) minus the day zero (NO_2 +NO_3 as nitrogen) by 4.57.

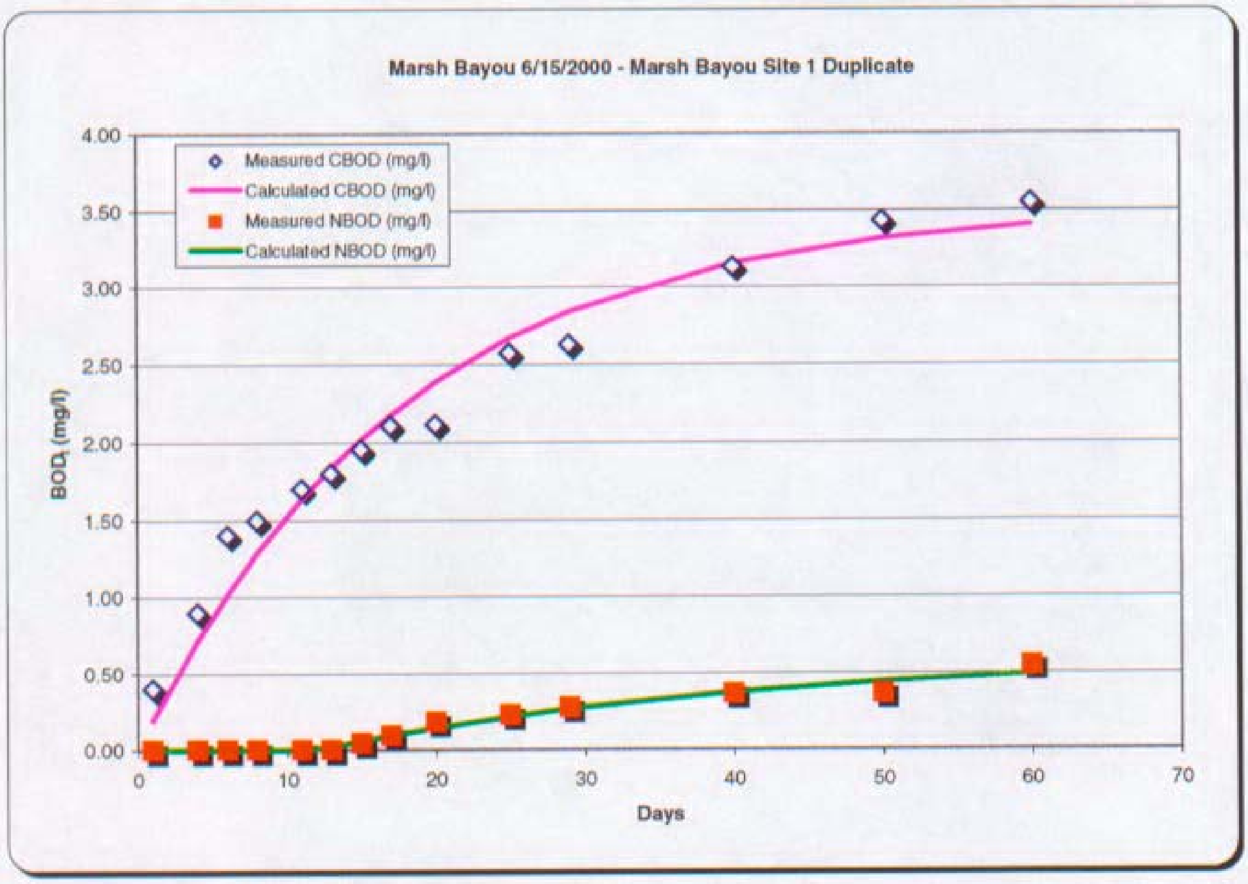
Note 5 - Determined by subtracting the calculated NBOD from the measured total BOD.

Note 6 - Calculated from the formula {NBODt=UNBOD[1-e-(k(t-lag))]} using the listed values of UNBOD, k decay rate and lag time.

Note 7 - Calculated from the formula {CBODt=UCBOD[1-e-(k(t-lag))]} using the listed values of UCBOD, k decay rate and lag time.

BOD Analysis of the for: Marsh Bayou 6/15/2000 - Marsh Bayou Site 1 Duplicate

Measured Data					Calculated Data		
Days	*Total BOD (mg/l)*	*NOx as N (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	*NBOD (mg/l)*	*CBOD (mg/l)*	
Note 1	Note 2	Note 3	Note 4	Note 5	Note 6	Note 7	
0		0.05					
1	0.4	0.03	0.00	0.40	0.00	0.19	
4	0.9	0.03	0.00	0.90	0.00	0.71	
6	1.4	0.03	0.00	1.40	0.00	1.01	
8	1.5	0.04	0.00	1.50	0.00	1.28	
11	1.7	0.03	0.00	1.70	0.00	1.63	
13	1.8	0.04	0.00	1.80	0.02	1.83	
15	2	0.06	0.05	1.95	0.06	2.01	
17	2.2	0.07	0.09	2.11	0.09	2.18	
20	2.3	0.09	0.18	2.12	0.14	2.39	
25	2.8	0.1	0.23	2.57	0.22	2.67	
29	2.9	0.11	0.27	2.63	0.27	2.84	
40	3.5	0.13	0.37	3.13	0.37	3.16	
50	3.8	0.13	0.37	3.43	0.44	3.31	
60	4.1	0.17	0.55	3.55	0.49	3.40	
					0.61	3.52	**UBOD (mg/l)**
					0.03	0.06	**k rate (1/day)**
					12.10	0.00	**Lag time (days)**



Note 1 - Days from the BOD test start date.

Note 2 - Measured total BOD at time in "Days" column.

Note 3 - Measured (NO_2 + NO_3 as nitrogen) at time in "Days" column.

Note 4 - Calculated by multipling the measured (NO_2+NO_3 as nitrogen) minus the day zero (NO_2 +NO_3 as nitrogen) by 4.57.

Note 5 - Determined by subtracting the calculated NBOD from the measured total BOD.

Note 6 - Calculated from the formula {NBODt=UNBOD[1-e-(k(t-lag))]} using the listed values of UNBOD, k decay rate and lag time.

Note 7 - Calculated from the formula {CBODt=UCBOD[1-e-(k(t-lag))]} using the listed values of UCBOD, k decay rate and lag time.

CROSS-SECTIONAL AREA (fathometer)

SITE NUMBER: 5 **DATE:** 06/14/00

SITE DESCRIPTION: 100 ft upstream of bridge

WATERBODY: Marsh Bayou @ welcome road

TYPE OF INSTRUMENT: 4ft wading rod

TAPE DOWN: **DISCHARGE:**

WEATHER: partly clouds **START TIME:** 11:00

END TIME: 11:10

NOTES	DISTANCE	WIDTH	DEPTH	AREA (ft sq)
	0.0		0.00	
	1.0	1.00	0.50	0.50
	2.0	1.00	1.20	1.20
	3.0	1.00	1.70	1.70
	4.0	1.00	2.00	2.00
	5.0	1.00	2.20	2.20
	6.0	1.00	2.30	2.30
	7.0	1.00	2.30	2.30
	8.0	1.00	2.40	2.40
	9.0	1.00	2.40	2.40
	10.0	1.00	1.70	1.70
	11.0	1.00	1.30	1.30
	12.0	1.00	1.20	1.20
	13.0	1.00	1.00	1.00
	14.0	0.65	0.40	0.26
	14.3	0.15	0.00	0.00
Temperature = 25.2 C				
Spec. = 242				
DO = 1.77				
pH = 6.94				
Battery = 4.3				
DO% = 21.4				
	Total	13.80		22.46

CROSS-SECTION CREW: Stone, Schwartzenburg

DATA INPUTED BY/ DATE: D. Kinard / 6-15-00

DATA INPUT CHECKED BY:

CHECK DATE:

CROSS-SECTIONAL AREA (fathometer)

SITE NUMBER: 4 DATE: 06/14/00

SITE DESCRIPTION: 100 ft upstream of bridge

WATERBODY: marsh bayou

TYPE OF INSTRUMENT:

TAPE DOWN: DISCHARGE:

WEATHER: partly cloudy START TIME: 10:05

END TIME: 10:15

NOTES	DISTANCE	WIDTH	DEPTH	AREA (ft sq)
	0.0		0.00	
	1.0	1.00	1.50	1.50
	2.0	1.00	2.20	2.20
	3.0	1.00	2.40	2.40
	4.0	1.00	2.60	2.60
	5.0	1.00	2.80	2.80
	6.0	1.00	2.60	2.60
	7.0	1.00	2.50	2.50
	8.0	1.00	2.40	2.40
	9.0	1.00	2.30	2.30
	10.0	1.00	2.00	2.00
	11.0	1.00	1.80	1.80
	12.0	1.00	2.10	2.10
	13.0	1.00	2.20	2.20
	14.0	1.00	2.50	2.50
	15.0	1.00	2.70	2.70
	16.0	1.00	2.90	2.90
	17.0	1.00	3.30	3.30
	18.0	1.00	3.50	3.50
	19.0	1.00	3.50	3.50
	20.0	1.00	3.60	3.60
	21.0	1.00	3.50	3.50
	22.0	1.00	3.10	3.10
	23.0	1.00	2.60	2.60
	24.0	1.00	1.90	1.90
	25.0	1.00	1.10	1.10
	26.0	0.50	0.00	0.00
	Total	25.50		63.60

CROSS-SECTION CREW:

DATA INPUTED BY/ DATE:

DATA INPUT CHECKED BY:

CHECK DATE:

CROSS-SECTIONAL AREA (fathometer)

SITE NUMBER: 3 DATE: 06/14/00
SITE DESCRIPTION: 100 ft downstream of bridge
WATERBODY: Marsh Bayou
TYPE OF INSTRUMENT:
TAPE DOWN: DISCHARGE:
WEATHER: Partly Cloudy START TIME: 9:15
END TIME: 9:30

NOTES	DISTANCE	WIDTH	DEPTH	AREA (ft sq)
	0.0		0.00	
	2.0	2.00	0.30	0.60
	4.0	2.00	0.40	0.80
	6.0	2.00	1.00	2.00
	8.0	2.00	1.30	2.60
	10.0	2.00	1.60	3.20
	12.0	2.00	1.50	3.00
	14.0	2.00	1.00	2.00
	16.0	2.00	1.30	2.60
	18.0	2.00	2.00	4.00
	20.0	2.00	2.80	5.60
	22.0	2.00	3.30	6.60
	24.0	2.00	3.90	7.80
	26.0	2.00	3.50	7.00
	28.0	2.00	3.10	6.20
	30.0	2.00	3.10	6.20
	32.0	2.00	3.50	7.00
	34.0	2.00	3.00	6.00
	36.0	2.00	2.70	5.40
	38.0	2.00	2.20	4.40
	40.0	2.00	1.20	2.40
	42.0	2.00	0.40	0.80
	44.0	1.25	0.20	0.25
	44.5	0.25	0.00	0.00
	Total	43.50		86.45

CROSS-SECTION CREW:

DATA INPUTED BY/ DATE:
DATA INPUT CHECKED BY:
CHECK DATE:

CROSS-SECTIONAL AREA (fathometer)

SITE NUMBER: 2 **DATE:** 06/14/00

SITE DESCRIPTION: Marsh Bayou just above confluence with Calcasieu River

WATERBODY: Marsh Bayou

TYPE OF INSTRUMENT: Raytheon Fathometer

TAPE DOWN: N/A **DISCHARGE:** 0

WEATHER: Partly Cloudy, Windy **START TIME:** 11:00 AM

END TIME: 11:05 AM

NOTES	DISTANCE	WIDTH	DEPTH	AREA (ft sq)
Data derived from:	0.0	5.00	0.00	0.00
fathometer chart recording	10.0	10.00	5.50	55.00
	20.0	10.00	5.50	55.00
	30.0	10.00	5.00	50.00
	40.0	10.00	5.25	52.50
	50.0	10.00	4.50	45.00
	60.0	10.00	5.25	52.50
	70.0	10.00	7.00	70.00
	80.0	10.00	7.50	75.00
	90.0	10.00	6.00	60.00
	100.0	6.00	2.00	12.00
	102.0	1.00	0.00	0.00
	Total	102.00		527.00

CROSS-SECTION CREW: J. Nolan, S. Pearce

DATA INPUTTED BY/ DATE: J. Nolan 6/15/00

DATA INPUT CHECKED BY: B. Blalock

CHECK DATE: 06/15/2000

CROSS-SECTIONAL AREA (fathometer)

SITE NUMBER: 1 **DATE:** 06/14/00

SITE DESCRIPTION: Calcasieu River 100 yds below confluence with Marsh Bayou

WATERBODY: Marsh Bayou

TYPE OF INSTRUMENT: Raytheon Fathometer

TAPE DOWN: N/A **DISCHARGE:** 0

WEATHER: Partly Cloudy, Windy **START TIME:** 9:30 AM

END TIME: 9:35 AM

NOTES	DISTANCE	WIDTH	DEPTH	AREA (ft sq)
Data derived from:	0.0	2.50	0.00	0.00
fathometer chart recording	5.0	7.50	3.00	22.50
	15.0	10.00	6.00	60.00
	25.0	10.00	8.25	82.50
	35.0	10.00	10.75	107.50
	45.0	10.00	12.50	125.00
	55.0	10.00	13.50	135.00
	65.0	10.00	14.00	140.00
	75.0	10.00	14.25	142.50
	85.0	10.00	14.50	145.00
	95.0	10.00	14.75	147.50
	105.0	10.00	12.50	125.00
	115.0	10.00	11.50	115.00
	125.0	10.00	9.50	95.00
	135.0	10.00	7.00	70.00
	145.0	9.00	4.00	36.00
	153.0	4.00	0.00	0.00
	Total	153.00		1548.50

CROSS-SECTION CREW: J. Nolan, S. Pearce

DATA INPUTTED BY/ DATE: J. Nolan 6/15/00

DATA INPUT CHECKED BY: B. Blalock

CHECK DATE: 06/15/2000

SITE 6 LITTLE MARSH BAYOU AT ADAMS ROAD

Marsh Bayou
Site 6
06/13/00

DataSonde 4a 37750
Log File Name : MARSHB6
Setup Date (MMDDYY) : 061200
Setup Time (HHMMSS) : 115934
Starting Date (MMDDYY) : 061300
Starting Time (HHMMSS) : 010000
Stopping Date (MMDDYY) : 061800
Stopping Time (HHMMSS) : 000000
Interval (HHMMSS) : 001500
Sensor warmup (HHMMSS) : 000200
Circltr warmup (HHMMSS) : 000200

Date MMDDYY	Time HHMMSS	IBatt Volts	Circ Status	Temp øC	SpCond æS/cm	DO% Sat	DO mg/l	pH Units
06/13/2000	10000	11.7	1	22.06	0	101.2	8.88	6.91
06/13/2000	11500	11.7	1	22.1	0	100	8.76	6.97
06/13/2000	170000	11.6	1	23.9	97.8	0.5	0.04	6.47
06/13/2000	171500	11.6	1	23.91	97.8	0.6	0.05	6.47
06/13/2000	173000	11.6	1	23.9	98.4	0.4	0.03	6.47
06/13/2000	174500	11.5	1	23.91	97.9	0.5	0.04	6.47
06/13/2000	180000	11.5	1	23.97	97.7	0.5	0.04	6.47
06/13/2000	181500	11.5	1	23.98	97.7	0.4	0.03	6.48
06/13/2000	183000	11.5	1	24	98	0.4	0.03	6.48
06/13/2000	184500	11.4	1	24.03	97	0.4	0.03	6.48
06/13/2000	190000	11.4	1	24.16	96.4	0.5	0.04	6.47
06/13/2000	191500	11.4	1	24.1	97.2	0.4	0.03	6.48
06/13/2000	193000	11.5	1	24.04	97.5	0.4	0.03	6.49
06/13/2000	194500	11.4	1	24.08	98	0.4	0.04	6.48
06/13/2000	200000	11.4	1	24.11	97.3	0.3	0.03	6.49
06/13/2000	201500	11.5	1	24.13	97.8	0.3	0.02	6.48
06/13/2000	203000	11.6	1	24.13	97.7	0.4	0.03	6.49
06/13/2000	204500	11.6	1	24.11	98.7	0.3	0.02	6.5
06/13/2000	210000	11.4	1	24.11	98	0.4	0.03	6.49
06/13/2000	211500	11.6	1	24.1	98.4	0.3	0.03	6.5
06/13/2000	213000	11.4	1	24.1	98.2	0.3	0.02	6.5
06/13/2000	214500	11.6	1	24.1	98.8	0.3	0.02	6.5
06/13/2000	220000	11.5	1	24.09	99	0.4	0.03	6.51
06/13/2000	221500	11.4	1	24.09	99	0.3	0.03	6.51
06/13/2000	223000	11.6	1	24.13	98.9	0.2	0.02	6.52
06/13/2000	224500	11.5	1	24.12	99.8	0.3	0.03	6.52
06/13/2000	230000	11.4	1	24.14	99.6	0.3	0.02	6.52
06/13/2000	231500	11.5	1	24.15	99.4	0.4	0.04	6.52
06/13/2000	233000	11.5	1	24.17	99.6	0.4	0.03	6.52
06/13/2000	234500	11.4	1	24.16	99.7	0.3	0.03	6.53
06/14/2000	0	11.4	1	24.14	99.9	1.5	0.12	6.52
06/14/2000	1500	11.4	1	24.16	99.8	1.5	0.13	6.52
06/14/2000	3000	11.4	1	24.14	99.8	1.5	0.12	6.52
06/14/2000	4500	11.5	1	24.11	100.3	1.6	0.14	6.53
06/14/2000	10000	11.5	1	24.13	99.8	1.6	0.13	6.53
06/14/2000	11500	11.5	1	24.12	99.9	2.6	0.22	6.53
06/14/2000	13000	11.4	1	24.15	99.7	1	0.09	6.53
06/14/2000	14500	11.5	1	24.13	99.7	0.7	0.06	6.53
06/14/2000	20000	11.5	1	24.13	99.2	0.9	0.07	6.53
06/14/2000	21500	11.4	1	24.13	99.6	0.6	0.05	6.54
06/14/2000	23000	11.4	1	24.1	99.4	0.3	0.03	6.54
06/14/2000	24500	11.4	1	24.09	100.4	0.3	0.03	6.55
06/14/2000	30000	11.5	1	24.12	99.2	0.3	0.02	6.55
06/14/2000	31500	11.4	1	24.09	100.9	0.3	0.02	6.55
06/14/2000	33000	11.5	1	24.08	100.4	0.2	0.02	6.55
06/14/2000	34500	11.4	1	24.07	97.6	0.2	0.02	6.55
06/14/2000	40000	11.4	1	24.06	100.1	0.3	0.02	6.56
06/14/2000	41500	11.4	1	24.03	101.3	0.2	0.02	6.55
06/14/2000	43000	11.4	1	24.02	99.9	0.2	0.02	6.55
06/14/2000	44500	11.4	1	24.03	101.4	0.2	0.02	6.55
06/14/2000	50000	11.4	1	24	102	0.3	0.02	6.55
06/14/2000	51500	11.5	1	23.98	102.1	0.2	0.01	6.55
06/14/2000	53000	11.4	1	23.97	103.4	0.2	0.02	6.56
06/14/2000	54500	11.5	1	23.95	103.5	0.2	0.02	6.54
06/14/2000	60000	11.4	1	23.94	102.3	0.2	0.02	6.56
06/14/2000	61500	11.4	1	23.91	105.3	0.3	0.02	6.57
06/14/2000	63000	11.4	1	23.91	100.2	0.2	0.02	6.56
06/14/2000	64500	11.4	1	23.9	100.9	0.3	0.02	6.56
06/14/2000	70000	11.4	1	23.87	102.7	0.1	0.01	6.56
06/14/2000	71500	11.4	1	23.84	104	0.3	0.02	6.56
06/14/2000	73000	11.4	1	23.82	104.3	0.2	0.02	6.56
06/14/2000	74500	11.5	1	23.8	102.5	0.3	0.02	6.57

Marsh Bayou
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06/14/2000	80000	11.4	1	23.8	103.2	0.2	0.02	6.58
06/14/2000	81500	11.4	1	23.78	104.4	0.2	0.01	6.57
06/14/2000	83000	11.4	1	23.77	103.7	0.2	0.02	6.58
06/14/2000	84500	11.4	1	23.76	105.1	0.1	0.01	6.58
06/14/2000	90000	11.4	1	23.76	104.7	0.2	0.02	6.58
06/14/2000	91500	11.4	1	23.75	105.6	0.2	0.02	6.58
06/14/2000	93000	11.4	1	23.77	105	0.2	0.01	6.58
06/14/2000	94500	11.5	1	23.77	105.3	0.2	0.02	6.58
06/14/2000	100000	11.4	1	23.78	105.6	0.3	0.02	6.58
06/14/2000	101500	11.4	1	23.78	105.4	0.2	0.02	6.58
06/14/2000	103000	11.4	1	23.78	105	0.3	0.02	6.58
06/14/2000	104500	11.4	1	23.79	105.1	0.2	0.02	6.58
06/14/2000	110000	11.4	1	23.82	104.4	0.3	0.02	6.57
06/14/2000	111500	11.4	1	23.8	103.5	0.2	0.02	6.58
06/14/2000	113000	11.4	1	23.83	104	0.2	0.01	6.56
06/14/2000	114500	11.4	1	23.82	104.3	0.2	0.02	6.57
06/14/2000	120000	11.4	1	23.82	103.4	0.1	0.01	6.56
06/14/2000	121500	11.4	1	23.82	103.5	0.2	0.01	6.55
06/14/2000	123000	11.4	1	23.84	104.6	0.2	0.02	6.56
06/14/2000	124500	11.4	1	23.85	103.6	0.2	0.02	6.55
06/14/2000	130000	11.4	1	23.86	103.5	0.2	0.01	6.54
06/14/2000	131500	11.4	1	23.89	102.9	0.2	0.02	6.55
06/14/2000	133000	11.4	1	23.88	103.3	0.1	0.01	6.54
06/14/2000	134500	11.4	1	23.88	103.2	0.2	0.02	6.54
06/14/2000	140000	11.4	1	23.93	102.7	0.2	0.01	6.54
06/14/2000	141500	11.4	1	23.96	102	0.2	0.01	6.54
06/14/2000	143000	11.4	1	23.95	102	0.2	0.02	6.53
06/14/2000	144500	11.4	1	23.97	101.6	0.2	0.02	6.53
06/14/2000	150000	11.3	1	24.02	101.2	0.2	0.01	6.53
06/14/2000	151500	11.3	1	23.99	101.4	0.1	0.01	6.53
06/14/2000	153000	11.4	1	24.05	100.9	0.2	0.02	6.53
06/14/2000	154500	11.4	1	24.01	100.7	0.2	0.02	6.52
06/14/2000	160000	11.4	1	24.06	100	0.2	0.02	6.52
06/14/2000	161500	11.4	1	24.06	100.4	0.2	0.02	6.52
06/14/2000	163000	11.4	1	24.09	100.4	0.2	0.02	6.52
06/14/2000	164500	11.4	1	24.14	99.3	0.2	0.02	6.52
06/14/2000	170000	11.4	1	24.18	99.5	0.3	0.02	6.52
06/14/2000	171500	11.3	1	24.08	100.4	0.2	0.02	6.51
06/14/2000	173000	11.4	1	24.21	99	0.2	0.01	6.51
06/14/2000	174500	11.4	1	24.2	99	0.2	0.02	6.51
06/14/2000	180000	11.4	1	24.29	98.3	0.2	0.02	6.51
06/14/2000	181500	11.3	1	24.25	98.5	0.2	0.02	6.51
06/14/2000	183000	11.3	1	24.25	98.6	0.3	0.02	6.5
06/14/2000	184500	11.4	1	24.39	97.8	0.1	0.01	6.5
06/14/2000	190000	11.3	1	24.44	97.1	0.2	0.02	6.5
06/14/2000	191500	11.4	1	24.38	97.5	0.2	0.02	6.5
06/14/2000	193000	11.4	1	24.42	97.4	0.2	0.02	6.5
06/14/2000	194500	11.4	1	24.48	97.6	0.2	0.01	6.5
06/14/2000	200000	11.4	1	24.5	97.2	0.1	0.01	6.5
06/14/2000	201500	11.4	1	24.5	97.2	0.1	0.01	6.5
06/14/2000	203000	11.3	1	24.53	97.2	0.2	0.02	6.5
06/14/2000	204500	11.4	1	24.49	97.8	0.2	0.02	6.51
06/14/2000	210000	11.4	1	24.54	97.6	0.1	0.01	6.51
06/14/2000	211500	11.4	1	24.52	97.6	0.2	0.01	6.51
06/14/2000	213000	11.4	1	24.55	97.9	0.2	0.01	6.51
06/14/2000	214500	11.4	1	24.52	98.3	0.2	0.02	6.51
06/14/2000	220000	11.4	1	24.52	98.1	0.2	0.01	6.51
06/14/2000	221500	11.4	1	24.56	98.8	0.1	0.01	6.52
06/14/2000	223000	11.3	1	24.59	96.6	0.1	0.01	6.53
06/14/2000	224500	11.4	1	24.53	98.1	0.2	0.02	6.53
06/14/2000	230000	11.4	1	24.51	98	0.2	0.01	6.53
06/14/2000	231500	11.3	1	24.53	98.9	0.1	0.01	6.53
06/14/2000	233000	11.4	1	24.57	99.1	0.2	0.02	6.53
06/14/2000	234500	11.4	1	24.56	99	0.2	0.02	6.53
06/15/2000	0	11.4	1	24.55	99.2	0.1	0.01	6.53
06/15/2000	1500	11.4	1	24.58	99.1	0.2	0.02	6.53
06/15/2000	3000	11.4	1	24.63	99.1	0.2	0.02	6.54
06/15/2000	4500	11.4	1	24.53	99.6	0.3	0.02	6.53
06/15/2000	10000	11.4	1	24.57	99.5	0.2	0.02	6.53
06/15/2000	11500	11.3	1	24.58	99.9	0.2	0.02	6.55
06/15/2000	13000	11.4	1	24.56	97.8	0.2	0.02	6.56
06/15/2000	14500	11.3	1	24.57	97.7	0.2	0.02	6.56
06/15/2000	20000	11.3	1	24.6	99.1	0.1	0.01	6.56
06/15/2000	21500	11.3	1	24.57	98.2	0.2	0.02	6.56
06/15/2000	23000	11.4	1	24.54	97.8	0.1	0.01	6.57
06/15/2000	24500	11.4	1	24.56	96.7	0.1	0.01	6.56
06/15/2000	30000	11.4	1	24.54	98.1	0.3	0.03	6.57
06/15/2000	31500	11.4	1	24.54	99.8	0.4	0.03	6.56

Marsh Bayou
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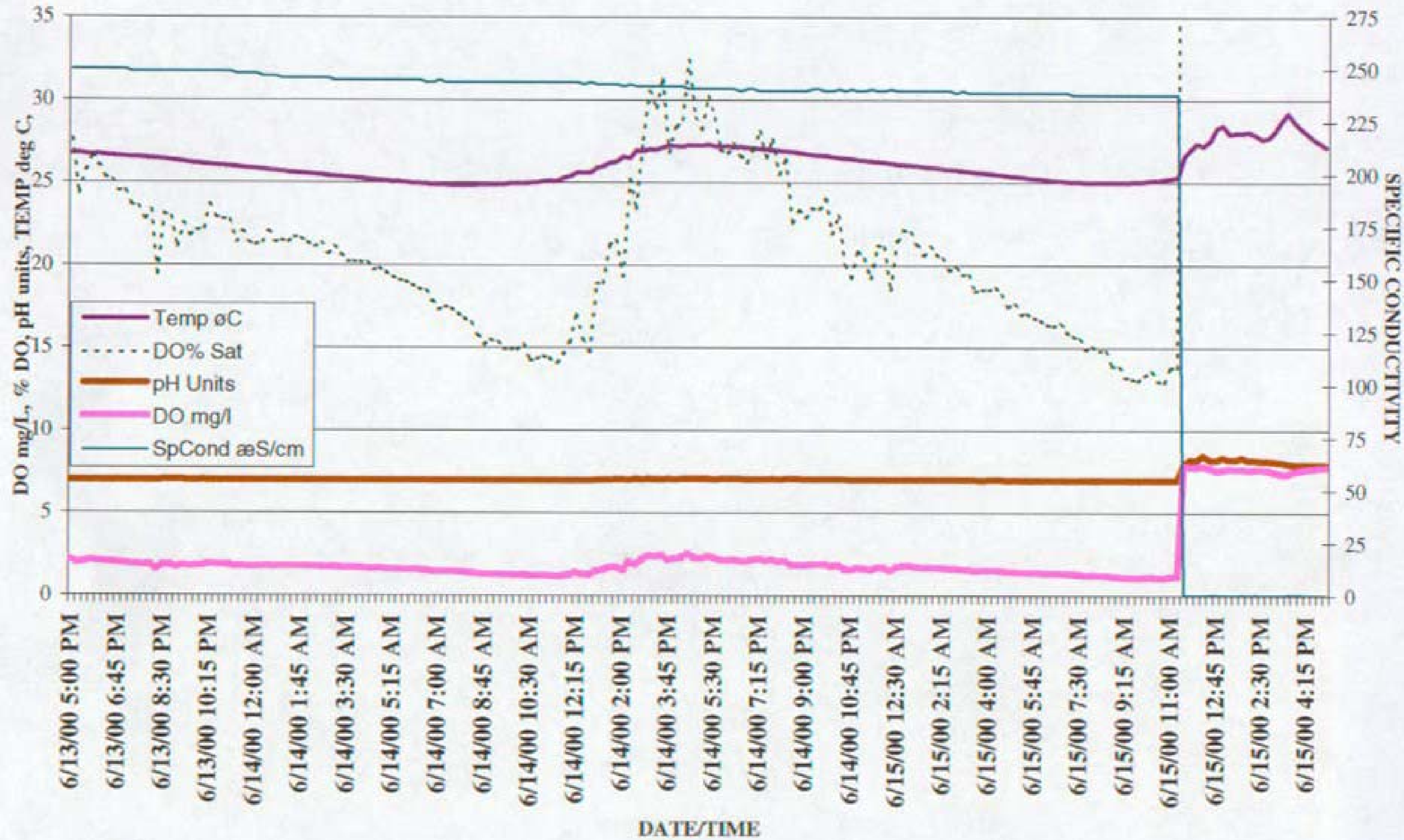
06/15/2000	33000	11.4	1	24.54	98.3	0.3	0.03	6.58
06/15/2000	34500	11.4	1	24.52	100.1	0.1	0.01	6.56
06/15/2000	40000	11.3	1	24.47	99.8	0.2	0.02	6.57
06/15/2000	41500	11.4	1	24.48	99.8	0.2	0.01	6.57
06/15/2000	43000	11.3	1	24.49	98.4	0.2	0.01	6.55
06/15/2000	44500	11.4	1	24.47	99.3	0.2	0.02	6.57
06/15/2000	50000	11.4	1	24.42	97.4	0.1	0.01	6.57
06/15/2000	51500	11.4	1	24.41	99	0.1	0.01	6.58
06/15/2000	53000	11.3	1	24.43	96.9	0.2	0.02	6.55
06/15/2000	54500	11.3	1	24.38	96.7	0.2	0.02	6.55
06/15/2000	60000	11.4	1	24.37	97.6	0.2	0.02	6.55
06/15/2000	61500	11.4	1	24.34	97.2	0.2	0.02	6.54
06/15/2000	63000	11.3	1	24.28	100.9	0.2	0.02	6.55
06/15/2000	64500	11.3	1	24.29	97.8	0.1	0.01	6.56
06/15/2000	70000	11.4	1	24.25	98.8	0.2	0.02	6.56
06/15/2000	71500	11.4	1	24.22	98	0.2	0.01	6.55
06/15/2000	73000	11.3	1	24.2	97.3	0.2	0.01	6.55
06/15/2000	74500	11.4	1	24.17	99.1	0.3	0.03	6.55
06/15/2000	80000	11.4	1	24.14	101.8	0.1	0.01	6.56
06/15/2000	81500	11.4	1	24.11	102.6	0.3	0.02	6.57
06/15/2000	83000	11.3	1	24.1	101.9	0.2	0.02	6.58
06/15/2000	84500	11.4	1	24.08	103.2	0.1	0.01	6.59
06/15/2000	90000	11.4	1	24.07	102.2	0.1	0.01	6.58
06/15/2000	91500	11.3	1	24.05	103.9	0.1	0.01	6.59
06/15/2000	93000	11.3	1	24.06	102.4	0.1	0.01	6.59
06/15/2000	94500	11.2	1	24.05	100.9	0.1	0.01	6.6
06/15/2000	100000	11.4	1	24.05	101.8	0.2	0.02	6.6
06/15/2000	101500	11.2	1	24.03	102.6	0.1	0.01	6.6
06/15/2000	103000	11.3	1	24.04	102.8	0.1	0.01	6.6
06/15/2000	104500	11.3	1	24.03	102.1	0.2	0.02	6.61
06/15/2000	110000	11.3	1	26.49	0.1	96.3	7.78	9.51
06/15/2000	111500	11.3	1	27.28	0	95.3	7.58	7.11
06/15/2000	113000	11.4	1	27.92	0.1	67	5.27	7.38
06/15/2000	114500	11.4	1	27.75	0	64.8	5.12	7.69
06/15/2000	120000	11.4	1	27.35	0	62.2	4.94	7.78
06/15/2000	121500	11.4	1	27.17	0	70.8	5.65	6.97
06/15/2000	123000	11.4	1	28.28	0	57.3	4.48	7.24
06/15/2000	124500	11.4	1	29.3	0.1	47.3	3.64	7.33
06/15/2000	130000	11.3	1	29.16	0.1	46.9	3.61	7.39
06/15/2000	131500	11.4	1	28.5	0	52.4	4.09	7.07
06/15/2000	133000	11.4	1	29	0	55.8	4.31	6.9
06/15/2000	134500	11.1	1	28.74	0	55.4	4.3	6.91
06/15/2000	140000	11.4	1	28.98	0.1	65.2	5.04	6.51
06/15/2000	141500	11.2	1	28.73	0	58.5	4.54	6.27
06/15/2000	143000	11.2	1	28.19	0	67	5.25	6.27
06/15/2000	144500	11.4	1	28.78	0	59.5	4.61	6.43
06/15/2000	150000	11.3	1	29.68	0	47	3.59	7.02
06/15/2000	151500	11.3	1	30.61	0	62.2	4.68	7.43
06/15/2000	153000	11.3	1	31.25	0.1	49.6	3.68	7.35
06/15/2000	154500	11.4	1	30.78	0	51.1	3.83	7.23
06/15/2000	160000	11.3	1	30.38	0	55.3	4.17	7.38
06/15/2000	161500	11.4	1	30.17	0	49.2	3.73	7.43
06/15/2000	163000	11.4	1	29.99	0	48.5	3.68	7.49
06/15/2000	164500	11.4	1	29.81	0	51.5	3.92	7.55
06/15/2000	170000	11.3	1	29.63	0	58.6	4.48	7.64
06/15/2000	171500	11.4	1	29.45	0	58.6	4.49	7.69
06/15/2000	173000	11.4	1	29.29	0	60.8	4.67	7.73
06/15/2000	174500	11.4	1	29.14	0	59.3	4.57	7.8
06/15/2000	180000	11.3	1	28.98	0	63.7	4.92	7.83
06/15/2000	181500	11.4	1	28.8	0.1	58.4	4.53	7.87
06/15/2000	183000	11.3	1	28.6	0	63.7	4.96	7.86
06/15/2000	184500	11.4	1	28.4	0.1	68.7	5.36	7.9
06/15/2000	190000	11.3	1	28.21	0	70	5.48	7.89
06/15/2000	191500	11.3	1	28.01	0	66.4	5.22	7.86
06/15/2000	193000	11.3	1	27.82	0	72.5	5.71	7.88
06/15/2000	194500	11.3	1	27.65	0	62.9	4.98	7.91
06/15/2000	200000	11.4	1	27.49	0	71.3	5.66	7.93

SITE 5 MARSH BAYOU AT WELCOME ROAD



Marsh Bayou
Site 5
06/13/00

DataSonde 4a 37754
Log File Name : MARSHB5
Setup Date (MMDDYY) : 061200
Setup Time (HHMMSS) : 115317
Starting Date (MMDDYY) : 061300
Starting Time (HHMMSS) : 010000
Stopping Date (MMDDYY) : 061800
Stopping Time (HHMMSS) : 000000
Interval (HHMMSS) : 001500
Sensor warmup (HHMMSS) : 000200
Circltr warmup (HHMMSS) : 000200

Date MMDDYY	Time HHMMSS	IBatt Volts	Circ Status	Temp øC	SpCond æS/cm	DO% Sat	DO mg/l	pH Units
06/13/2000	170000	11.4	1	26.75	250	27.6	2.22	6.98
06/13/2000	171500	11.5	1	26.78	250	24.3	1.95	6.97
06/13/2000	173000	11.4	1	26.73	250	25.7	2.06	6.98
06/13/2000	174500	11.5	1	26.69	250	26.6	2.14	6.98
06/13/2000	180000	11.4	1	26.71	250	26	2.09	6.98
06/13/2000	181500	11.4	1	26.65	250	25.4	2.04	6.97
06/13/2000	183000	11.5	1	26.63	250	25.1	2.02	6.98
06/13/2000	184500	11.5	1	26.58	250	24.5	1.98	6.97
06/13/2000	190000	11.4	1	26.57	250	24.5	1.97	6.97
06/13/2000	191500	11.4	1	26.54	249	23.7	1.91	6.97
06/13/2000	193000	11.4	1	26.53	249	23.5	1.9	6.98
06/13/2000	194500	11.4	1	26.5	249	22.8	1.84	6.98
06/13/2000	200000	11.4	1	26.47	249	23.3	1.88	6.98
06/13/2000	201500	11.4	1	26.43	249	19.4	1.57	6.98
06/13/2000	203000	11.4	1	26.41	249	23.1	1.87	6.99
06/13/2000	204500	11.4	1	26.36	249	22.9	1.85	6.99
06/13/2000	210000	11.4	1	26.32	249	21.1	1.71	6.99
06/13/2000	211500	11.4	1	26.27	249	22.5	1.83	6.99
06/13/2000	213000	11.5	1	26.21	249	21.8	1.77	6.98
06/13/2000	214500	11.4	1	26.17	249	22.1	1.79	6.98
06/13/2000	220000	11.4	1	26.12	249	22.2	1.8	6.99
06/13/2000	221500	11.5	1	26.08	249	23.7	1.92	6.98
06/13/2000	223000	11.4	1	26.04	249	22.9	1.86	6.98
06/13/2000	224500	11.5	1	26	249	22.8	1.85	6.98
06/13/2000	230000	11.4	1	25.97	249	22.7	1.85	6.97
06/13/2000	231500	11.4	1	25.94	248	21.4	1.75	6.97
06/13/2000	233000	11.4	1	25.9	248	22	1.79	6.98
06/13/2000	234500	11.4	1	25.86	248	21.4	1.75	6.97
06/14/2000	0	11.4	1	25.82	248	21.2	1.73	6.97
06/14/2000	1500	11.4	1	25.79	247	21.4	1.75	6.98
06/14/2000	3000	11.4	1	25.75	247	22	1.8	6.98
06/14/2000	4500	11.4	1	25.71	247	21.4	1.75	6.98
06/14/2000	10000	11.4	1	25.67	246	21.5	1.76	6.98
06/14/2000	11500	11.4	1	25.63	246	21.4	1.76	6.98
06/14/2000	13000	11.4	1	25.59	246	21.7	1.78	6.98
06/14/2000	14500	11.4	1	25.56	246	21.6	1.77	6.98
06/14/2000	20000	11.4	1	25.52	246	21.4	1.76	6.98
06/14/2000	21500	11.4	1	25.48	246	21.1	1.73	6.98
06/14/2000	23000	11.4	1	25.45	246	21.3	1.75	6.98
06/14/2000	24500	11.4	1	25.41	246	20.7	1.7	6.98
06/14/2000	30000	11.4	1	25.37	245	21.1	1.73	6.98
06/14/2000	31500	11.4	1	25.34	245	20.6	1.7	6.98
06/14/2000	33000	11.4	1	25.3	245	20.2	1.67	6.98
06/14/2000	34500	11.4	1	25.27	245	20.2	1.67	6.98
06/14/2000	40000	11.4	1	25.24	245	20.2	1.67	6.98
06/14/2000	41500	11.4	1	25.2	245	20.1	1.66	6.98
06/14/2000	43000	11.4	1	25.16	245	19.7	1.63	6.98
06/14/2000	44500	11.4	1	25.13	245	19.8	1.64	6.98
06/14/2000	50000	11.4	1	25.09	245	19.6	1.63	6.98
06/14/2000	51500	11.4	1	25.05	245	19.3	1.6	6.97
06/14/2000	53000	11.4	1	25.02	245	19.1	1.58	6.98
06/14/2000	54500	11.4	1	24.99	245	19	1.57	6.97
06/14/2000	60000	11.4	1	24.95	245	18.8	1.56	6.98
06/14/2000	61500	11.4	1	24.93	245	18.6	1.55	6.97
06/14/2000	63000	11.4	1	24.91	244	18.4	1.53	6.97
06/14/2000	64500	11.4	1	24.88	244	17.8	1.48	6.97
06/14/2000	70000	11.4	1	24.86	245	17.3	1.44	6.97
06/14/2000	71500	11.4	1	24.85	244	17.5	1.45	6.97
06/14/2000	73000	11.4	1	24.83	244	17.4	1.45	6.97
06/14/2000	74500	11.4	1	24.83	244	17.1	1.43	6.97
06/14/2000	80000	11.4	1	24.83	244	16.8	1.4	6.97
06/14/2000	81500	11.4	1	24.83	244	16.5	1.38	6.97
06/14/2000	83000	11.4	1	24.84	244	15.7	1.31	6.97

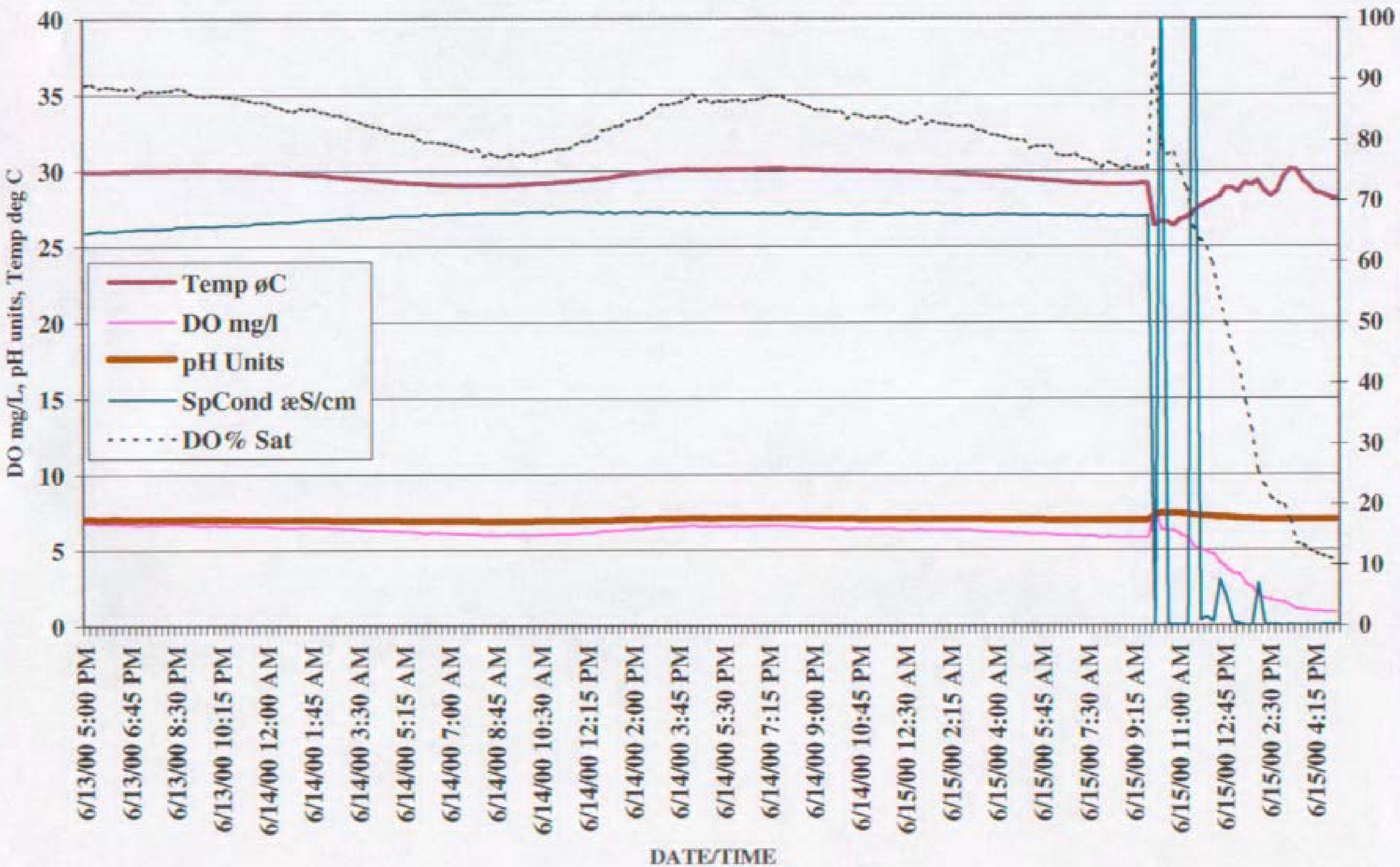
Marsh Bayou
Site 5
06/13/00

06/14/2000	84500	11.4	1	24.84	244	15.2	1.27	6.96
06/14/2000	90000	11.4	1	24.85	244	15.5	1.29	6.96
06/14/2000	91500	11.4	1	24.87	244	15.3	1.27	6.97
06/14/2000	93000	11.4	1	24.88	244	14.9	1.24	6.97
06/14/2000	94500	11.4	1	24.93	244	14.9	1.24	6.97
06/14/2000	100000	11.4	1	24.93	244	14.9	1.23	6.97
06/14/2000	101500	11.4	1	24.95	244	15.2	1.26	6.96
06/14/2000	103000	11.4	1	24.98	244	14.2	1.18	6.96
06/14/2000	104500	11.4	1	25.01	244	14.3	1.19	6.96
06/14/2000	110000	11.4	1	25.08	244	14.5	1.2	6.97
06/14/2000	111500	11.4	1	25.09	244	14.4	1.19	6.96
06/14/2000	113000	11.4	1	25.07	244	14.1	1.17	6.96
06/14/2000	114500	11.4	1	25.27	244	14.6	1.2	6.96
06/14/2000	120000	11.4	1	25.38	244	15.3	1.26	6.97
06/14/2000	121500	11.4	1	25.58	244	17	1.4	6.98
06/14/2000	123000	11.4	1	25.6	243	15.5	1.27	6.97
06/14/2000	124500	11.4	1	25.58	244	14.7	1.21	6.97
06/14/2000	130000	11.4	1	25.89	243	18.9	1.54	6.99
06/14/2000	131500	11.4	1	25.98	243	18.9	1.54	7
06/14/2000	133000	11.4	1	26.19	243	21.2	1.72	7.01
06/14/2000	134500	11.4	1	26.27	243	21.5	1.74	7.02
06/14/2000	140000	11.3	1	26.55	242	19.3	1.56	7.03
06/14/2000	141500	11.3	1	26.47	243	25.2	2.03	7.01
06/14/2000	143000	11.4	1	26.92	242	23.4	1.87	7.05
06/14/2000	144500	11.4	1	26.89	242	27.6	2.21	7.04
06/14/2000	150000	11.4	1	27.02	242	30.5	2.44	7.05
06/14/2000	151500	11.4	1	26.98	242	29.5	2.36	7.04
06/14/2000	153000	11.4	1	27.11	242	31.2	2.49	7.04
06/14/2000	154500	11.4	1	27.25	242	26.8	2.14	7.05
06/14/2000	160000	11.4	1	27.2	242	28.4	2.26	7.04
06/14/2000	161500	11.4	1	27.16	242	28.8	2.3	7.05
06/14/2000	163000	11.4	1	27.26	241	32.4	2.58	7.05
06/14/2000	164500	11.4	1	27.23	241	28.9	2.3	7.05
06/14/2000	170000	11.4	1	27.25	241	28.2	2.24	7.05
06/14/2000	171500	11.3	1	27.29	241	30.2	2.4	7.05
06/14/2000	173000	11.3	1	27.2	241	28.9	2.3	7.04
06/14/2000	174500	11.4	1	27.17	241	27	2.16	7.05
06/14/2000	180000	11.4	1	27.21	241	26.8	2.13	7.05
06/14/2000	181500	11.4	1	27.15	241	27.3	2.18	7.05
06/14/2000	183000	11.4	1	27.17	240	26.6	2.12	7.05
06/14/2000	184500	11.4	1	27.11	241	26.2	2.09	7.04
06/14/2000	190000	11.4	1	27.07	241	27	2.16	7.04
06/14/2000	191500	11.4	1	27.06	240	28.1	2.24	7.04
06/14/2000	193000	11.4	1	27.01	240	26.5	2.12	7.04
06/14/2000	194500	11.4	1	26.97	240	27.6	2.21	7.05
06/14/2000	200000	11.4	1	26.93	240	25.5	2.04	7.04
06/14/2000	201500	11.3	1	26.9	240	26.4	2.11	7.05
06/14/2000	203000	11.4	1	26.88	240	22.6	1.82	7.05
06/14/2000	204500	11.4	1	26.8	240	23.3	1.87	7.05
06/14/2000	210000	11.3	1	26.75	240	22.9	1.84	7.04
06/14/2000	211500	11.4	1	26.69	241	23.4	1.88	7.03
06/14/2000	213000	11.4	1	26.64	241	23.4	1.88	7.03
06/14/2000	214500	11.4	1	26.61	240	24	1.93	7.03
06/14/2000	220000	11.4	1	26.56	240	21.9	1.76	7.03
06/14/2000	221500	11.3	1	26.51	241	23	1.86	7.02
06/14/2000	223000	11.3	1	26.46	240	20	1.62	7.02
06/14/2000	224500	11.4	1	26.43	241	19.2	1.55	7.01
06/14/2000	230000	11.3	1	26.39	240	20.8	1.68	7.01
06/14/2000	231500	11.3	1	26.35	240	20.4	1.65	7.01
06/14/2000	233000	11.4	1	26.3	241	19.2	1.55	7
06/14/2000	234500	11.4	1	26.26	240	21.2	1.72	7
06/15/2000	0	11.3	1	26.22	240	21.1	1.71	7
06/15/2000	1500	11.3	1	26.17	241	18.5	1.5	6.99
06/15/2000	3000	11.4	1	26.12	240	21.5	1.75	7
06/15/2000	4500	11.4	1	26.08	240	22.1	1.8	7
06/15/2000	10000	11.4	1	26.04	240	22	1.79	6.99
06/15/2000	11500	11.3	1	26	240	21.2	1.73	7
06/15/2000	13000	11.4	1	25.96	240	20.6	1.68	6.99
06/15/2000	14500	11.4	1	25.93	240	21.1	1.72	6.99
06/15/2000	20000	11.3	1	25.89	240	20.7	1.69	7
06/15/2000	21500	11.4	1	25.84	240	20.4	1.67	6.99
06/15/2000	23000	11.3	1	25.8	240	19.7	1.61	6.99
06/15/2000	24500	11.4	1	25.76	239	19.8	1.62	6.99
06/15/2000	30000	11.4	1	25.72	240	19.4	1.59	6.99
06/15/2000	31500	11.3	1	25.67	239	19.4	1.59	6.99
06/15/2000	33000	11.4	1	25.63	239	18.4	1.51	6.99
06/15/2000	34500	11.3	1	25.58	239	18.5	1.52	6.98
06/15/2000	40000	11.3	1	25.54	239	18.5	1.52	6.99

06/15/2000	41500	11.3	1	25.5	239	18.6	1.52	6.99
06/15/2000	43000	11.3	1	25.46	239	18.2	1.5	6.99
06/15/2000	44500	11.4	1	25.41	239	17.5	1.44	6.98
06/15/2000	50000	11.4	1	25.38	239	17.6	1.45	6.98
06/15/2000	51500	11.4	1	25.33	239	17	1.4	6.98
06/15/2000	53000	11.3	1	25.29	239	17.1	1.41	6.98
06/15/2000	54500	11.4	1	25.25	239	16.8	1.39	6.98
06/15/2000	60000	11.4	1	25.21	239	16.7	1.38	6.98
06/15/2000	61500	11.3	1	25.17	239	16.4	1.36	6.98
06/15/2000	63000	11.4	1	25.13	239	16.3	1.35	6.98
06/15/2000	64500	11.3	1	25.09	239	16.4	1.36	6.98
06/15/2000	70000	11.4	1	25.07	239	16	1.32	6.98
06/15/2000	71500	11.4	1	25.03	238	15.7	1.3	6.98
06/15/2000	73000	11.3	1	25.02	238	15.5	1.29	6.98
06/15/2000	74500	11.3	1	25.01	238	14.9	1.23	6.98
06/15/2000	80000	11.3	1	24.99	238	15.1	1.25	6.98
06/15/2000	81500	11.4	1	24.99	238	14.8	1.23	6.98
06/15/2000	83000	11.4	1	24.99	238	14.8	1.22	6.97
06/15/2000	84500	11.3	1	25	238	13.9	1.15	6.97
06/15/2000	90000	11.3	1	24.99	238	13.8	1.14	6.97
06/15/2000	91500	11.3	1	25.01	238	13.2	1.1	6.97
06/15/2000	93000	11.3	1	25.02	238	13.1	1.09	6.97
06/15/2000	94500	11.3	1	25.04	238	13	1.07	6.97
06/15/2000	100000	11.3	1	25.07	238	13.3	1.1	6.97
06/15/2000	101500	11.3	1	25.12	238	13.5	1.12	6.97
06/15/2000	103000	11.3	1	25.14	238	13	1.07	6.97
06/15/2000	104500	11.3	1	25.18	238	12.9	1.06	6.97
06/15/2000	110000	11.3	1	25.25	238	13.8	1.14	6.98
06/15/2000	111500	11.3	1	25.31	238	13.8	1.14	6.98
06/15/2000	113000	11.3	1	28.6		97.7	7.87	7.95
06/15/2000	114500	11.3	1	27.03	0.1	97.7	7.81	8.21
06/15/2000	120000	11.4	1	27.36	0.1	97.5	7.75	8.2
06/15/2000	121500	11.2	1	27.19	0.1	98.1	7.82	8.47
06/15/2000	123000	11.4	1	27.53	0.3	97.6	7.74	8.22
06/15/2000	124500	11.4	1	28.31	0.3	96.5	7.54	8.19
06/15/2000	130000	11.1	1	28.47	0.1	97.3	7.59	8.35
06/15/2000	131500	11	1	27.95	0.1	97.7	7.68	8.22
06/15/2000	133000	11.4	1	28.01	0.1	97.2	7.64	8.22
06/15/2000	134500	11.3	1	27.99	0.3	97.1	7.64	8.33
06/15/2000	140000	10.8	1	28.06	0.1	96.6	7.58	8.2
06/15/2000	141500	11.4	1	27.86	0.3	96.8	7.62	8.19
06/15/2000	143000	11.2	1	27.64	0.1	96.3	7.62	8.13
06/15/2000	144500	11.1	1	27.7	0.1	96.1	7.59	8.12
06/15/2000	150000	11.3	1	28.06	0.1	95.5	7.5	8.1
06/15/2000	151500	10.9	1	28.68		95.1	7.38	8.07
06/15/2000	153000	11.3	1	29.19	0.3	95.2	7.33	7.98
06/15/2000	154500	11.4	1	28.68	0.3	96.7	7.51	7.93
06/15/2000	160000	11.3	1	28.28	0.3	97	7.59	7.92
06/15/2000	161500	11.3	1	27.96	0.1	97.1	7.64	7.92
06/15/2000	163000	11.4	1	27.64	0.1	97.1	7.68	7.92
06/15/2000	164500	11.3	1	27.4	0.1	97.1	7.72	7.92
06/15/2000	170000	11.4	1	27.15	0.1	97.3	7.76	7.92

SITE 2 MARSH BAYOU UPSTREAM OF THE CONFLUENCE WITH THE CALCASIEU RIVER

(Later determined to be on the Calcasieu River downstream of the confluence with Marsh Bayou, based upon GPS data)



Marsh Bayou
Site 2
06/13/00

DataSonde 4a 37758
Log File Name : MARSHB2
Setup Date (MMDDYY) : 061200
Setup Time (HHMMSS) : 114458
Starting Date (MMDDYY) : 061300
Starting Time (HHMMSS) : 010000
Stopping Date (MMDDYY) : 061800
Stopping Time (HHMMSS) : 000000
Interval (HHMMSS) : 001500
Sensor warmup (HHMMSS) : 000200
Circltr warmup (HHMMSS) : 000200

Date MMDDYY	Time HHMMSS	IBatt Volts	Circ Status	Temp øC	SpCond æS/cm	DO% Sat	DO mg/l	pH Units
06/13/2000	170000	11.6	1	29.9	64.8	89	6.77	7.03
06/13/2000	171500	11.5	1	29.9	64.9	89.3	6.79	7.03
06/13/2000	173000	11.4	1	29.92	65.1	88.5	6.73	7.02
06/13/2000	174500	11.5	1	29.93	65	88.8	6.74	7.02
06/13/2000	180000	11.5	1	29.95	65	88.8	6.74	7.03
06/13/2000	181500	11.6	1	29.96	65.1	88.5	6.72	7.03
06/13/2000	183000	11.5	1	29.96	65.2	88.3	6.7	7.02
06/13/2000	184500	11.6	1	29.97	65.2	88.6	6.72	7.02
06/13/2000	190000	11.4	1	29.97	65.4	87.2	6.62	7.02
06/13/2000	191500	11.5	1	29.97	65.4	87.9	6.67	7.02
06/13/2000	193000	11.4	1	29.98	65.4	88.2	6.69	7.01
06/13/2000	194500	11.4	1	29.99	65.4	88	6.67	7.01
06/13/2000	200000	11.6	1	30	65.5	88.2	6.69	7.02
06/13/2000	201500	11.6	1	30.02	65.5	88.2	6.69	7.02
06/13/2000	203000	11.5	1	30.02	65.7	88.5	6.71	7.02
06/13/2000	204500	11.4	1	30.02	65.7	88.4	6.7	7.02
06/13/2000	210000	11.5	1	30.02	65.8	87.8	6.66	7.02
06/13/2000	211500	11.5	1	30.02	65.8	87.4	6.63	7.02
06/13/2000	213000	11.5	1	30.02	65.9	87.2	6.61	7.01
06/13/2000	214500	11.4	1	30.02	65.8	87.3	6.62	7.01
06/13/2000	220000	11.5	1	30.02	65.9	87.4	6.63	7.01
06/13/2000	221500	11.5	1	30.01	66	87.2	6.61	7.01
06/13/2000	223000	11.5	1	29.99	66	87.1	6.61	7
06/13/2000	224500	11.5	1	29.99	66	87	6.6	6.99
06/13/2000	230000	11.5	1	29.98	66.1	86.9	6.6	7
06/13/2000	231500	11.5	1	29.96	66.1	86.6	6.57	6.99
06/13/2000	233000	11.5	1	29.95	66.3	86.3	6.55	6.99
06/13/2000	234500	11.5	1	29.93	66.4	86.3	6.56	6.98
06/14/2000	0	11.5	1	29.91	66.4	86.2	6.55	6.98
06/14/2000	1500	11.5	1	29.88	66.5	85.7	6.52	6.98
06/14/2000	3000	11.5	1	29.86	66.6	85.4	6.49	6.98
06/14/2000	4500	11.4	1	29.84	66.5	85	6.47	6.97
06/14/2000	10000	11.5	1	29.81	66.6	84.7	6.45	6.97
06/14/2000	11500	11.5	1	29.78	66.7	85.3	6.5	6.97
06/14/2000	13000	11.5	1	29.75	66.8	85	6.48	6.97
06/14/2000	14500	11.5	1	29.72	66.8	85.2	6.5	6.97
06/14/2000	20000	11.5	1	29.69	66.9	84.7	6.46	6.97
06/14/2000	21500	11.5	1	29.66	66.9	84.6	6.46	6.97
06/14/2000	23000	11.5	1	29.62	67	84.1	6.42	6.96
06/14/2000	24500	11.5	1	29.58	67.1	84.2	6.44	6.96
06/14/2000	30000	11.4	1	29.55	67.1	83.6	6.39	6.96
06/14/2000	31500	11.5	1	29.51	67.2	83.5	6.39	6.96
06/14/2000	33000	11.4	1	29.47	67.1	83.1	6.36	6.95
06/14/2000	34500	11.5	1	29.42	67.2	82.6	6.33	6.95
06/14/2000	40000	11.4	1	29.39	67.3	82.3	6.31	6.94
06/14/2000	41500	11.4	1	29.35	67.3	82.1	6.3	6.94
06/14/2000	43000	11.4	1	29.31	67.4	81.8	6.28	6.93
06/14/2000	44500	11.4	1	29.28	67.5	81.3	6.24	6.93
06/14/2000	50000	11.4	1	29.24	67.5	81.2	6.24	6.93
06/14/2000	51500	11.4	1	29.21	67.5	80.9	6.22	6.92
06/14/2000	53000	11.5	1	29.18	67.5	80.9	6.22	6.92
06/14/2000	54500	11.4	1	29.16	67.5	80.3	6.18	6.92
06/14/2000	60000	11.4	1	29.14	67.6	79.6	6.13	6.91
06/14/2000	61500	11.4	1	29.11	67.6	79.7	6.14	6.91
06/14/2000	63000	11.5	1	29.08	67.7	79.6	6.14	6.91
06/14/2000	64500	11.5	1	29.06	67.8	79.5	6.13	6.91
06/14/2000	70000	11.4	1	29.04	67.8	79.2	6.11	6.9
06/14/2000	71500	11.4	1	29.02	67.9	79	6.09	6.9
06/14/2000	73000	11.4	1	29.01	67.9	78.7	6.07	6.9
06/14/2000	74500	11.4	1	29	67.9	78.2	6.04	6.9
06/14/2000	80000	11.4	1	29	68	78.4	6.05	6.9
06/14/2000	81500	11.5	1	29	68	77.3	5.97	6.89

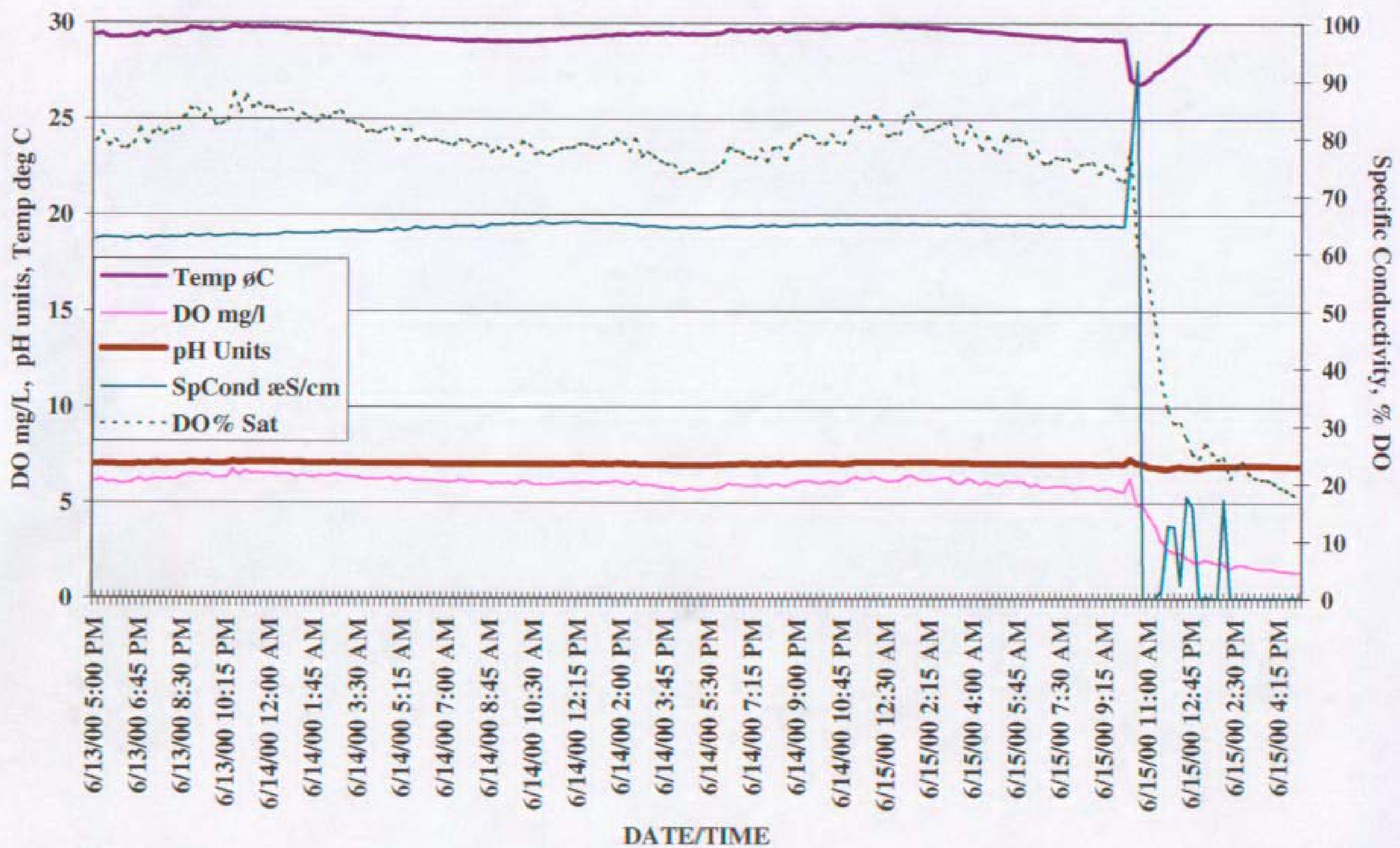
Marsh Bayou
Site 2
06/13/00

06/14/2000	83000	11.5	1	29	68	77.9	6.01	6.89
06/14/2000	84500	11.4	1	29.01	68	77.5	5.98	6.89
06/14/2000	90000	11.4	1	29.02	68	77.2	5.96	6.89
06/14/2000	91500	11.4	1	29.04	68	77.8	6	6.89
06/14/2000	93000	11.4	1	29.07	68	77.4	5.97	6.89
06/14/2000	94500	11.5	1	29.1	68.1	77.9	6	6.89
06/14/2000	100000	11.4	1	29.12	68.1	77.4	5.96	6.89
06/14/2000	101500	11.4	1	29.14	68.1	77.8	5.97	6.9
06/14/2000	103000	11.4	1	29.16	68.2	77.9	6	6.9
06/14/2000	104500	11.4	1	29.19	68	78.1	6.01	6.9
06/14/2000	110000	11.5	1	29.22	68.1	78.5	6.03	6.9
06/14/2000	111500	11.5	1	29.25	68.1	78.5	6.03	6.91
06/14/2000	113000	11.4	1	29.29	68.2	78.6	6.04	6.9
06/14/2000	114500	11.4	1	29.31	68.2	79.3	6.09	6.92
06/14/2000	120000	11.4	1	29.37	68.2	79.9	6.13	6.93
06/14/2000	121500	11.4	1	29.39	68.1	79.8	6.12	6.93
06/14/2000	123000	11.5	1	29.43	68.1	80.4	6.16	6.93
06/14/2000	124500	11.4	1	29.51	68	81.6	6.24	6.95
06/14/2000	130000	11.4	1	29.55	68.2	81.8	6.26	6.95
06/14/2000	131500	11.4	1	29.61	68	82.3	6.29	6.97
06/14/2000	133000	11.4	1	29.66	68.1	82.4	6.29	6.98
06/14/2000	134500	11.4	1	29.75	68.1	83.2	6.34	7
06/14/2000	140000	11.5	1	29.8	68.2	83.4	6.35	7
06/14/2000	141500	11.4	1	29.85	68	83.6	6.36	7.01
06/14/2000	143000	11.4	1	29.9	68.2	84.4	6.41	7.02
06/14/2000	144500	11.5	1	29.96	68.1	85	6.45	7.03
06/14/2000	150000	11.4	1	29.97	68.1	85.8	6.51	7.04
06/14/2000	151500	11.4	1	30.01	68	85.8	6.51	7.05
06/14/2000	153000	11.4	1	30.02	68.2	86	6.52	7.04
06/14/2000	154500	11.4	1	30.05	68	86.2	6.53	7.06
06/14/2000	160000	11.4	1	30.08	68.1	86.7	6.57	7.07
06/14/2000	161500	11.4	1	30.06	68	87.4	6.62	7.08
06/14/2000	163000	11.4	1	30.04	68	86.3	6.54	7.08
06/14/2000	164500	11.4	1	30.05	68.1	86.8	6.58	7.07
06/14/2000	170000	11.4	1	30.04	68	86.1	6.53	7.06
06/14/2000	171500	11.4	1	30.06	68	86.5	6.55	7.07
06/14/2000	173000	11.4	1	30.07	68	86.3	6.53	7.07
06/14/2000	174500	11.4	1	30.07	68	86.5	6.55	7.07
06/14/2000	180000	11.4	1	30.08	68	86.7	6.57	7.07
06/14/2000	181500	11.4	1	30.08	68	86.3	6.53	7.07
06/14/2000	183000	11.4	1	30.09	68	86.6	6.56	7.07
06/14/2000	184500	11.4	1	30.11	67.9	86.6	6.56	7.08
06/14/2000	190000	11.4	1	30.13	68	86.9	6.58	7.09
06/14/2000	191500	11.4	1	30.14	67.9	87.4	6.61	7.08
06/14/2000	193000	11.4	1	30.14	67.9	87.2	6.6	7.09
06/14/2000	194500	11.4	1	30.14	67.9	87.3	6.6	7.09
06/14/2000	200000	11.4	1	30.1	68.1	86.5	6.55	7.08
06/14/2000	201500	11.4	1	30.1	67.9	86.4	6.54	7.07
06/14/2000	203000	11.4	1	30.08	67.9	86	6.51	7.06
06/14/2000	204500	11.4	1	30.07	68	85.6	6.48	7.06
06/14/2000	210000	11.4	1	30.05	68	85.1	6.45	7.05
06/14/2000	211500	11.4	1	30.04	67.9	85	6.44	7.05
06/14/2000	213000	11.4	1	30.02	67.8	84.9	6.44	7.04
06/14/2000	214500	11.4	1	30.01	67.8	84.7	6.42	7.04
06/14/2000	220000	11.4	1	30	67.8	84.5	6.41	7.04
06/14/2000	221500	11.4	1	29.99	67.7	83.5	6.33	7.04
06/14/2000	223000	11.4	1	29.99	67.8	84.4	6.4	7.03
06/14/2000	224500	11.4	1	29.98	67.8	84.1	6.39	7.02
06/14/2000	230000	11.4	1	29.97	67.8	83.6	6.35	7.02
06/14/2000	231500	11.4	1	29.96	67.8	83.9	6.37	7.02
06/14/2000	233000	11.4	1	29.95	67.7	83.6	6.35	7.02
06/14/2000	234500	11.4	1	29.95	67.7	83.9	6.37	7.02
06/15/2000	0	11.4	1	29.94	67.8	83.5	6.34	7.01
06/15/2000	1500	11.4	1	29.93	67.8	83	6.31	7.01
06/15/2000	3000	11.4	1	29.93	67.9	82.6	6.27	7.01
06/15/2000	4500	11.4	1	29.91	67.9	83.1	6.32	7.01
06/15/2000	10000	11.4	1	29.89	67.8	83.7	6.36	7.02
06/15/2000	11500	11.4	1	29.89	67.8	82.5	6.27	7.01
06/15/2000	13000	11.4	1	29.86	67.9	83.2	6.33	7
06/15/2000	14500	11.4	1	29.84	67.9	82.7	6.29	7.01
06/15/2000	20000	11.4	1	29.82	67.7	82.7	6.3	7.01
06/15/2000	21500	11.4	1	29.8	67.7	82.5	6.28	7
06/15/2000	23000	11.3	1	29.77	67.7	82.3	6.27	7
06/15/2000	24500	11.4	1	29.74	67.5	82.3	6.27	7
06/15/2000	30000	11.3	1	29.71	67.7	82.4	6.28	7.01
06/15/2000	31500	11.4	1	29.69	67.6	81.7	6.24	7
06/15/2000	33000	11.4	1	29.66	67.6	81.5	6.22	7
06/15/2000	34500	11.4	1	29.63	67.7	80.8	6.17	6.99

Marsh Bayou
Site 2
06/13/00

06/15/2000	40000	11.4	1	29.6	67.8	80.8	6.17	6.99
06/15/2000	41500	11.4	1	29.56	67.7	80.6	6.16	6.99
06/15/2000	43000	11.4	1	29.53	67.7	80.2	6.14	6.99
06/15/2000	44500	11.4	1	29.49	67.7	80.1	6.13	6.98
06/15/2000	50000	11.4	1	29.46	67.6	79.8	6.11	6.98
06/15/2000	51500	11.4	1	29.42	67.6	78.6	6.03	6.98
06/15/2000	53000	11.3	1	29.38	67.6	79	6.06	6.97
06/15/2000	54500	11.4	1	29.35	67.7	78.9	6.05	6.97
06/15/2000	60000	11.4	1	29.32	67.6	78.8	6.05	6.96
06/15/2000	61500	11.4	1	29.29	67.5	77.7	5.96	6.95
06/15/2000	63000	11.3	1	29.26	67.6	77.5	5.96	6.95
06/15/2000	64500	11.4	1	29.23	67.5	77.4	5.95	6.95
06/15/2000	70000	11.4	1	29.2	67.5	77.7	5.98	6.94
06/15/2000	71500	11.4	1	29.17	67.5	76.9	5.92	6.94
06/15/2000	73000	11.4	1	29.15	67.4	76.8	5.91	6.94
06/15/2000	74500	11.4	1	29.13	67.4	76.3	5.88	6.94
06/15/2000	80000	11.4	1	29.12	67.6	75.5	5.82	6.93
06/15/2000	81500	11.4	1	29.1	67.4	76.3	5.88	6.93
06/15/2000	83000	11.4	1	29.1	67.4	75.9	5.85	6.93
06/15/2000	84500	11.4	1	29.1	67.5	75.2	5.79	6.93
06/15/2000	90000	11.4	1	29.1	67.4	75.7	5.83	6.93
06/15/2000	91500	11.4	1	29.11	67.4	75.3	5.8	6.93
06/15/2000	93000	11.3	1	29.14	67.4	75.4	5.81	6.93
06/15/2000	94500	11.3	1	29.17	67.5	75.4	5.8	6.93
06/15/2000	100000	11.4	1	26.4	0	94.9	7.67	7.28
06/15/2000	101500	11.4	1	26.64	109.8	79	6.36	7.41
06/15/2000	103000	11.3	1	26.6	0.2	77.6	6.25	7.39
06/15/2000	104500	11.3	1	26.36	0.1	77.8	6.29	7.4
06/15/2000	110000	11	1	26.76	0.1	74.6	6	7.38
06/15/2000	111500	11.4	1	26.91	0.1	71.9	5.76	7.36
06/15/2000	113000	11.4	1	27.3	136.2	65.5	5.21	7.28
06/15/2000	114500	11.1	1	27.61	0.9	63.6	5.03	7.25
06/15/2000	120000	11.2	1	27.83	1.4	62.3	4.91	7.23
06/15/2000	121500	11.4	1	28.04	0.6	59.7	4.68	7.2
06/15/2000	123000	11.4	1	28.29	7.5	54.1	4.23	7.18
06/15/2000	124500	11.3	1	28.83	4.6	49.7	3.85	7.14
06/15/2000	130000	11.1	1	28.83	0.6	45.1	3.49	7.1
06/15/2000	131500	11.2	1	28.59	0.3	43.2	3.36	7.07
06/15/2000	133000	11.1	1	29.18	0	36.7	2.83	7.05
06/15/2000	134500	10.5	1	29.04	0.1	32.3	2.49	7.03
06/15/2000	140000	10.9	1	29.32	6.9	25.2	1.93	7
06/15/2000	141500	10.9	1	28.68	0.1	23.1	1.79	6.98
06/15/2000	143000	11.1	1	28.33	0.1	21.2	1.65	6.98
06/15/2000	144500	10.8	1	28.62	0.1	20.3	1.58	6.99
06/15/2000	150000	11.4	1	29.58	0	19.8	1.51	6.99
06/15/2000	151500	10.7	1	30.07	0.1	17.2	1.31	6.99
06/15/2000	153000	11.4	1	30.04	0	13.6	1.03	6.97
06/15/2000	154500	11.3	1	29.32	0	13.3	1.02	6.97
06/15/2000	160000	11.4	1	28.94	0	12.4	0.96	6.97
06/15/2000	161500	11.3	1	28.52	0	11.9	0.92	6.97
06/15/2000	163000	11.3	1	28.48	0.1	11.5	0.9	6.98
06/15/2000	164500	11.4	1	28.27	0.1	11.1	0.87	6.99
06/15/2000	170000	11.3	1	28.14	0.1	10.9	0.85	6.99

SITE 1 CALCASIEU RIVER DOWNSTREAM OF THE CONFLUENCE WITH MARSH BAYOU



Marsh Bayou
Site 1
06/13/00

DataSonde 4a 37757
Log File Name : MARSHB1
Setup Date (MMDDYY) : 061200
Setup Time (HHMMSS) : 113942
Starting Date (MMDDYY) : 061300
Starting Time (HHMMSS) : 010000
Stopping Date (MMDDYY) : 061800
Stopping Time (HHMMSS) : 000000
Interval (HHMMSS) : 001500
Sensor warmup (HHMMSS) : 000200
Circltr warmup (HHMMSS) : 000200

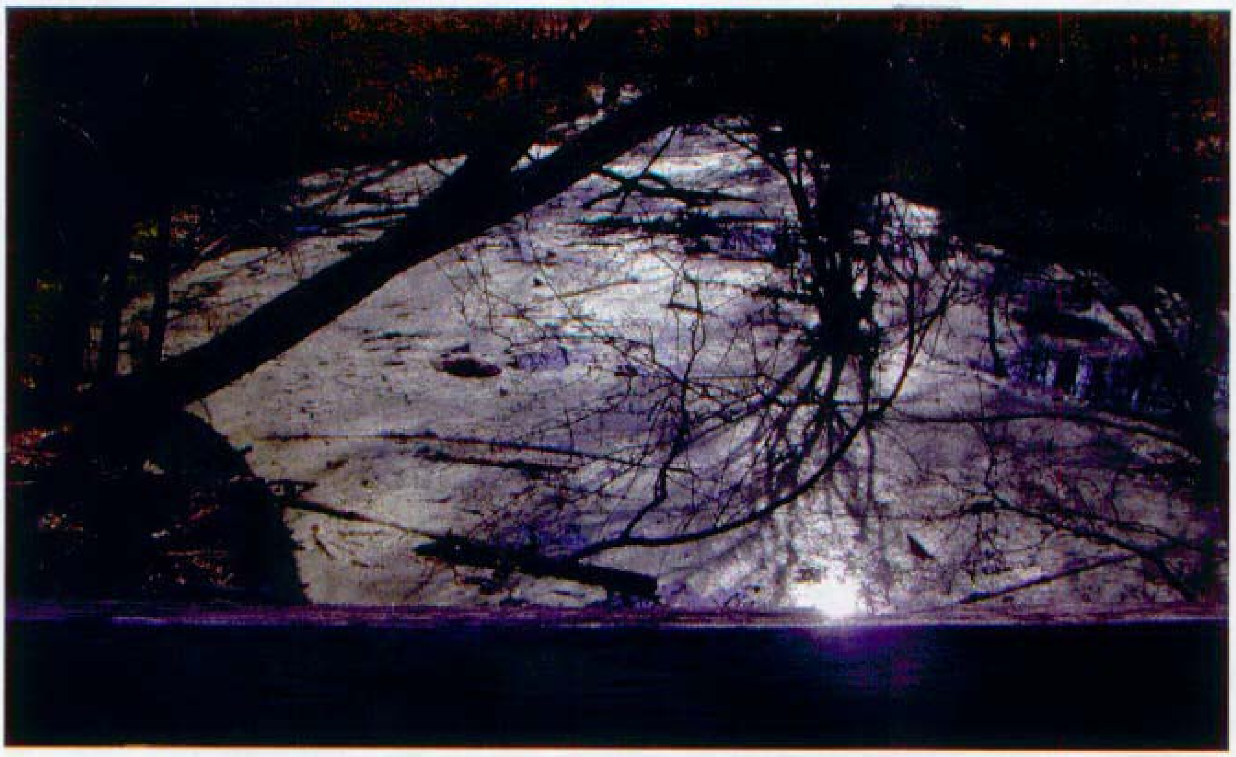
Date MMDDYY	Time HHMMSS	IBatt Volts	Circ Status	Temp øC	SpCond æS/cm	DO% Sat	DO mg/l	pH Units
06/13/2000	170000	11.5	1	29.39	62.5	79.6	6.1	7.01
06/13/2000	171500	11.5	1	29.44	62.7	81	6.21	7.04
06/13/2000	173000	11.5	1	29.25	62.7	78.7	6.05	7
06/13/2000	174500	11.4	1	29.28	62.6	79.5	6.11	7
06/13/2000	180000	11.5	1	29.29	62.6	78.3	6.01	6.99
06/13/2000	181500	11.5	1	29.26	62.4	78.2	6.01	6.98
06/13/2000	183000	11.5	1	29.31	62.6	79	6.07	6.98
06/13/2000	184500	11.5	1	29.44	62.7	81.7	6.26	7.02
06/13/2000	190000	11.4	1	29.3	62.4	79.1	6.08	7
06/13/2000	191500	11.6	1	29.49	62.7	80.8	6.19	7.03
06/13/2000	193000	11.4	1	29.53	62.8	81.6	6.24	7.05
06/13/2000	194500	11.7	1	29.43	62.6	80.7	6.19	7.01
06/13/2000	200000	11.5	1	29.51	62.8	81.5	6.24	7.03
06/13/2000	201500	11.6	1	29.56	62.7	81.4	6.22	7.04
06/13/2000	203000	11.5	1	29.6	62.7	83.7	6.4	7.04
06/13/2000	204500	11.6	1	29.75	63.2	85.1	6.48	7.09
06/13/2000	210000	11.6	1	29.74	62.9	84.9	6.47	7.08
06/13/2000	211500	11.5	1	29.68	63	83.8	6.39	7.06
06/13/2000	213000	11.6	1	29.72	63.2	85	6.48	7.08
06/13/2000	214500	11.6	1	29.64	62.9	82.4	6.29	7.03
06/13/2000	220000	11.5	1	29.66	63	82.4	6.29	7.04
06/13/2000	221500	11.5	1	29.74	63.1	83.1	6.34	7.06
06/13/2000	223000	11.6	1	29.87	63.2	87.8	6.68	7.14
06/13/2000	224500	11.5	1	29.75	63.1	84.4	6.43	7.08
06/13/2000	230000	11.5	1	29.82	63.1	87.4	6.65	7.12
06/13/2000	231500	11.5	1	29.77	63	85.3	6.5	7.11
06/13/2000	233000	11.4	1	29.78	63.1	86.1	6.56	7.12
06/13/2000	234500	11.5	1	29.75	63.1	85.2	6.5	7.11
06/14/2000	0	11.6	1	29.78	63.2	85.5	6.52	7.11
06/14/2000	1500	11.6	1	29.76	63.2	84.7	6.45	7.1
06/14/2000	3000	11.5	1	29.75	63.5	84.8	6.47	7.1
06/14/2000	4500	11.6	1	29.72	63.5	84.9	6.47	7.09
06/14/2000	10000	11.5	1	29.7	63.4	83.1	6.34	7.08
06/14/2000	11500	11.5	1	29.68	63.4	84.3	6.43	7.08
06/14/2000	13000	11.5	1	29.67	63.4	83.6	6.38	7.07
06/14/2000	14500	11.5	1	29.63	63.4	82.9	6.33	7.06
06/14/2000	20000	11.5	1	29.64	63.6	84	6.42	7.07
06/14/2000	21500	11.6	1	29.61	63.5	83.4	6.37	7.07
06/14/2000	23000	11.5	1	29.61	63.8	84.3	6.44	7.08
06/14/2000	24500	11.4	1	29.58	63.8	84.5	6.46	7.06
06/14/2000	30000	11.4	1	29.54	63.8	82.9	6.34	7.05
06/14/2000	31500	11.6	1	29.52	64	82.8	6.34	7.05
06/14/2000	33000	11.6	1	29.49	63.7	82.1	6.29	7.05
06/14/2000	34500	11.6	1	29.48	63.7	81.1	6.21	7.04
06/14/2000	40000	11.5	1	29.43	63.7	81.3	6.23	7.03
06/14/2000	41500	11.4	1	29.4	63.8	80.9	6.2	7.03
06/14/2000	43000	11.6	1	29.39	64.1	81.5	6.25	7.03
06/14/2000	44500	11.6	1	29.35	64	81.8	6.28	7.03
06/14/2000	50000	11.6	1	29.32	64.3	79.6	6.12	7.02
06/14/2000	51500	11.5	1	29.29	64	81.4	6.25	7.02
06/14/2000	53000	11.5	1	29.27	64.1	81.4	6.26	7.02
06/14/2000	54500	11.5	1	29.25	64.6	79.6	6.12	7.02
06/14/2000	60000	11.6	1	29.21	64.2	80.2	6.17	7.02
06/14/2000	61500	11.5	1	29.2	64.3	79.5	6.12	7.02
06/14/2000	63000	11.4	1	29.16	64.6	79.7	6.14	7.01
06/14/2000	64500	11.6	1	29.16	64.3	79.4	6.11	7.01
06/14/2000	70000	11.5	1	29.15	64.3	79.1	6.09	7
06/14/2000	71500	11.5	1	29.12	64.7	78.8	6.07	7
06/14/2000	73000	11.5	1	29.09	64.7	79.7	6.15	7
06/14/2000	74500	11.4	1	29.08	64.7	79.5	6.13	7
06/14/2000	80000	11.4	1	29.07	64.8	78.4	6.05	7
06/14/2000	81500	11.4	1	29.1	64.4	79.1	6.1	7

Marsh Bayou
Site 1
06/13/00

06/14/2000	83000	11.5	1	29.07	64.7	78.7	6.07	7
06/14/2000	84500	11.5	1	29.04	65	77.5	5.98	7
06/14/2000	90000	11.4	1	29.05	64.9	78.5	6.06	7
06/14/2000	91500	11.5	1	29.05	64.9	77.6	5.99	7
06/14/2000	93000	11.5	1	29.04	65.2	78.5	6.06	7
06/14/2000	94500	11.5	1	29.04	65	77	5.94	7
06/14/2000	100000	11	1	29.06	65.2	79.6	6.14	7
06/14/2000	101500	11.5	1	29.06	65.1	78.7	6.07	7
06/14/2000	103000	11.5	1	29.08	65.2	77.3	5.96	7.01
06/14/2000	104500	11.4	1	29.1	65.5	77.6	5.98	7.01
06/14/2000	110000	11.5	1	29.12	65.2	77	5.94	7
06/14/2000	111500	11.4	1	29.14	65.1	77.6	5.98	7
06/14/2000	113000	11.5	1	29.17	65.3	78.1	6.01	7.01
06/14/2000	114500	11.4	1	29.19	65.3	78.3	6.02	7
06/14/2000	120000	11.5	1	29.23	65.4	78.3	6.02	7.02
06/14/2000	121500	11.5	1	29.25	65.4	78.9	6.06	7.02
06/14/2000	123000	11.3	1	29.28	65.3	79	6.07	7.02
06/14/2000	124500	11.4	1	29.28	65.2	78.6	6.04	7.01
06/14/2000	130000	11.4	1	29.31	65.2	78.2	6	7.01
06/14/2000	131500	11.5	1	29.36	65.2	79	6.06	7.03
06/14/2000	133000	11.4	1	29.36	65.2	79	6.06	7.01
06/14/2000	134500	11.4	1	29.42	65.3	80.1	6.14	7.04
06/14/2000	140000	11.5	1	29.43	65	79.1	6.06	7.02
06/14/2000	141500	11.5	1	29.4	65	77.8	5.96	7
06/14/2000	143000	11.4	1	29.48	64.9	79.8	6.11	7.02
06/14/2000	144500	11.4	1	29.44	64.7	76.8	5.89	6.98
06/14/2000	150000	11.4	1	29.49	64.8	77.6	5.94	6.99
06/14/2000	151500	11.4	1	29.45	64.8	77	5.9	6.97
06/14/2000	153000	11.4	1	29.48	64.6	76.1	5.83	6.98
06/14/2000	154500	11.4	1	29.51	64.5	75.6	5.79	6.97
06/14/2000	160000	11.5	1	29.45	64.4	75.2	5.76	6.96
06/14/2000	161500	11.5	1	29.46	64.5	73.9	5.66	6.96
06/14/2000	163000	11.4	1	29.43	64.5	74.1	5.68	6.96
06/14/2000	164500	11.4	1	29.45	64.4	74.8	5.73	6.96
06/14/2000	170000	11.5	1	29.42	64.5	73.8	5.65	6.95
06/14/2000	171500	11.4	1	29.42	64.3	73.9	5.67	6.95
06/14/2000	173000	11.4	1	29.44	64.4	74.4	5.7	6.96
06/14/2000	174500	11.4	1	29.47	64.5	74.9	5.73	6.97
06/14/2000	180000	11.5	1	29.5	64.7	75.8	5.8	6.98
06/14/2000	181500	11.4	1	29.69	64.8	78.5	5.99	7.01
06/14/2000	183000	11.4	1	29.61	64.7	77.9	5.95	7.01
06/14/2000	184500	11.4	1	29.6	64.7	77.7	5.94	7.02
06/14/2000	190000	11.4	1	29.65	64.6	76.8	5.87	7.02
06/14/2000	191500	11.4	1	29.55	64.7	76.6	5.86	7
06/14/2000	193000	11.5	1	29.67	64.9	78.1	5.96	7.04
06/14/2000	194500	11.4	1	29.56	64.8	76	5.81	7
06/14/2000	200000	11.4	1	29.68	64.9	78.3	5.98	7.03
06/14/2000	201500	11.4	1	29.76	64.8	78.5	5.98	7.06
06/14/2000	203000	11.4	1	29.61	64.8	76.3	5.83	7
06/14/2000	204500	11.5	1	29.72	64.9	78.9	6.01	7.03
06/14/2000	210000	11.4	1	29.73	64.9	79.7	6.08	7.06
06/14/2000	211500	11.4	1	29.74	64.9	80.7	6.15	7.07
06/14/2000	213000	11.4	1	29.74	64.9	80.3	6.12	7.06
06/14/2000	214500	11.4	1	29.7	65	79.2	6.04	7.06
06/14/2000	220000	11.4	1	29.74	65.1	79.1	6.03	7.06
06/14/2000	221500	11.5	1	29.79	64.9	80.6	6.14	7.07
06/14/2000	223000	11.4	1	29.76	65.1	79.5	6.06	7.05
06/14/2000	224500	11.4	1	29.73	65	79.1	6.03	7.04
06/14/2000	230000	11.4	1	29.79	65	81.1	6.18	7.06
06/14/2000	231500	11.4	1	29.88	65.1	83.7	6.36	7.1
06/14/2000	233000	11.4	1	29.89	65.1	82.1	6.25	7.1
06/14/2000	234500	11.4	1	29.88	65.1	81.9	6.23	7.1
06/15/2000	0	11.4	1	29.9	65	83.9	6.38	7.11
06/15/2000	1500	11.4	1	29.89	65.1	82.5	6.27	7.11
06/15/2000	3000	11.4	1	29.86	65.1	80.4	6.12	7.1
06/15/2000	4500	11.4	1	29.87	65.1	81	6.16	7.11
06/15/2000	10000	11.4	1	29.81	65.1	80.8	6.15	7.09
06/15/2000	11500	11.5	1	29.86	65	83.9	6.38	7.12
06/15/2000	13000	11.5	1	29.84	65.2	84.6	6.44	7.12
06/15/2000	14500	11.4	1	29.82	65.1	82.3	6.27	7.11
06/15/2000	20000	11.5	1	29.81	65	81.2	6.19	7.11
06/15/2000	21500	11.4	1	29.79	65	81.5	6.21	7.1
06/15/2000	23000	11.4	1	29.76	65.1	82	6.25	7.1
06/15/2000	24500	11.4	1	29.75	64.9	82.7	6.31	7.09
06/15/2000	30000	11.5	1	29.72	65	82.8	6.31	7.09
06/15/2000	31500	11.4	1	29.69	65.2	79.7	6.08	7.08
06/15/2000	33000	11.4	1	29.68	65	78.9	6.02	7.08
06/15/2000	34500	11.4	1	29.67	65.1	82.3	6.28	7.08

06/15/2000	40000	11.4	1	29.62	65	80.8	6.17	7.07
06/15/2000	41500	11.4	1	29.6	65.1	78.1	5.97	7.06
06/15/2000	43000	11.4	1	29.59	65.1	80.3	6.13	7.08
06/15/2000	44500	11.4	1	29.57	65	78.6	6.01	7.05
06/15/2000	50000	11.4	1	29.54	64.9	77.8	5.94	7.08
06/15/2000	51500	11.5	1	29.51	65	80.6	6.17	7.07
06/15/2000	53000	11.4	1	29.47	64.9	79.7	6.1	7.05
06/15/2000	54500	11.4	1	29.45	65	80	6.13	7.07
06/15/2000	60000	11.4	1	29.43	65	79.8	6.1	7.05
06/15/2000	61500	11.4	1	29.4	65	76.7	5.88	7.02
06/15/2000	63000	11.4	1	29.37	64.8	77.9	5.97	7.04
06/15/2000	64500	11.5	1	29.35	65.1	75.7	5.81	7.03
06/15/2000	70000	11.4	1	29.31	64.8	75.8	5.82	7.04
06/15/2000	71500	11.4	1	29.3	64.9	76.7	5.89	7.03
06/15/2000	73000	11.4	1	29.28	65.1	76.6	5.88	7.02
06/15/2000	74500	11.5	1	29.25	64.8	76.5	5.88	7.02
06/15/2000	80000	11.4	1	29.22	64.8	74.4	5.73	7.03
06/15/2000	81500	11.4	1	29.19	64.9	75.4	5.81	7.02
06/15/2000	83000	11.4	1	29.19	64.7	75.7	5.83	7.02
06/15/2000	84500	11.4	1	29.17	64.7	75.7	5.83	7.02
06/15/2000	90000	11.4	1	29.15	64.9	73.9	5.69	7.01
06/15/2000	91500	11.4	1	29.18	64.7	75.3	5.8	7.01
06/15/2000	93000	11.4	1	29.16	64.9	74.6	5.75	7.02
06/15/2000	94500	11.4	1	29.14	64.8	73.1	5.63	7.02
06/15/2000	100000	11.4	1	29.15	64.7	72.5	5.58	7.01
06/15/2000	101500	11.4	1	27.12	77.5	78.1	6.24	7.27
06/15/2000	103000	11.4	1	26.82	93.5	61.3	4.92	7.07
06/15/2000	104500	11.4	1	26.9	0	59.8	4.8	7.02
06/15/2000	110000	11.4	1	27.11	0	53.8	4.3	6.88
06/15/2000	111500	11.4	1	27.46	0.1	48.2	3.83	6.85
06/15/2000	113000	11	1	27.61	1.4	37.7	2.99	6.8
06/15/2000	114500	11.2	1	27.94	12.7	32.6	2.56	6.76
06/15/2000	120000	11.1	1	28.22	12.5	30.6	2.4	6.84
06/15/2000	121500	11.5	1	28.44	2.3	30.6	2.39	6.89
06/15/2000	123000	11.4	1	28.67	17.7	27.8	2.16	6.83
06/15/2000	124500	11.4	1	29.05	15.9	25.4	1.96	6.83
06/15/2000	130000	11.3	1	29.56	0	24.4	1.87	6.8
06/15/2000	131500	11.5	1	29.9	0.3	26.8	2.04	6.87
06/15/2000	133000	11.3	1	30.08	0.1	25.3	1.92	6.89
06/15/2000	134500	11.4	1	30.31	0	24.1	1.82	6.9
06/15/2000	140000	11.3	1	30.4	17.2	24.5	1.85	6.91
06/15/2000	141500	11.2	1	30.32	0	21	1.59	6.89
06/15/2000	143000	11	1	30.19	0.1	22.9	1.73	6.91
06/15/2000	144500	11	1	30.28	0	23.6	1.78	6.96
06/15/2000	150000	11.4	1	30.39	0.1	22	1.66	6.93
06/15/2000	151500	10.9	1	30.68	0	21.1	1.59	6.92
06/15/2000	153000	11.4	1	30.97	0	20.7	1.55	6.92
06/15/2000	154500	11.4	1	30.95	0.1	20.7	1.54	6.92
06/15/2000	160000	11.4	1	30.84	0.1	20.3	1.52	6.91
06/15/2000	161500	11.4	1	30.7	0	19.4	1.45	6.9
06/15/2000	163000	11.4	1	30.54	0	19	1.43	6.89
06/15/2000	164500	11.4	1	30.4	0.3	18.2	1.37	6.88
06/15/2000	170000	11.4	1	30.25	0	17.7	1.34	6.88

Marsh Bayou at LA 171, looking downstream

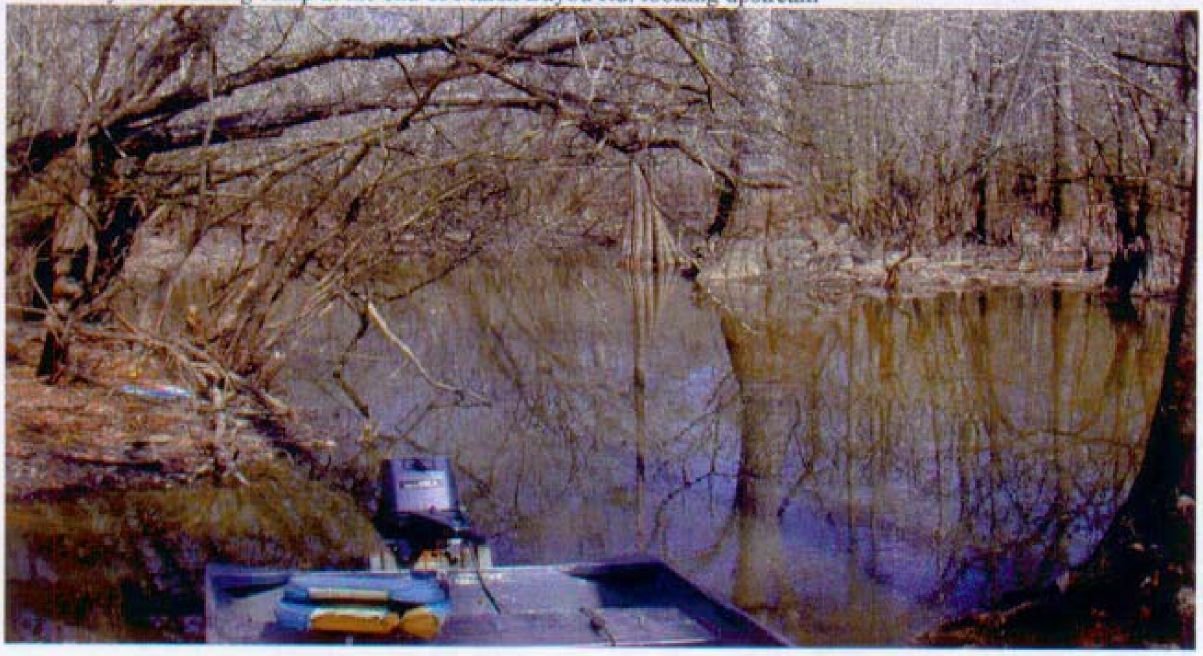


Little Marsh Bayou at LA 171 looking downstream

Little Marsh Bayou at LA 171

Marsh Bayou at Marsh Bayou Rd, looking downstream

Marsh Bayou at hunting camp at the end of Marsh Bayou Rd. looking upstream



Marsh Bayou at hunting camp at the end of Marsh Bayou Rd. looking downstream

Little Marsh Bayou on Jersey Dr. looking downstream

Little Marsh Bayou at Jersey Drive looking upstream

Marsh Bayou at East Welcome Rd. looking downstream

Marsh Bayou at East Welcome Rd. looking downstream

Marsh Bayou at the Beaver Dam Downstream of Site 3.

MARSH BAYOU WATER QUALITY ASSESSMENT DATA

Site: LDEQ AMBIENT WATER QUALITY DATA NETWORK, Site 0839, Marsh Bayou Southeast of Topsy, LA

DATE			TIME (hrs)	DEPTH (meters)	FIELD pH	WATER TEMPERATURE (deg C)	D.O. (mg/L)	FIELD CONDUCTIVITY(umhos)	SECCHI DISK (inches)
MONTH	DAY	YEAR							
12	22	99	8:45	1.0	7.54	7.46	8.52	107.0	6.0
11	17	99	8:20	1.0	7.51	11.11	0.26	296.0	6.0
10	20	99	8:15	1.0	7.21	15.52	1.69	229.0	6.0
9	22	99	9:00	1.0	7.15	19.90	1.47	276.0	8.0
8	18	99	8:35	1.0	6.92	25.62	0.56	168.0	6.0
7	21	99	8:05	1.0	6.95	25.20	2.87	101.0	10.0
6	16	99	8:15	1.0	6.92	24.78	2.96	129.0	8.0
5	19	99	8:25	1.0	7.06	22.52	1.39	220.0	10.0
4	21	99	8:10	1.0	6.95	17.36	1.37	310.0	2.0
3	17	99	8:00	1.0	6.67	11.45	5.82	58.0	12.0
2	18	99	8:30	1.0	6.79	13.26	5.80	87.0	7.0
1	20	99	8:05	1.0	6.49	10.97	0.43	78.0	16.0

APPENDIX C – HYDROLOGIC CALIBRATION

Reach and Element Layout for the Marsh Bayou LA-QUAL Model
Marsh Bayou Flow Calibration
Marsh Bayou Stream Geometry
Marsh Bayou Reaches and Elements
Marsh Bayou Reach Slopes, Elevation Estimated From USGS Topography Maps
Marsh Bayou Drainage Area Versus Flow and Stream Geometry
Hydrologic Calibration Plots:
Flow vs. River Kilometer
Width vs. River Kilometer
Depth vs. River Kilometer
Mean Velocity vs. River Kilometer
Dispersion vs. River Kilometer

REACH AND ELEMENT LAYOUT FOR MARSH BAYOU LA-QUAL MODEL											
REACH	WATERBODY	REACH DESCRIPTION	BEGINNING RIVER KILOMETER (km)	ENDING RIVER KILOMETER (km)	TOTAL LENGTH (km)	ELEMENT SIZE (km)	NUMBER OF ELEMENTS IN REACH	TOTAL NUMBER OF ELEMENTS	BEGINNING ELEMENT NUMBER	ENDING ELEMENT NUMBER
1	Marsh Bayou (MB)	Welcome Rd. - RKM 8.6	9.52	8.60	0.92	0.0920000000	10	10	1	10
2	Marsh Bayou (MB)	RKM 8.6 - UT (LDB)	8.60	7.60	1.00	0.1000000000	10	20	11	20
3	Marsh Bayou (MB)	UT (LDB) - Site 4	7.60	6.65	0.95	0.0950000000	10	30	21	30
4	Marsh Bayou (MB)	Site 4 - E. of Topsy Rd.	6.65	6.00	0.65	0.1300000000	5	35	31	35
5	Marsh Bayou (MB)	E. of Topsy Rd. - RKM 5.2	6.00	5.20	0.80	0.1000000000	8	43	36	43
6	Marsh Bayou (MB)	RKM 5.2 - UT (LDB)	5.20	4.200	1.00	0.1000000000	10	53	44	53
7	Marsh Bayou (MB)	UT (LDB) - Site 3	4.200	3.30	0.90	0.1000000000	9	62	54	62
8	Marsh Bayou (MB)	Site 3 - Little Marsh Bayou	3.30	2.80	0.50	0.1000000000	5	67	63	67
9	Marsh Bayou (MB)	Little Marsh Bayou - Beaver Dam	2.80	2.55	0.25	0.0500000000	5	72	68	72
10	Marsh Bayou (MB)	Beaver Dam	2.55	2.55	0.0010	0.0010000000	1	73	73	73
11	Marsh Bayou (MB)	Beaver Dam - RKM 2.0	2.55	2.00	0.55	0.1100000000	5	78	74	78
12	Marsh Bayou (MB)	RKM 2.0 - UT (LDB)	2.00	1.60	0.40	0.1000000000	4	82	79	82
13	Marsh Bayou (MB)	UT (LDB) - Natural Diversion to Calcasieu River	1.60	1.30	0.30	0.1000000000	3	85	83	85
14	Marsh Bayou (MB)	Natural Diversion to Calcasieu River - RKM 0.8	1.30	0.80	0.50	0.1000000000	5	90	86	90
15	Marsh Bayou (MB)	RKM 0.8 - Calcasieu River (Lower outlet)	0.80	0.00	0.80	0.1000000000	8	98	91	98
Totals					9.52			98		

UT = Unnamed tributary
LDB = Left descending bank
RDB = Right descending bank

MARSH BAYOU
Flow Calibration

Reach No.	Stream	Upstream flow		*Point sources*		*Tributaries*	Reach length	Distributed flow	Downstream flow	Calibration Location	Model flow @ *Calibration Point*	Calibration *flow*	Characteristic flow*	Incremental *flow*	Element Number
		(cfs)	(cms)	(cfs)	(cms)	(cms)	(Km)	(cms/Km)	(cms)		(cms)	(cms)	(cms)	(cms)	
0	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.00000	0.000000	0.00142	Marsh Bayou @ Welcome Rd.					1
1	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.92000	0.000000	0.00142		*0.00142*		0.00142	0.0000	
2	MB	0.05000	0.00142	0.00000	0.00000	0.00000	1.00000	0.000000	0.00142		0.00142		0.00142	0.0000	
3	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.95000	0.000000	0.00142		0.00142		0.00142	0.0000	
4	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.65000	0.000000	0.00142		0.00142		0.00142	0.0000	
5	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.80000	0.000000	0.00142		0.00142		0.00142	0.0000	
6	MB	0.05000	0.00142	0.00000	0.00000	0.00000	1.00000	0.000000	0.00142		0.00142		0.00142	0.0000	
7	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.90000	0.000000	0.00142		0.00142		0.00142	0.0000	
8	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.50000	0.000000	0.00142		0.00142		0.00142	0.0000	
9	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.25000	0.000000	0.00142		0.00142		0.00142	0.0000	
10	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.00100	0.000000	0.00142		0.00142		0.00142	0.0000	
11	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.55000	0.000000	0.00142		0.00142		0.00142	0.0000	
12	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.40000	0.000000	0.00142		0.00142		0.00142	0.0000	
13	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.30000	0.000000	0.00142		0.00142		0.00142	0.0000	
14	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.50000	0.000000	0.00142		0.00142		0.00142	0.0000	
15	MB	0.05000	0.00142	0.00000	0.00000	0.00000	0.80000	0.000000	0.00142		0.00142		0.00142	0.0000	
TOTALS				0.000	0.000	0.000	9.52	0.000						0.0000	

* The characteristic flow is the flow one element *above the bottom of the reach* .

Note: Bold italic print denotes measured calibration data as opposed to calculated calibration data.

Marsh Bayou Stream Geometry				
Reach Number	**Site/Cross-Section Description**	**Approximate River Kilometer**	**Cross-Section Width (meters)**	**Cross-Section Average Depth (meters)**
1	Site 5 - Marsh Bayou @ Welcome Rd. (100 ft upstream of the bridge)	9.52	4.206	0.496
3,4	Site 4 - Marsh Bayou @ Topsy Rd. (100 ft upstream of the bridge)	6.65	7.77	0.760
7,8	Bayou Rd. (100 ft downstream of the bridge)	3.3	13.26	0.606
9	of the beaver dam (visual estimation of width and depth by the field crew)	2.55	23.62	0.910
11	downstream of the beaver dam (visual estimation of width and depth by the field crew)	2.549	23.62	0.610
15	Calcasieu River downstream of the confluence with the Marsh Bayou, may use as representative geometry for the bottom reach of Marsh	NA	31.09	1.570
	Site 1 - Calcasieu River, 100 ft downstream of Site 2	NA	46.63	10.118

MARSH BAYOU

Reaches and elements

Stream Name	Stream code	Reach no.	From (River Km)	To (River Km)	Reach Length (Km)	No. of Elements	Element Length (km)	Beginning Element Number	Ending Element Number	Drainage Area at Top of Reach (X) (km²)	Width (W) (meters)	Depth (D) (meters)	Width to Depth Ratio	Characteristic Flow (cfs)	Characteristic flow (cms)	Velocity (mps)	Velocity (fps)	Constants for depth** d	e	f	Constants for velocity*** g	h	Constants for Width* a	b	c
Marsh Bayou	MB	1	9.52	8.60	0.92	10	0.092	1.00	10.00	NA	4.206	0.496	8.48	0.050	0.00142	0.0007	0.0022	2.10	0.48	0.400	NA	NA	4.45	0.36	4.000
Marsh Bayou	MB	2	8.60	7.60	1.00	10	0.100	11.00	20.00	NA	[illegible]	[illegible]	9.09	0.050	0.00142	0.0005	0.0017	2.10	0.48	0.550	NA	NA	4.45	0.36	5.000
Marsh Bayou	MB	3	7.60	6.65	0.95	10	0.095	21.00	30.00	NA	7.770	0.760	10.22	0.050	0.00142	0.0002	0.0008	1.40	0.48	0.700	NA	NA	5.00	0.36	7.300
Marsh Bayou	MB	4	6.65	6.00	0.65	5	0.130	31.00	35.00	NA	7.770	0.760	10.22	0.050	0.00142	0.0002	0.0008	1.40	0.48	0.700	NA	NA	5.00	0.36	7.300
Marsh Bayou	MB	5	6.00	5.20	0.80	8	0.100	36.00	43.00	NA	[illegible]	[illegible]	14.62	0.050	0.00142	0.0002	0.0008	1.15	0.48	0.650	NA	NA	5.40	0.36	9.500
Marsh Bayou	MB	6	5.20	4.20	1.00	10	0.100	44.00	53.00	NA	[illegible]	[illegible]	19.17	0.050	0.00142	0.0002	0.0007	1.15	0.48	0.600	NA	NA	5.40	0.36	11.500
Marsh Bayou	MB	7	4.20	3.30	0.90	9	0.100	54.00	62.00	NA	13.258	0.606	21.89	0.050	0.00142	0.0002	0.0006	1.00	0.48	0.560	NA	NA	2.70	0.36	13.000
Marsh Bayou	MB	8	3.30	2.80	0.50	5	0.100	63.00	67.00	NA	13.258	0.606	21.89	0.050	0.00142	0.0002	0.0006	1.00	0.48	0.560	NA	NA	2.70	0.36	13.000
Marsh Bayou	MB	9	2.80	2.55	0.25	5	0.050	68.00	72.00	NA	23.620	0.910	25.96	0.050	0.00142	0.0001	0.0002	1.20	0.20	0.910	NA	NA	16.50	0.50	23.000
Marsh Bayou	MB	10	2.55	2.55	0.00	1	0.001	73.00	73.00	NA	[illegible]	[illegible]	#DIV/0!	0.050	0.00142	#DIV/0!	#DIV/0!	1.10	0.20	0.000	NA	NA	32.79	0.05	0.000
Marsh Bayou	MB	11	2.55	2.00	0.55	5	0.110	74.00	78.00	NA	23.620	0.610	38.72	0.050	0.00142	0.0001	0.0003	1.40	0.48	0.610	NA	NA	16.50	0.50	23.620
Marsh Bayou	MB	12	2.00	1.60	0.40	4	0.100	79.00	82.00	NA	[illegible]	[illegible]	30.00	0.050	0.00142	0.0001	0.0002	1.40	0.48	0.800	NA	NA	16.50	0.50	24.000
Marsh Bayou	MB	13	1.60	1.30	0.30	3	0.100	83.00	85.00	NA	[illegible]	[illegible]	26.34	0.050	0.00142	0.0001	0.0002	1.40	0.48	0.930	NA	NA	16.50	0.50	24.500
Marsh Bayou	MB	14	1.30	0.80	0.50	5	0.100	86.00	90.00	NA	[illegible]	[illegible]	26.60	0.050	0.00142	0.0001	0.0002	1.40	0.48	0.940	NA	NA	16.50	0.50	25.000
Marsh Bayou	MB	15	0.80	0.00	0.80	8	0.100	91.00	98.00	NA	[illegible]	[illegible]	26.84	0.050	0.00142	0.0001	0.0002	1.40	0.48	0.950	NA	NA	16.50	0.50	25.500
						98					Average W/D =		13.44												

This spreadsheet was used for presentation puposes. It was not used to develop the hydrologic coefficients, exponents, and constants to be used in the calibration model.

A cross-hatched cell indicates that the geometry was estimated using geometry of *upstream and downstream reaches* and other available data. (Reaches 2, 5, 6, 10, 12, 13, 14, 15)

$^{***}W = aQ^b + c$

$^{**}D = dQ^e + f$

$^{***}V = gQ^h$

Note 1: The widths and depths measured during the survey were used to represent the widths and depths for reaches 1, 3, 4, 7, and 8. The estimated widths and depths at sites located immediately upstream and downstream of the beaver dam were used to represent the widths and depths for reaches 9 and 11. The remaining width and depth constants were estimated based upon these values. Reach 10 was used to represent the beaver dam.

Note 2: Due to the low flow conditions during the survey, the cross-sectional data obtained during the survey or estmated based upon survey data was assumed to represent the minimum width and depth constants, f and c, for the stream reaches 5 - 6 and 9 - 15. The remaining reaches were considered to be free flowing and the width and depth constants were assumed to be less than the measured or estimated width and depth values.

Note 3: It was assumed that the width and depth constants for Reach 10 (beaver dam) was 0.0 meters.

Note 4: The width and depth exponent values recommended by Luna Leopold were used in the model.

Note 5: The width and depth coefficients were deveoped during the hydrologic calibration of the Marsh Bayou model.

Note 6: Discharge values were obtained from the spreadsheet "MARSH BAYOU FLOW CALIBRATION"

Note 7: Width and depth *values obtained from the spreadsheet* "MARSH BAYOU Stream Geometry"

MARSH BAYOU DRAINAGE AREA VERSUS FLOW AND STREAM GEOMETRY

Survey Date: 6/13-14/00

SITE	REACH	SITE NAME	DATA	RKM	RM	TAPEDOWN	GAUGE HEIGHT	DRAINAGE AREA		WIDTH (W)		W/DA	DEPTH (D)		D/DA	CROSS-SECTIONAL AREA		W/D RATIO	FLOW		VELOCITY	
#	#		TYPE			feet	feet	square mi	square km	feet	meters	m/km^2	feet	meters	m/km^2	ft^2	m^2	(m/m)	ft^3/sec	m^3/sec	ft/sec	m/sec
1	Not used	Calcasieu R. below confluence of Marsh B.	*Discharge and Rep. CS*		0.000					153.00	46.63		10.12	3.08		1548.50	143.85	15.12		0.000	0.000	0.000
2	9	Calcasieu R. below confluence of Marsh B.(*originally thought to be* on Marsh Bayou)	Rep. CS		0.000					107.00	31.09		5.17	1.57		527.00	48.96	19.74	102.554	2.904	0.195	0.059
	9	Actual mouth of Marsh Bayou						39.520	102.313		25.93			0.98								
3b	7	Marsh B., downstream of the beaver dam	*Visual estimation of the* field crew	2.550	1.585			37.362	96.726	77.50	23.62	0.24	2.50	0.76	0.0079	193.75	18.00	31.00	0.050	0.00142	######	######
3a	5	Marsh B., upstream of the beaver dam	Visual estimation of the field crew	2.550	1.585			37.362	96.726	77.50	23.62	0.24	3.50	1.07	0.0110	271.25	25.20	22.14	0.050	0.00142	######	######
3	4	Marsh B. @ Marsh B. Rd. (100 ft downstream of bridge)	Rep. CS	3.300	2.051			24.816	64.246	43.50	13.26	0.21	1.99	0.61	0.0094	86.45	8.03	21.89	0.050	0.00142	######	######
4	2	Marsh B. @ Topsy Rd. (100 ft upstream of bridge)	Rep. CS/TOT with drogues	6.650	4.133			22.365	57.900	25.50	7.77	0.13	2.49	0.76	0.0131	63.60	5.91	10.22	0.050	0.00142	######	######
5	1	*Marsh B. @ Welcome Rd.* (100 ft upstream of bridge)	Discharge	*9.520*	*5.917*	*13.20*		17.001	44.014	13.80	4.21	0.10	1.63	0.50	0.0113	22.46	2.09	8.48	0.050	0.00142	######	######
												0.17			0.0112							

Input data are the gray-shaded cells.

Double-lined border indicates value was not taken from a representative site.

A black cell indicates that the data was not available.

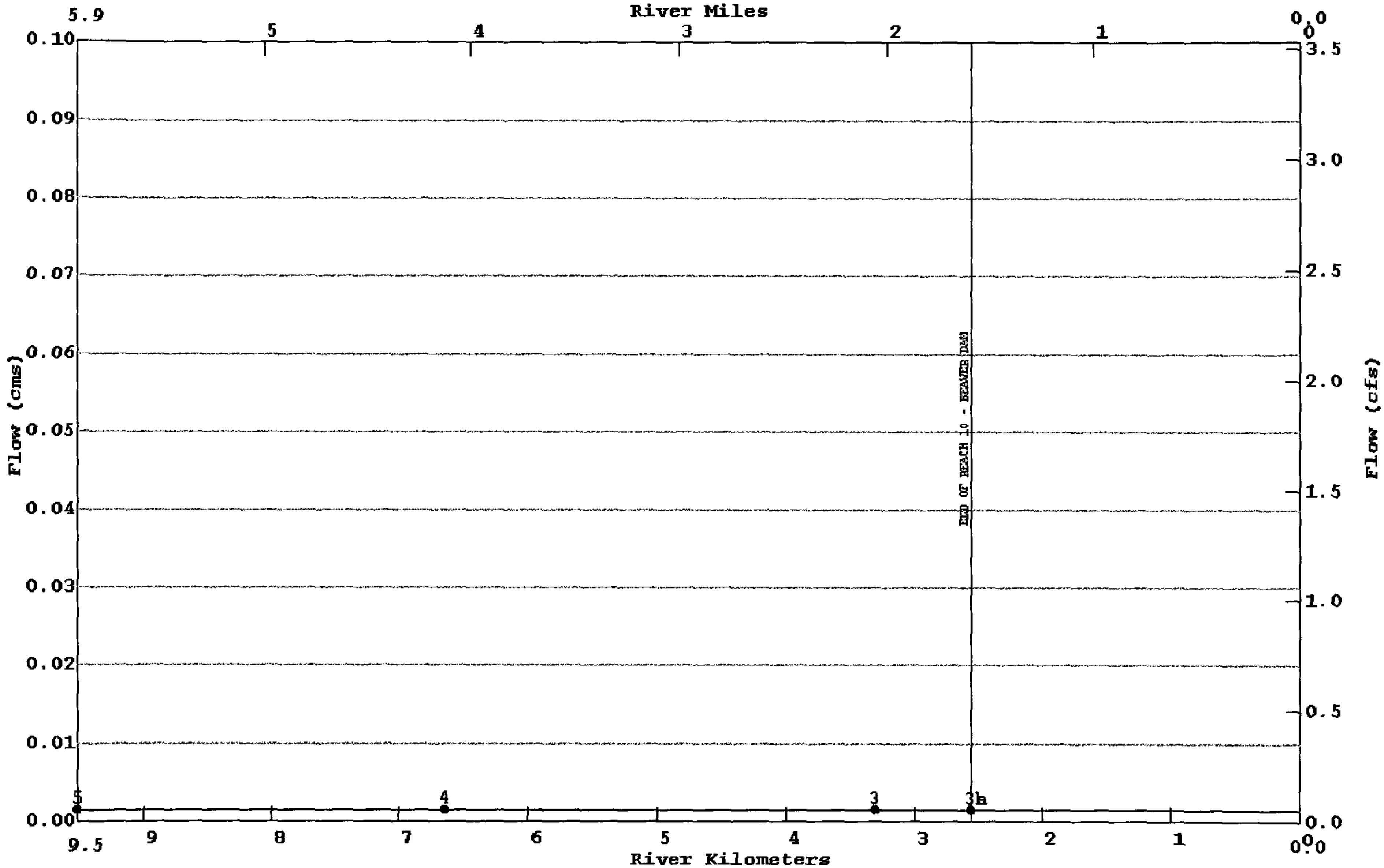
According to USGS personnel, the average streamflow for the Calcasieu R. @ Kinder, LA was 330 cfs on 6/14/00.

The velocity at Site 2 was measured using a drogue. The drogue traveled 50 ft in 3 min. *A factor of 0.7 was used when* calculating the velocity.

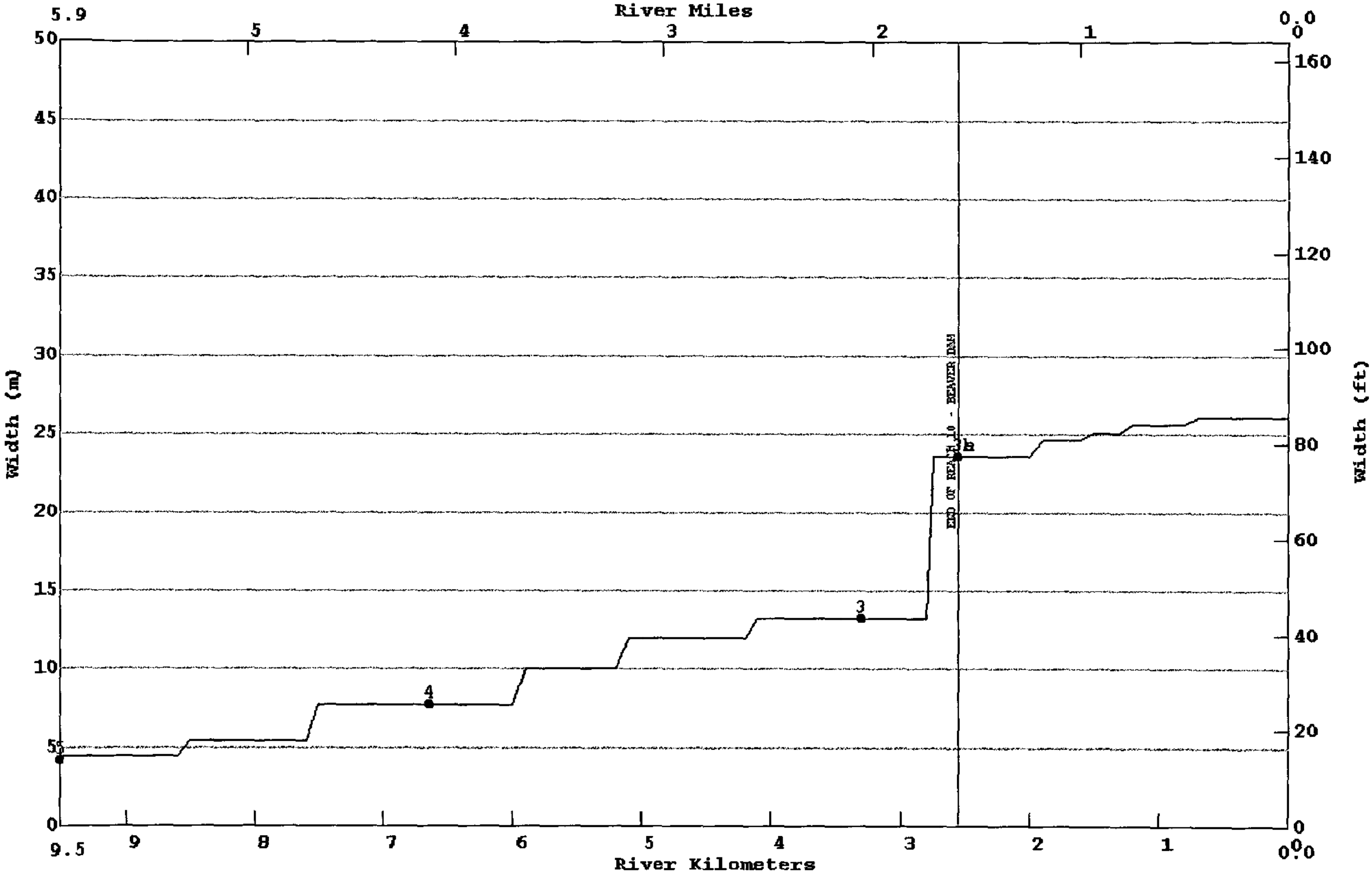
The stream flows and velocities at Sites 4, 3, 3a, & 3b were based on the assumption that the flow remained constant from site 5.

According to the survey personnel, no tributary flow existed during the survey.

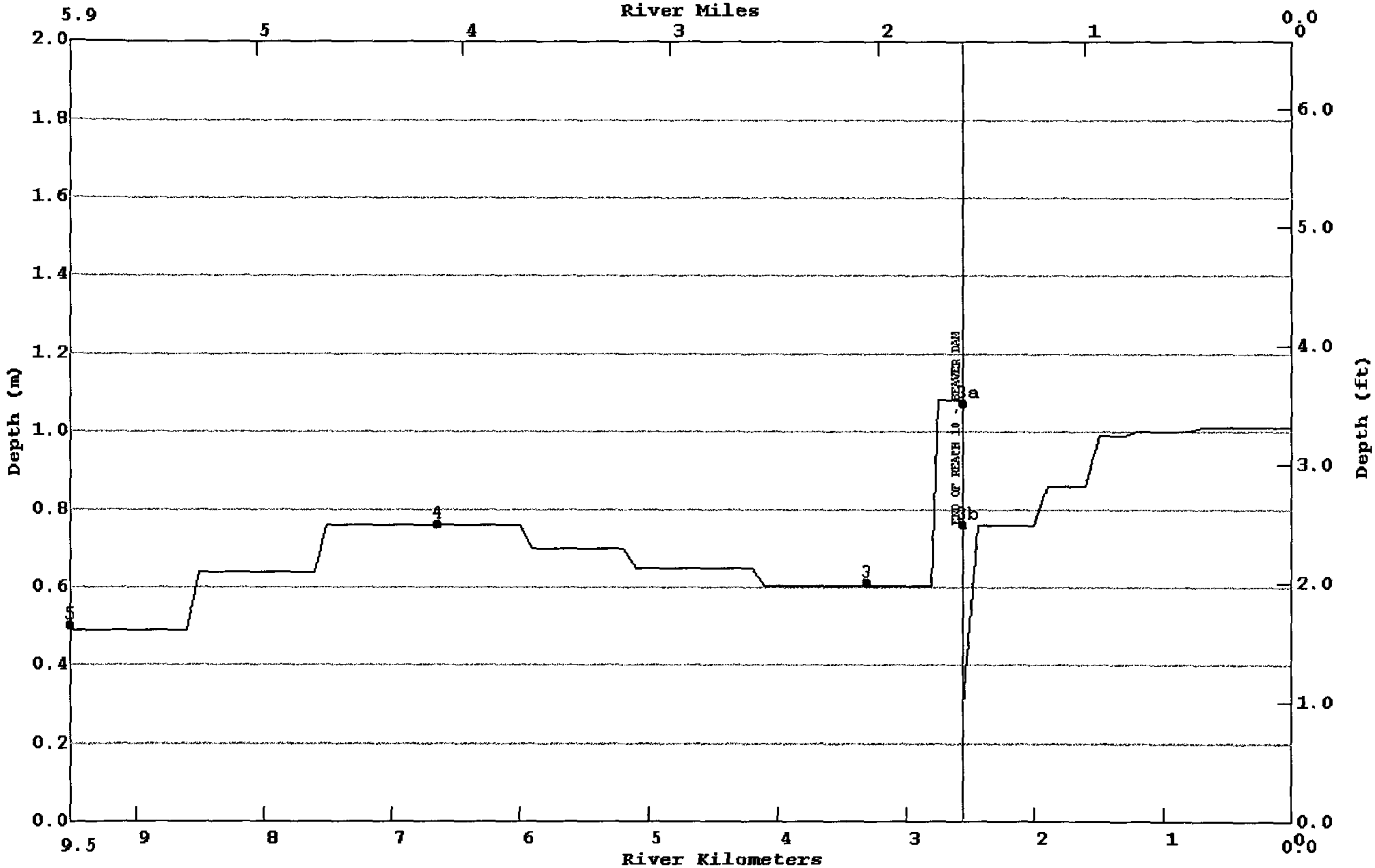
LA-QUAL Version 4.10 Run at 20:10 on 03/30/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.
10/06/00; W.C. BERGER, JR. min= 0.00 max= 0.00
Marsh Bayou: Welcome Rd.-Calcasieu R.



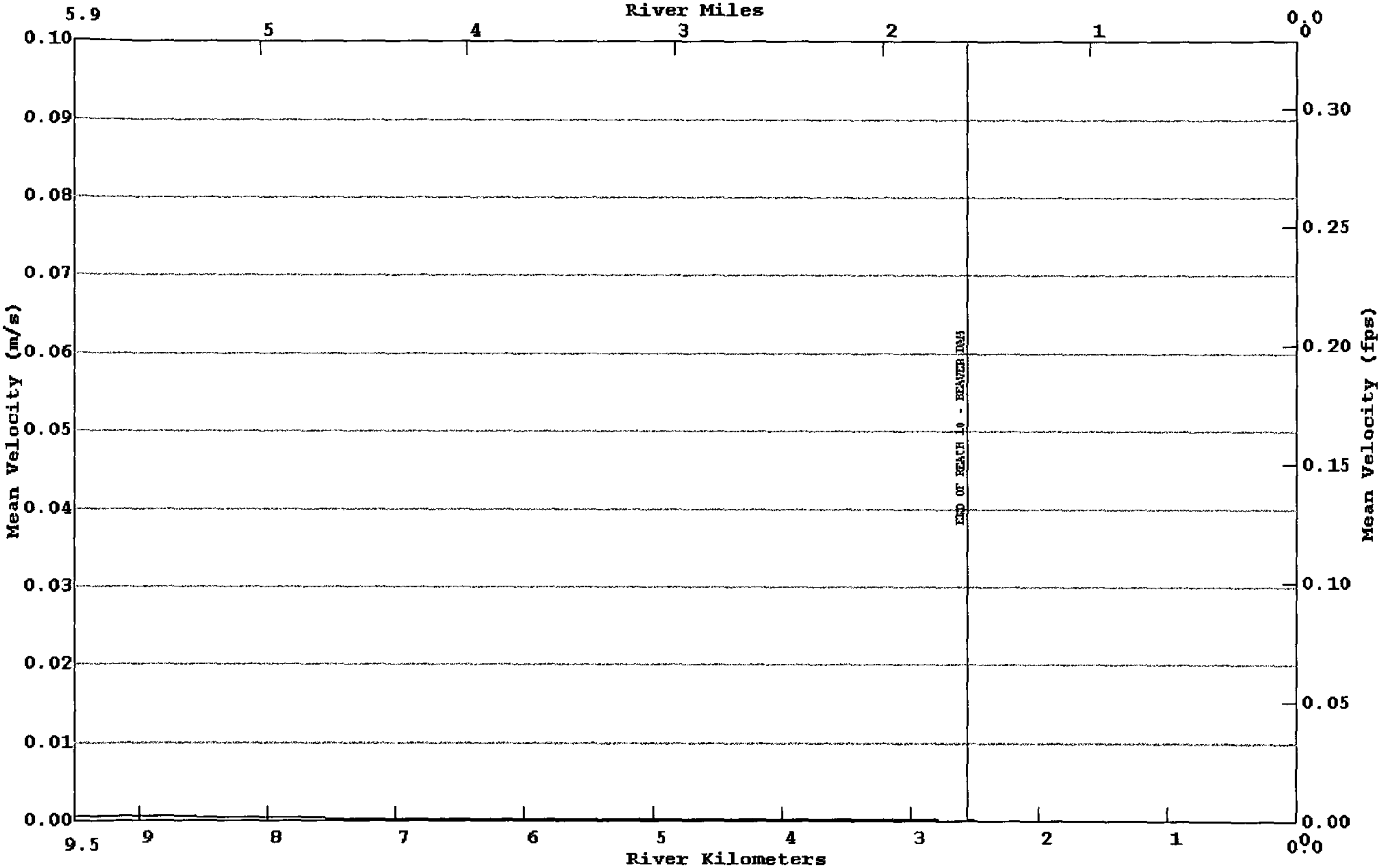
LA-QUAL Version 4.10 Run at 20:10 on 03/30/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.
10/06/00; W.C. BERGER, JR. min= 4.42 max= 26.12
Marsh Bayou: Welcome Rd.-Calcasieu R.



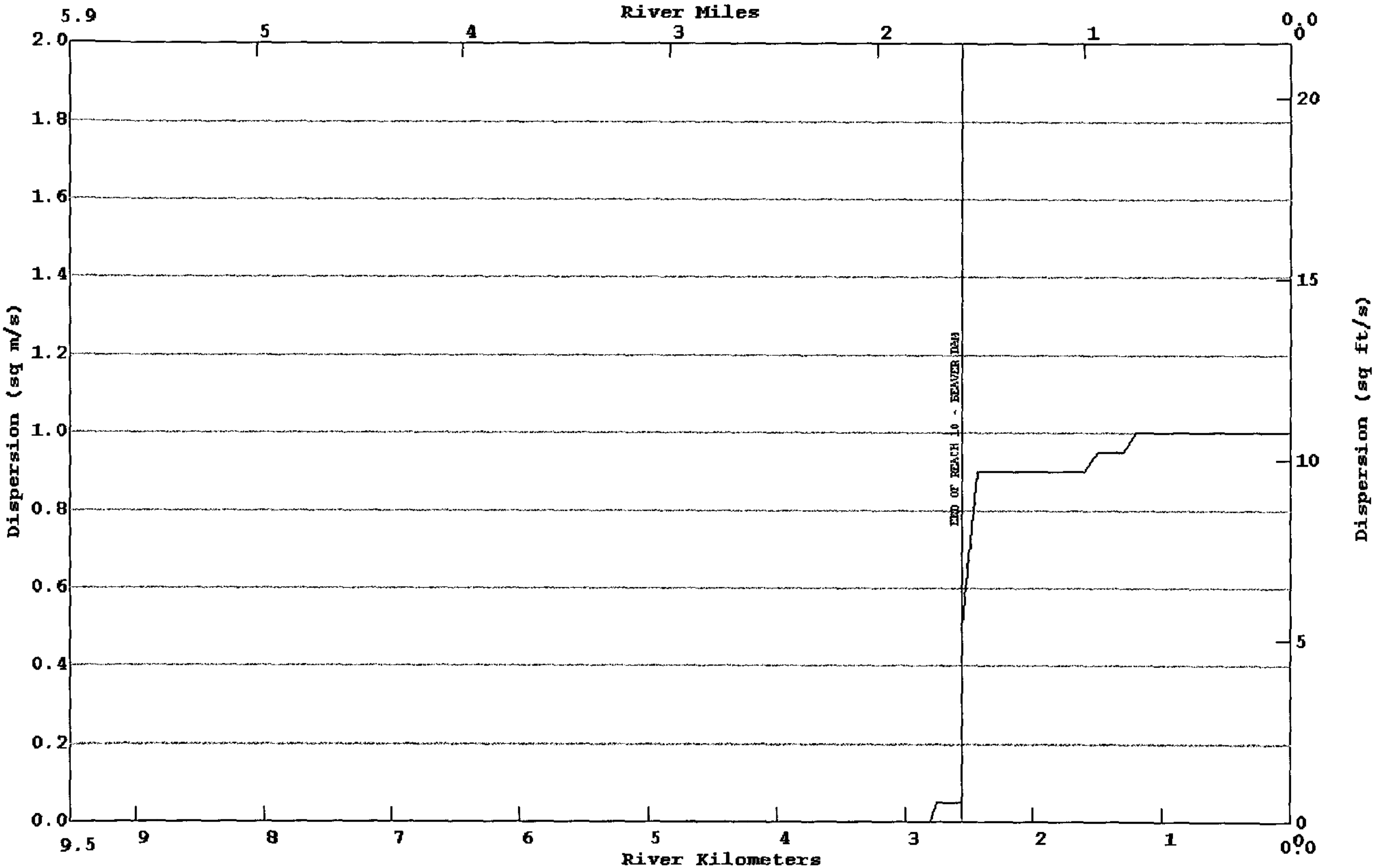
LA-QUAL Version 4.10 Run at 20:10 on 03/30/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.
10/06/00; W.C. BERGER, JR. min= 0.30 max= 1.08
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 20:10 on 03/30/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.
10/06/00; W.C. BERGER, JR. min= 0.00 max= 0.00
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 20:10 on 03/30/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.
10/06/00; W.C. BERGER, JR. min= 0.00 max= 1.00
Marsh Bayou: Welcome Rd.-Calcasieu R.



APPENDIX D – WATER QUALITY CALIBRATION

$CBOD_U$, $NBOD_U$, and Dissolved Oxygen Loads, Marsh Bayou Watershed Calibration Model
Marsh Bayou Calibration Model Output File
Water Quality Calibration Plots:
Dissolved Oxygen vs. River Kilometer
$CBOD_U$ vs. River Kilometer
$NBOD_U$ vs. River Kilometer
Sediment Oxygen Demand vs. River Kilometer
Reaeration Rate vs. River Kilometer
Temperature (°C) vs. River Kilometer
Marsh Bayou Water Quality Calibration Model Input Description

CBOD$_U$, NBOD$_U$, AND DISSOLVED OXYGEN LOADS Marsh Bayou Watershed Calibration Model										
Reach or Source of Load	Boundary Loads				Incremental Loads				Nonpoint Loads	
	FLOW m^3/sec	CBOD$_U$ mg/L	NBOD$_U$ mg/L	D.O. mg/L	FLOW m^3/sec	CBOD$_U$ mg/L	NBOD$_U$ mg/L	D.O. mg/L	CBOD$_U$ kg/day	NBOD$_U$ kg/day
Headwater	0.001416	12.19	11.47	1.77						
Reach 1									10.00	4.40
Reach 2									16.00	7.50
Reach 3									26.00	7.30
Reach 4									16.00	4.40
Reach 5									22.00	5.50
Reach 6									27.00	5.80
Reach 7									29.00	5.10
Reach 8									15.00	2.50
Reach 9									20.00	0.10
Reach 10									16.00	0.80
Reach 11									16.00	0.80
Reach 12									16.00	0.80
Reach 13									14.00	0.80
Reach 14									14.00	0.80
Reach 15									14.00	0.80

```
LA-QUAL Version 4.10
Louisiana Department of Environmental Quality

Input file is D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.txt
Output produced at 20:10 on 03/30/2001

$$$ DATA TYPE 1 (TITLES AND CONTROL CARDS) $$$

CARD TYPE        CONTROL TITLES

TITLE01          MARSH BAYOU WATERSHED CALIBRATION MODEL #2
TITLE02          10/06/00; W.C. BERGER, JR.
CNTROL11   NO    SEQUENCING OUTPUT
CNTROL12  YES    METRIC UNITS
CNTROL13  YES    OXYGEN DEPENDENT RATES
ENDATA01

$$$ DATA TYPE 2 (MODEL OPTIONS) $$$

CARD TYPE        MODEL OPTION

MODOPT01   NO    TEMPERATURE
MODOPT02   NO    SALINITY
MODOPT03  YES    CONSERVATIVE MATERIAL  I = CHLORIDES                  IN MG/L
MODOPT04  YES    CONSERVATIVE MATERIAL II = SULFATES                   IN MG/L
MODOPT05  YES    DISSOLVED OXYGEN
MODOPT06  YES    BIOCHEMICAL OXYGEN DEMAND = UCBOD
MODOPT07   NO    NITROGEN
MODOPT08   NO    PHOSPHORUS
MODOPT09   NO    CHLOROPHYLL A
MODOPT10   NO    MACROPHYTES
MODOPT11   NO    COLIFORM
MODOPT12  YES    NONCONSERVATIVE MATERIAL = NBOD                       IN mg/L
ENDATA02

$$$ DATA TYPE 3 (PROGRAM CONSTANTS) $$$

CARD TYPE        DESCRIPTION OF CONSTANT                    VALUE

PROGRAM          HYDRAULIC CALCULATION METHOD      =      2.00000
PROGRAM          MAXIMUM ITERATION LIMIT           =    500.00000
PROGRAM          PLOT CONTROL VALUE                =      3.00000
PROGRAM          INTERMEDIATE REPORT TYPE          =      4.00000
PROGRAM          FINAL REPORT TYPE                 =      1.00000
PROGRAM          BOD OXYGEN UPTAKE RATE            =      1.00000
PROGRAM          NCM OXYGEN UPTAKE RATE            =      1.00000
PROGRAM          INHIBITION CONTROL VALUE          =      2.00000
PROGRAM          TIDE HEIGHT (METERS)              =      0.07600
PROGRAM          TIDAL PERIOD                      =     25.00000
PROGRAM          PERIOD OF TIDAL RISE              =     12.50000
PROGRAM          DISPERSION EQUATION               =      1.00000
PROGRAM          ALGAE OXYGEN PROD                 =      0.00000
PROGRAM          OCEAN EXCHANGE RATIO              =      1.00000
PROGRAM          KL MINIMUM                        =      0.70000
```

```
PROGRAM       K2 MAXIMUM                          =     25.00000
PROGRAM       INHIBITION CONTROL VALUE            =      3.00000
PROGRAM       N INHIBITION EQUATION               =      2.00000
PROGRAM       OXYGEN DEPENDENCE THRESHOLD         =      2.00000
PROFRAM       SETTLING RATE UNITS                 =      2.00000
PROGRAM       O ERROR CLOSURE LIMIT               =      0.75000
PROGRAM       O RELAXATION COEFFICIENT            =      0.25000
PROGRAM       O ITERATIONS PER CYCLE              =      0.00000
PROGRAM       EFFECTIVE BOD DUE TO ALGAE          =      0.00000
ENDATA03

$$$ DATA TYPE 4 (TEMPERATURE CORRECTION CONSTANTS FOR RATE COEFFICIENTS) $$$

 CARD TYPE     RATE CODE     THETA VALUE

TEMP          BOD SETT      1.02400
TEMP          NCM DECA      1.07000
TEMP          NCM SETT      1.02400
TEMP          PO4 SRCE      1.06500
TEMP          NH3 SRCE      1.06500
TEMP          BENTHAL       1.06500
TEMP          NH3 DECA      1.07000
TEMP          ORGN SET      1.07000
ENDATA04

$$$ CONSTANTS TYPE 5 (TEMPERATURE DATA) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                    VALUE

ENDATA05

$$$ DATA TYPE 6 (ALGAE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                    VALUE

ENDATA06

$$$ DATA TYPE 7 (MACROPHYTE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                    VALUE

ENDATA07

$$$ DATA TYPE 8 (REACH IDENTIFICATION DATA) $$$
                                                    BEGIN        END     ELEM     REACH     ELEMS   BEGIN   END
CARD TYPE  REACH  ID  NAME                          REACH        REACH   LENGTH   LENGTH    PER RCH  ELEM   ELEM
                                                       km           km       km       km               NUM    NUM

REACH ID      1   MB  E. WELCOME RD.-RKM 8.6         9.52  TO     8.60   0.0920    0.92      10       1     10
REACH ID      2   MB  RKM 8.6-UT LDB                 8.60  TO     7.60   0.1000    1.00      10      11     20
REACH ID      3   MB  UT LDB-SITE 4                  7.60  TO     6.65   0.0950    0.95      10      21     30
REACH ID      4   MB  RKM 6.65-E. OF TOPSY RD.       6.65  TO     6.00   0.1300    0.65       5      31     35
REACH ID      5   MB  EAST OF TOPSY RD.-RKM 5.2      6.00  TO     5.20   0.1000    0.80       8      36     43
REACH ID      6   MB  RKM 5.2-UT LDB                 5.20  TO     4.20   0.1000    1.00      10      44     53
```

REACH ID	7	MB	UT LDB-SITE 3	4.20	TO	3.30	0.1000	0.90	9	54	62
REACH ID	8	MB	SITE 3-LITTLE MARSH B.	3.30	TO	2.80	0.1000	0.50	5	63	67
REACH ID	9	MB	LITTLE MARSH B.-BEAVER DAM	2.80	TO	2.55	0.0500	0.25	5	68	72
REACH ID	10	MB	BEAVER DAM	2.55	TO	2.55	0.0010	0.00	1	73	73
REACH ID	11	MB	BEAVER DAM-RKM 2.0	2.55	TO	2.00	0.1100	0.55	5	74	78
REACH ID	12	MB	RKM 2.0-UT LDB	2.00	TO	1.60	0.1000	0.40	4	79	82
REACH ID	13	MB	UT LDB-NATURAL DIV. TO CAL.R.	1.60	TO	1.30	0.1000	0.30	3	83	85
REACH ID	14	MB	NAT. DIV. TO CAL.R.-RKM RKM 0.8	1.30	TO	0.80	0.1000	0.50	5	86	90
REACH ID	15	MB	UPPER OUTLET-LOWER OUTLET	0.80	TO	0.00	0.1000	0.80	8	91	98

ENDATA08

$$$ DATA TYPE 9 (ADVECTIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	WIDTH "A"	WIDTH "B"	WIDTH "C"	DEPTH "D"	DEPTH "E"	DEPTH "F"	SLOPE	MANNINGS "N"
HYDR-1	1	MB	4.450	0.360	4.000	2.100	0.480	0.400	0.00020	0.040
HYDR-1	2	MB	4.450	0.360	5.000	2.100	0.480	0.550	0.00020	0.040
HYDR-1	3	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	4	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	5	MB	5.400	0.360	9.500	1.150	0.480	0.650	0.00020	0.040
HYDR-1	6	MB	5.400	0.360	11.500	1.150	0.480	0.600	0.00020	0.040
HYDR-1	7	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	8	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	9	MB	16.500	0.500	23.000	1.200	0.200	0.760	0.00020	0.040
HYDR-1	10	MB	32.790	0.050	0.000	1.100	0.200	0.000	0.30470	0.040
HYDR-1	11	MB	16.500	0.500	23.000	1.400	0.480	0.700	0.00020	0.040
HYDR-1	12	MB	16.500	0.500	24.000	1.400	0.480	0.800	0.00020	0.040
HYDR-1	13	MB	16.500	0.500	24.500	1.400	0.480	0.930	0.00020	0.040
HYDR-1	14	MB	16.500	0.500	25.000	1.400	0.480	0.940	0.00020	0.040
HYDR-1	15	MB	16.500	0.500	25.500	1.400	0.480	0.950	0.00020	0.040

ENDATA09

$$$ DATA TYPE 10 (DISPERSIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	TIDAL RANGE	DISPERSION "A"	DISPERSION "B"	DISPERSION "C"	DISPERSION "D"
HYDR	1	MB	0.00	0.000	0.000	0.000	0.000
HYDR	2	MB	0.00	0.000	0.000	0.000	0.000
HYDR	3	MB	0.00	0.000	0.000	0.000	0.000
HYDR	4	MB	0.00	0.000	0.000	0.000	0.000
HYDR	5	MB	0.00	0.000	0.000	0.000	0.000
HYDR	6	MB	0.00	0.000	0.000	0.000	0.000
HYDR	7	MB	0.00	0.000	0.000	0.000	0.000
HYDR	8	MB	0.00	0.000	0.000	0.000	0.000
HYDR	9	MB	0.00	0.050	0.000	0.000	0.000
HYDR	10	MB	0.00	0.500	0.000	0.000	0.000
HYDR	11	MB	0.00	0.900	0.000	0.000	0.000
HYDR	12	MB	0.00	0.900	0.000	0.000	0.000
HYDR	13	MB	0.00	0.950	0.000	0.000	0.000
HYDR	14	MB	0.00	1.000	0.000	0.000	0.000
HYDR	15	MB	0.00	1.000	0.000	0.000	0.000

ENDATA10

$$$ DATA TYPE 11 (INITIAL CONDITIONS) $$$

CARD TYPE	REACH	ID	TEMP	SALIN	DO	NH3	NO3+2	PHOS	CHL A	MACRO
INITIAL	1	MB	25.20	0.00	1.77	0.00	0.00	0.00	11.90	0.00
INITIAL	2	MB	25.20	0.00	1.77	0.00	0.00	0.00	11.90	0.00
INITIAL	3	MB	24.90	0.00	2.31	0.00	0.00	0.00	11.90	0.00
INITIAL	4	MB	24.90	0.00	2.31	0.00	0.00	0.00	11.90	0.00
INITIAL	5	MB	24.58	0.00	1.78	0.00	0.00	0.00	11.90	0.00
INITIAL	6	MB	24.58	0.00	1.78	0.00	0.00	0.00	11.90	0.00
INITIAL	7	MB	24.25	0.00	1.25	0.00	0.00	0.00	11.90	0.00
INITIAL	8	MB	24.25	0.00	1.25	0.00	0.00	0.00	11.90	0.00
INITIAL	9	MB	24.00	0.00	2.75	0.00	0.00	0.00	11.90	0.00
INITIAL	10	MB	24.68	0.00	3.28	0.00	0.00	0.00	11.90	0.00
INITIAL	11	MB	25.36	0.00	3.80	0.00	0.00	0.00	11.90	0.00
INITIAL	12	MB	25.36	0.00	3.80	0.00	0.00	0.00	11.90	0.00
INITIAL	13	MB	26.00	0.00	4.50	0.00	0.00	0.00	11.90	0.00
INITIAL	14	MB	29.11	0.00	6.45	0.00	0.00	0.00	11.90	0.00
INITIAL	15	MB	29.11	0.00	6.45	0.00	0.00	0.00	11.90	0.00

ENDATA11

$$$ DATA TYPE 12 (REAERATION, SEDIMENT OXYGEN DEMAND, BOD COEFFICIENTS) $$$

CARD TYPE	REACH	ID	K2 OPT	K2 "A"	K2 "B"	K2 "C"	BKGRND SOD	AEROB BOD DECAY	BOD SETT	BOD CONV TO SOD	ANAER BOD DECAY
COEF-1	1	MB	15 LOUISIANA	0.000	0.000	0.000	1.800	0.100	0.060	0.000	0.000
COEF-1	2	MB	15 LOUISIANA	0.000	0.000	0.000	1.150	0.100	0.060	0.000	0.000
COEF-1	3	MB	15 LOUISIANA	0.000	0.000	0.000	1.150	0.100	0.060	0.000	0.000
COEF-1	4	MB	15 LOUISIANA	0.000	0.000	0.000	1.400	0.100	0.060	0.000	0.000
COEF-1	5	MB	15 LOUISIANA	0.000	0.000	0.000	2.000	0.100	0.060	0.000	0.000
COEF-1	6	MB	15 LOUISIANA	0.000	0.000	0.000	2.600	0.100	0.060	0.000	0.000
COEF-1	7	MB	15 LOUISIANA	0.000	0.000	0.000	2.850	0.130	0.070	0.000	0.000
COEF-1	8	MB	15 LOUISIANA	0.000	0.000	0.000	2.700	0.130	0.070	0.000	0.000
COEF-1	9	MB	15 LOUISIANA	2.300	0.000	0.000	3.100	0.130	0.070	0.000	0.000
COEF-1	10	MB	1 K2=a	500.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEF-1	11	MB	15 LOUISIANA	0.000	0.000	0.000	3.300	0.150	0.080	0.000	0.000
COEF-1	12	MB	15 LOUISIANA	0.000	0.000	0.000	2.000	0.150	0.080	0.000	0.000
COEF-1	13	MB	20 K2=a/D	2.300	0.000	0.000	2.000	0.150	0.080	0.000	0.000
COEF-1	14	MB	20 K2=a/D	2.300	0.000	0.000	1.500	0.150	0.080	0.000	0.000
COEF-1	15	MB	20 K2=a/D	2.300	0.000	0.000	1.200	0.150	0.080	0.000	0.000

ENDATA12

$$$ DATA TYPE 13 (NITROGEN AND PHOSPHORUS COEFFICIENTS) $$$

CARD TYPE	REACH	ID	ORG-N DECA	ORG-N SETT	ORGN CONV TO NH3 SRCE	NH3 DECA	NH3 SRCE	PHOS SRCE	DENIT RATE

ENDATA13

$$$ DATA TYPE 14 (ALGAE AND MACROPHYTE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	SECCHI	ALGAE:	ALGAE	ALG CONV	ALGAE	ALGAE	MACRO	MACRO

DEPTH	CHL A	SETT	TO SOD	GROW	RESP	GROW	RESP

ENDATA14

$$$ DATA TYPE 15 (COLIFORM AND NONCONSERVATIVE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	COLIFORM DIE-OFF	NCM DECAY	NCM SETT	NCM CONV TO SOD
COEF-4	1	MB	0.00	0.15	0.03	0.00
COEF-4	2	MB	0.00	0.15	0.03	0.00
COEF-4	3	MB	0.00	0.08	0.03	0.00
COEF-4	4	MB	0.00	0.08	0.03	0.00
COEF-4	5	MB	0.00	0.08	0.03	0.00
COEF-4	6	MB	0.00	0.08	0.03	0.00
COEF-4	7	MB	0.00	0.10	0.04	0.00
COEF-4	8	MB	0.00	0.10	0.04	0.00
COEF-4	9	MB	0.00	0.10	0.04	0.00
COEF-4	10	MB	0.00	0.00	0.00	0.00
COEF-4	11	MB	0.00	0.10	0.04	0.00
COEF-4	12	MB	0.00	0.10	0.04	0.00
COEF-4	13	MB	0.00	0.10	0.04	0.00
COEF-4	14	MB	0.00	0.08	0.04	0.00
COEF-4	15	MB	0.00	0.08	0.04	0.00

ENDATA15

$$$ DATA TYPE 16 (INCREMENTAL DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE	REACH	ID	OUTFLOW	INFLOW	TEMP	SALIN	CM-I	CM-II	IN/DIST	OUT/DIST

ENDATA16

$$$ DATA TYPE 17 (INCREMENTAL DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE	REACH	ID	DO	BOD	ORG-N	NH3	NO3+2

ENDATA17

$$$ DATA TYPE 18 (INCREMENTAL DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE	REACH	ID	PHOS	CHL A	COLI	NCM

ENDATA18

$$$ DATA TYPE 19 (NONPOINT SOURCE DATA) $$$

CARD TYPE	REACH	ID	BOD	ORG-N	COLI	NCM	DO
NONPOINT	1	MB	10.00	0.00	0.00	4.40	0.00
NONPOINT	2	MB	16.00	0.00	0.00	7.50	0.00
NONPOINT	3	MB	26.00	0.00	0.00	7.30	0.00
NONPOINT	4	MB	16.00	0.00	0.00	4.40	0.00
NONPOINT	5	MB	22.00	0.00	0.00	5.50	0.00
NONPOINT	6	MB	27.00	0.00	0.00	5.80	0.00

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NONPOINT          7   MB      29.00     0.00      0.00      5.10      0.00
NONPOINT          8   MB      15.00     0.00      0.00      2.50      0.00
NONPOINT          9   MB      20.00     0.00      0.00      0.10      0.00
NONPOINT         10   MB       0.00     0.00      0.00      0.00      0.00
NONPOINT         11   MB      18.00     0.00      0.00      1.00      0.00
NONPOINT         12   MB      16.00     0.00      0.00      0.80      0.00
NONPOINT         13   MB      14.00     0.00      0.00      0.80      0.00
NONPOINT         14   MB      14.00     0.00      0.00      0.80      0.00
NONPOINT         15   MB      14.00     0.00      0.00      0.80      0.00
ENDATA19

$$$ DATA TYPE 20 (HEADWATER FOR FLOW, TEMPERATURE, SALINITY AND CONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                 UNIT          FLOW      TEMP     SALIN     CM-I      CM-II

HDWTR-1           1      Marsh @ Welcome Rd.    0         0.00142    25.200    0.000    20.400     5.400
ENDATA20

$$$ DATA TYPE 21 (HEADWATER DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE      ELEMENT   NAME                          DO        BOD      ORG-N       NH3     NO3+2

HDWTR-2           1      Marsh @ Welcome Rd.         1.77      12.19       0.00      0.00      0.00
ENDATA21

$$$ DATA TYPE 22 (HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                          PHOS     CHL A      COLI       NCM

HDWTR-3           1      Marsh @ Welcome Rd.           0.00     11.90      0.00     11.47
ENDATA22

$$$ DATA TYPE 23 (JUNCTION DATA) $$$

CARD TYPE    JUNCTION  UPSTRM     RIVER     NAME
              ELEMENT  ELEMENT    KILOM

ENDATA23

$$$ DATA TYPE 24 (WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE  ELEMENT    RKILO  NAME                               FLOW      TEMP       SAL      CM-I      CM-II

ENDATA24

$$$ DATA TYPE 25 (WASTELOAD DATA FOR DO, BOD, AND NITROGEN) $$$

                                                                         % BOD                               %
CARD TYPE      ELEMENT   NAME                          DO        BOD      RMVL      ORG-N       NH3     NITRIF      NO3+2

ENDATA25

$$$ DATA TYPE 26 (WASTELOAD DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$
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CARD TYPE     ELEMENT   NAME                          PHOS      CHL A      COLI       NCM

ENDATA26

$$$ DATA TYPE 27 (LOWER BOUNDARY CONDITIONS) $$$

CARD TYPE    CONSTITUENT                     CONCENTRATION

LOWER BC     TEMPERATURE                        =     29.110 deg C
LOWER BC     SALINITY                           =      0.000 ppt
LOWER BC     CONSERVATIVE MATERIAL  I           =      6.400 MG/L
LOWER BC     CONSERVATIVE MATERIAL II           =      2.800 MG/L
LOWER BC     DISSOLVED OXYGEN                   =      6.800 mg/L
LOWER BC     BIOCHEMICAL OXYGEN DEMAND          =      3.420 mg/L
LOWER BC     ORGANIC NITROGEN                   =      0.220 mg/L
LOWER BC     AMMONIA NITROGEN                   =      0.000 mg/L
LOWER BC     NITRATE+NITRITE NITROGEN           =      0.030 mg/L
LOWER BC     PHOSPHORUS                         =      0.120 mg/L
LOWER BC     CHLOROPHYLL A                      =      3.930 µg/L
LOWER BC     COLIFORM                           =      0.000 #/100 mL
LOWER BC     NONCONSERVATIVE MATERIAL           =      0.360 mg/L
ENDATA27

$$$ DATA TYPE 28 (RESERVED FOR FUTURE DATA INPUT) $$$

 CARD TYPE

ENDATA28

$$$ DATA TYPE 29 (SENSITIVITY ANALYSIS DATA) $$$

CARD TYPE      PARAMETER     COL 1     COL 2     COL 3     COL 4     COL 5     COL 6     COL 7     COL 8

ENDATA29

$$$ DATA TYPE 30 (PLOT CONTROL CARDS) $$$


NUMBER OF PLOTS =  5
NUMBER OF REACHES IN PLOT 1 =   4
PLOT RCH  1  2  3  4
NUMBER OF REACHES IN PLOT 2 =   4
PLOT RCH  5  6  7  8
NUMBER OF REACHES IN PLOT 3 =   4
PLOT RCH  9 10 11 12
NUMBER OF REACHES IN PLOT 4 =   3
PLOT RCH 13 14 15
NUMBER OF REACHES IN PLOT 5 =  15
PLOT RCH  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
ENDATA30

$$$ DATA TYPE 31 (OVERLAY PLOT DATA) $$$
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OVERLAY 1  marshcal2presentation.ovl       Marsh Bayou: Welcome Rd.-RKM 6.0
OVERLAY 2  marshcal2presentation.ovl       Marsh Bayou: RKM 6.0-RKM 2.8
OVERLAY 3  marshcal2presentation.ovl       Marsh Bayou: RKM 2.8-UT LDB (RKM 1.6)
OVERLAY 4  marshcal2presentation.ovl       Marsh Bayou: UT LDB(RKM 1.6)-CAL. R.
OVERLAY 5  marshcal2presentation.ovl       Marsh Bayou: Welcome Rd.-Calcasieu R.
ENDATA31

     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN    1 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11
     .....GRAPHICS DATA FOR PLOT 2 WRITTEN TO UNIT 12
     .....GRAPHICS DATA FOR PLOT 3 WRITTEN TO UNIT 13
     .....GRAPHICS DATA FOR PLOT 4 WRITTEN TO UNIT 14
     .....GRAPHICS DATA FOR PLOT 5 WRITTEN TO UNIT 15
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CAPSULE SUMMARY
Marsh @ Welcome Rd.

DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD
HDWTR	0.00142	25.20	0.00	1.77	12.19	0.00	0.00	11.90					
9.43	0.00142	25.20	0.00	2.34	15.74	0.00	0.00	11.90	1.58	0.12	0.07	0.00	2.50
9.34	0.00142	25.20	0.00	2.38	18.49	0.00	0.00	11.90	1.58	0.12	0.07	0.00	2.50
9.24	0.00142	25.20	0.00	2.30	20.61	0.00	0.00	11.90	1.58	0.12	0.07	0.00	2.50
9.15	0.00142	25.20	0.00	2.21	22.25	0.00	0.00	11.90	1.58	0.12	0.07	0.00	2.50
9.06	0.00142	25.20	0.00	2.13	23.51	0.00	0.00	11.90	1.58	0.12	0.07	0.00	2.50
8.97	0.00142	25.20	0.00	2.07	24.49	0.00	0.00	11.90	1.58	0.12	0.07	0.00	2.50
8.88	0.00142	25.20	0.00	2.01	25.25	0.00	0.00	11.90	1.58	0.12	0.07	0.00	2.50
8.78	0.00142	25.20	0.00	1.97	25.84	0.00	0.00	11.90	1.58	0.12	0.07	0.00	2.50
8.69	0.00142	25.20	0.00	1.94	26.29	0.00	0.00	11.90	1.58	0.12	0.07	0.00	2.50
8.60	0.00142	25.20	0.00	1.92	26.64	0.00	0.00	11.90	1.58	0.11	0.07	0.00	2.50
8.50	0.00142	25.17	0.00	2.06	26.12	0.00	0.00	11.90	1.21	0.12	0.07	0.00	1.59
8.40	0.00142	25.14	0.00	2.07	25.63	0.00	0.00	11.90	1.21	0.12	0.07	0.00	1.59
8.30	0.00142	25.11	0.00	2.05	25.16	0.00	0.00	11.90	1.21	0.12	0.07	0.00	1.59
8.20	0.00142	25.08	0.00	2.03	24.71	0.00	0.00	11.90	1.21	0.13	0.07	0.00	1.58
8.10	0.00142	25.05	0.00	2.06	24.39	0.00	0.00	11.90	1.20	0.13	0.07	0.00	1.58
8.00	0.00142	25.02	0.00	2.10	24.19	0.00	0.00	11.90	1.20	0.13	0.07	0.00	1.58
7.90	0.00142	24.99	0.00	2.14	24.07	0.00	0.00	11.90	1.20	0.13	0.07	0.00	1.57
7.80	0.00142	24.96	0.00	2.16	24.01	0.00	0.00	11.90	1.20	0.13	0.07	0.00	1.57
7.70	0.00142	24.93	0.00	2.18	23.98	0.00	0.00	11.90	1.20	0.13	0.07	0.00	1.57
7.60	0.00142	24.90	0.00	2.19	23.96	0.00	0.00	11.90	1.20	0.13	0.07	0.00	1.57
7.51	0.00142	24.90	0.00	2.27	24.01	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57
7.41	0.00142	24.90	0.00	2.28	24.03	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57
7.32	0.00142	24.90	0.00	2.28	24.04	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57
7.22	0.00142	24.90	0.00	2.28	24.05	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57
7.13	0.00142	24.90	0.00	2.28	24.05	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57

7.03	0.00142	24.90	0.00	2.28	24.05	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57
6.94	0.00142	24.90	0.00	2.28	24.05	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57
6.84	0.00142	24.90	0.00	2.28	24.05	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57
6.75	0.00142	24.90	0.00	2.28	24.05	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57
6.65	0.00142	24.90	0.00	2.28	24.05	0.00	0.00	11.90	1.01	0.13	0.07	0.00	1.57
6.52	0.00142	24.84	0.00	2.10	22.76	0.00	0.00	11.90	1.01	0.12	0.07	0.00	1.90
6.39	0.00142	24.77	0.00	2.18	22.20	0.00	0.00	11.90	1.01	0.12	0.07	0.00	1.89
6.26	0.00142	24.71	0.00	2.25	22.01	0.00	0.00	11.90	1.01	0.12	0.07	0.00	1.88
6.13	0.00142	24.64	0.00	2.40	22.37	0.00	0.00	11.90	1.01	0.12	0.07	0.00	1.88
6.00	0.00142	24.58	0.00	2.53	23.00	0.00	0.00	11.90	1.01	0.11	0.07	0.00	1.87
5.90	0.00142	24.58	0.00	1.94	22.61	0.00	0.00	11.90	1.09	0.11	0.07	0.00	2.67
5.80	0.00142	24.58	0.00	1.89	22.42	0.00	0.00	11.90	1.09	0.11	0.07	0.00	2.67
5.70	0.00142	24.58	0.00	1.90	22.32	0.00	0.00	11.90	1.09	0.11	0.07	0.00	2.67
5.60	0.00142	24.58	0.00	1.92	22.27	0.00	0.00	11.90	1.09	0.11	0.07	0.00	2.67
5.50	0.00142	24.58	0.00	1.92	22.25	0.00	0.00	11.90	1.09	0.11	0.07	0.00	2.67
5.40	0.00142	24.58	0.00	1.93	22.24	0.00	0.00	11.90	1.09	0.11	0.07	0.00	2.67
5.30	0.00142	24.58	0.00	1.93	22.23	0.00	0.00	11.90	1.09	0.11	0.07	0.00	2.67
5.20	0.00142	24.58	0.00	1.93	22.23	0.00	0.00	11.90	1.09	0.11	0.07	0.00	2.67
5.10	0.00142	24.55	0.00	1.42	21.05	0.00	0.00	11.90	1.18	0.10	0.07	0.00	3.46
5.00	0.00142	24.51	0.00	1.49	20.70	0.00	0.00	11.90	1.18	0.10	0.07	0.00	3.45
4.90	0.00142	24.48	0.00	1.58	20.76	0.00	0.00	11.90	1.17	0.10	0.07	0.00	3.45
4.80	0.00142	24.45	0.00	1.65	21.01	0.00	0.00	11.90	1.17	0.10	0.07	0.00	3.44
4.70	0.00142	24.42	0.00	1.71	21.37	0.00	0.00	11.90	1.17	0.10	0.07	0.00	3.43
4.60	0.00142	24.38	0.00	1.76	21.78	0.00	0.00	11.90	1.17	0.09	0.07	0.00	3.43
4.50	0.00142	24.35	0.00	1.80	22.23	0.00	0.00	11.90	1.17	0.09	0.07	0.00	3.42
4.40	0.00142	24.32	0.00	1.85	22.70	0.00	0.00	11.90	1.17	0.09	0.07	0.00	3.41
4.30	0.00142	24.28	0.00	1.90	23.21	0.00	0.00	11.90	1.17	0.09	0.07	0.00	3.40
4.20	0.00142	24.25	0.00	1.95	23.74	0.00	0.00	11.90	1.17	0.09	0.07	0.00	3.40
4.10	0.00142	24.25	0.00	1.29	23.28	0.00	0.00	11.90	1.26	0.10	0.08	0.00	3.72
4.00	0.00142	24.25	0.00	1.26	23.06	0.00	0.00	11.90	1.26	0.10	0.08	0.00	3.72
3.90	0.00142	24.25	0.00	1.27	22.96	0.00	0.00	11.90	1.26	0.10	0.08	0.00	3.72
3.80	0.00142	24.25	0.00	1.28	22.92	0.00	0.00	11.90	1.26	0.10	0.08	0.00	3.72
3.70	0.00142	24.25	0.00	1.29	22.89	0.00	0.00	11.90	1.26	0.10	0.08	0.00	3.72
3.60	0.00142	24.25	0.00	1.29	22.88	0.00	0.00	11.90	1.26	0.10	0.08	0.00	3.72
3.50	0.00142	24.25	0.00	1.29	22.88	0.00	0.00	11.90	1.26	0.10	0.08	0.00	3.72
3.40	0.00142	24.25	0.00	1.30	22.88	0.00	0.00	11.90	1.26	0.10	0.08	0.00	3.72
3.30	0.00142	24.25	0.00	1.30	22.88	0.00	0.00	11.90	1.26	0.10	0.08	0.00	3.72
3.20	0.00142	24.20	0.00	1.33	20.57	0.00	0.00	11.90	1.26	0.12	0.08	0.00	3.52
3.10	0.00142	24.15	0.00	1.22	18.37	0.00	0.00	11.90	1.26	0.13	0.08	0.00	3.51
3.00	0.00142	24.10	0.00	1.24	16.96	0.00	0.00	11.90	1.26	0.14	0.08	0.00	3.50
2.90	0.00142	24.05	0.00	1.34	16.42	0.00	0.00	11.90	1.26	0.14	0.08	0.00	3.48
2.80	0.00142	24.00	0.00	1.49	13.96	0.00	0.00	11.90	1.25	0.15	0.08	0.00	3.47
2.75	0.00142	24.14	0.00	0.73	12.53	0.00	0.00	11.90	0.70	0.13	0.08	0.00	4.02
2.70	0.00142	24.27	0.00	0.77	12.03	0.00	0.00	11.90	0.70	0.13	0.08	0.00	4.06
2.65	0.00142	24.41	0.00	1.06	11.33	0.00	0.00	11.90	0.70	0.14	0.08	0.00	4.09
2.60	0.00142	24.54	0.00	1.68	10.33	0.00	0.00	11.90	0.71	0.15	0.08	0.00	4.13
2.55	0.00142	24.68	0.00	2.81	8.89	0.00	0.00	11.90	0.71	0.16	0.08	0.00	4.16
2.55	0.00142	25.36	0.00	3.82	7.85	0.00	0.00	11.90	553.80	0.00	0.00	0.00	0.00
2.44	0.00142	25.36	0.00	3.32	7.66	0.00	0.00	11.90	1.02	0.19	0.09	0.00	4.62
2.33	0.00142	25.36	0.00	2.75	7.34	0.00	0.00	11.90	1.02	0.19	0.09	0.00	4.62
2.22	0.00142	25.36	0.00	2.49	7.05	0.00	0.00	11.90	1.02	0.19	0.09	0.00	4.62
2.11	0.00142	25.36	0.00	2.48	6.79	0.00	0.00	11.90	1.02	0.19	0.09	0.00	4.62
2.00	0.00142	25.36	0.00	2.72	6.54	0.00	0.00	11.90	1.02	0.19	0.09	0.00	4.62
1.90	0.00142	25.52	0.00	3.19	6.32	0.00	0.00	11.90	0.90	0.19	0.09	0.00	2.83

1.80	0.00142	25.68	0.00	3.61	6.11	0.00	0.00	11.90	0.91	0.19	0.09	0.00	2.86
1.70	0.00142	25.84	0.00	4.08	5.88	0.00	0.00	11.90	0.91	0.20	0.09	0.00	2.89
1.60	0.00142	26.00	0.00	4.68	5.63	0.00	0.00	11.90	0.91	0.20	0.09	0.00	2.92
1.50	0.00142	27.04	0.00	5.39	5.38	0.00	0.00	11.90	2.65	0.21	0.09	0.00	3.12
1.40	0.00142	28.07	0.00	5.72	5.11	0.00	0.00	11.90	2.70	0.22	0.10	0.00	3.33
1.30	0.00142	29.11	0.00	5.92	4.81	0.00	0.00	11.90	2.75	0.23	0.10	0.00	3.55
1.20	0.00142	29.11	0.00	6.10	4.49	0.00	0.00	11.90	2.72	0.23	0.10	0.00	2.66
1.10	0.00142	29.11	0.00	6.22	4.22	0.00	0.00	11.90	2.72	0.23	0.10	0.00	2.66
1.00	0.00142	29.11	0.00	6.30	3.98	0.00	0.00	11.90	2.72	0.23	0.10	0.00	2.66
0.90	0.00142	29.11	0.00	6.36	3.77	0.00	0.00	11.90	2.72	0.23	0.10	0.00	2.66
0.80	0.00142	29.11	0.00	6.42	3.57	0.00	0.00	11.90	2.72	0.23	0.10	0.00	2.66
0.70	0.00142	29.11	0.00	6.50	3.38	0.00	0.00	10.90	2.70	0.23	0.10	0.00	2.13
0.60	0.00142	29.11	0.00	6.55	3.25	0.00	0.00	9.91	2.70	0.23	0.10	0.00	2.13
0.50	0.00142	29.11	0.00	6.58	3.16	0.00	0.00	8.91	2.70	0.23	0.10	0.00	2.13
0.40	0.00142	29.11	0.00	6.60	3.11	0.00	0.00	7.91	2.70	0.23	0.10	0.00	2.13
0.30	0.00142	29.11	0.00	6.63	3.10	0.00	0.00	6.92	2.70	0.23	0.10	0.00	2.13
0.20	0.00142	29.11	0.00	6.65	3.14	0.00	0.00	5.92	2.70	0.23	0.10	0.00	2.13
0.10	0.00142	29.11	0.00	6.68	3.21	0.00	0.00	4.93	2.70	0.23	0.10	0.00	2.13
0.00	0.00142	29.11	0.00	6.75	3.33	0.00	0.00	3.93	2.70	0.23	0.10	0.00	2.13

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH		DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
			HDWTR	0.001	25.2	0.0	1.8	12.2	0.0	0.0	11.9											
1	MB	1	9.43	0.001	25.2	0.0	2.3	15.7	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.12	0.07	0.00	2.50
2	MB	1	9.34	0.001	25.2	0.0	2.4	18.5	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.12	0.07	0.00	2.50
3	MB	1	9.24	0.001	25.2	0.0	2.3	20.6	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.12	0.07	0.00	2.50
4	MB	1	9.15	0.001	25.2	0.0	2.2	22.2	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.12	0.07	0.00	2.50
5	MB	1	9.06	0.001	25.2	0.0	2.1	23.5	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.12	0.07	0.00	2.50
6	MB	1	8.97	0.001	25.2	0.0	2.1	24.5	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.12	0.07	0.00	2.50
7	MB	1	8.88	0.001	25.2	0.0	2.0	25.3	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.12	0.07	0.00	2.50
8	MB	1	8.78	0.001	25.2	0.0	2.0	25.8	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.12	0.07	0.00	2.50
9	MB	1	8.69	0.001	25.2	0.0	1.9	26.3	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.12	0.07	0.00	2.50
10	MB	1	8.60	0.001	25.2	0.0	1.9	26.6	0.0	0.0	11.9	0.0	0.49	4.4	0.001	0.001	8.2	1.577	0.11	0.07	0.00	2.50
11	MB	2	8.50	0.001	25.2	0.0	2.1	26.1	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.2	1.207	0.12	0.07	0.00	1.59
12	MB	2	8.40	0.001	25.1	0.0	2.1	25.6	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.2	1.206	0.12	0.07	0.00	1.59
13	MB	2	8.30	0.001	25.1	0.0	2.1	25.2	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.2	1.206	0.12	0.07	0.00	1.59
14	MB	2	8.20	0.001	25.1	0.0	2.0	24.7	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.3	1.205	0.13	0.07	0.00	1.58
15	MB	2	8.10	0.001	25.0	0.0	2.1	24.4	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.3	1.204	0.13	0.07	0.00	1.58
16	MB	2	8.00	0.001	25.0	0.0	2.1	24.2	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.3	1.204	0.13	0.07	0.00	1.58
17	MB	2	7.90	0.001	25.0	0.0	2.1	24.1	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.3	1.203	0.13	0.07	0.00	1.57
18	MB	2	7.80	0.001	25.0	0.0	2.2	24.0	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.3	1.202	0.13	0.07	0.00	1.57
19	MB	2	7.70	0.001	24.9	0.0	2.2	24.0	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.3	1.202	0.13	0.07	0.00	1.57
20	MB	2	7.60	0.001	24.9	0.0	2.2	24.0	0.0	0.0	11.9	0.0	0.64	5.4	0.000	0.000	8.3	1.201	0.13	0.07	0.00	1.57
21	MB	3	7.51	0.001	24.9	0.0	2.3	24.0	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57
22	MB	3	7.41	0.001	24.9	0.0	2.3	24.0	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57
23	MB	3	7.32	0.001	24.9	0.0	2.3	24.0	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57
24	MB	3	7.22	0.001	24.9	0.0	2.3	24.0	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57
25	MB	3	7.13	0.001	24.9	0.0	2.3	24.0	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57
26	MB	3	7.03	0.001	24.9	0.0	2.3	24.1	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57
27	MB	3	6.94	0.001	24.9	0.0	2.3	24.1	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57
28	MB	3	6.84	0.001	24.9	0.0	2.3	24.1	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57

29	MB 3	6.75	0.001	24.9	0.0	2.3	24.1	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57
30	MB 3	6.65	0.001	24.9	0.0	2.3	24.1	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.011	0.13	0.07	0.00	1.57
31	MB 4	6.52	0.001	24.8	0.0	2.1	22.8	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.010	0.12	0.07	0.00	1.90
32	MB 4	6.39	0.001	24.8	0.0	2.2	22.2	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.009	0.12	0.07	0.00	1.89
33	MB 4	6.26	0.001	24.7	0.0	2.3	22.0	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.008	0.12	0.07	0.00	1.88
34	MB 4	6.13	0.001	24.6	0.0	2.4	22.4	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.007	0.12	0.07	0.00	1.88
35	MB 4	6.00	0.001	24.6	0.0	2.5	23.0	0.0	0.0	11.9	0.0	0.76	7.8	0.000	0.000	8.3	1.006	0.11	0.07	0.00	1.87
36	MB 5	5.90	0.001	24.6	0.0	1.9	22.6	0.0	0.0	11.9	0.0	0.70	10.0	0.000	0.000	8.3	1.093	0.11	0.07	0.00	2.67
37	MB 5	5.80	0.001	24.6	0.0	1.9	22.4	0.0	0.0	11.9	0.0	0.70	10.0	0.000	0.000	8.3	1.093	0.11	0.07	0.00	2.67
38	MB 5	5.70	0.001	24.6	0.0	1.9	22.3	0.0	0.0	11.9	0.0	0.70	10.0	0.000	0.000	8.3	1.093	0.11	0.07	0.00	2.67
39	MB 5	5.60	0.001	24.6	0.0	1.9	22.3	0.0	0.0	11.9	0.0	0.70	10.0	0.000	0.000	8.3	1.093	0.11	0.07	0.00	2.67
40	MB 5	5.50	0.001	24.6	0.0	1.9	22.2	0.0	0.0	11.9	0.0	0.70	10.0	0.000	0.000	8.3	1.093	0.11	0.07	0.00	2.67
41	MB 5	5.40	0.001	24.6	0.0	1.9	22.2	0.0	0.0	11.9	0.0	0.70	10.0	0.000	0.000	8.3	1.093	0.11	0.07	0.00	2.67
42	MB 5	5.30	0.001	24.6	0.0	1.9	22.2	0.0	0.0	11.9	0.0	0.70	10.0	0.000	0.000	8.3	1.093	0.11	0.07	0.00	2.67
43	MB 5	5.20	0.001	24.6	0.0	1.9	22.2	0.0	0.0	11.9	0.0	0.70	10.0	0.000	0.000	8.3	1.093	0.11	0.07	0.00	2.67
44	MB 6	5.10	0.001	24.5	0.0	1.4	21.0	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.3	1.176	0.10	0.07	0.00	3.46
45	MB 6	5.00	0.001	24.5	0.0	1.5	20.7	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.3	1.176	0.10	0.07	0.00	3.45
46	MB 6	4.90	0.001	24.5	0.0	1.6	20.8	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.3	1.175	0.10	0.07	0.00	3.45
47	MB 6	4.80	0.001	24.4	0.0	1.6	21.0	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.3	1.174	0.10	0.07	0.00	3.44
48	MB 6	4.70	0.001	24.4	0.0	1.7	21.4	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.4	1.173	0.10	0.07	0.00	3.43
49	MB 6	4.60	0.001	24.4	0.0	1.8	21.8	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.4	1.173	0.09	0.07	0.00	3.43
50	MB 6	4.50	0.001	24.3	0.0	1.8	22.2	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.4	1.172	0.09	0.07	0.00	3.42
51	MB 6	4.40	0.001	24.3	0.0	1.9	22.7	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.4	1.171	0.09	0.07	0.00	3.41
52	MB 6	4.30	0.001	24.3	0.0	1.9	23.2	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.4	1.171	0.09	0.07	0.00	3.40
53	MB 6	4.20	0.001	24.2	0.0	1.9	23.7	0.0	0.0	11.9	0.0	0.65	12.0	0.000	0.000	8.4	1.170	0.09	0.07	0.00	3.40
54	MB 7	4.10	0.001	24.2	0.0	1.3	23.3	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.260	0.10	0.08	0.00	3.72
55	MB 7	4.00	0.001	24.2	0.0	1.3	23.1	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.260	0.10	0.08	0.00	3.72
56	MB 7	3.90	0.001	24.2	0.0	1.3	23.0	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.260	0.10	0.08	0.00	3.72
57	MB 7	3.80	0.001	24.2	0.0	1.3	22.9	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.260	0.10	0.08	0.00	3.72
58	MB 7	3.70	0.001	24.2	0.0	1.3	22.9	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.260	0.10	0.08	0.00	3.72
59	MB 7	3.60	0.001	24.2	0.0	1.3	22.9	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.260	0.10	0.08	0.00	3.72
60	MB 7	3.50	0.001	24.2	0.0	1.3	22.9	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.260	0.10	0.08	0.00	3.72
61	MB 7	3.40	0.001	24.2	0.0	1.3	22.9	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.260	0.10	0.08	0.00	3.72
62	MB 7	3.30	0.001	24.2	0.0	1.3	22.9	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.260	0.10	0.08	0.00	3.72
63	MB 8	3.20	0.001	24.2	0.0	1.3	20.6	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.259	0.12	0.08	0.00	3.52
64	MB 8	3.10	0.001	24.1	0.0	1.2	18.4	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.258	0.13	0.08	0.00	3.51
65	MB 8	3.00	0.001	24.1	0.0	1.2	17.0	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.256	0.14	0.08	0.00	3.50
66	MB 8	2.90	0.001	24.0	0.0	1.3	16.4	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.255	0.14	0.08	0.00	3.48
67	MB 8	2.80	0.001	24.0	0.0	1.5	14.0	0.0	0.0	11.9	0.0	0.60	13.3	0.000	0.000	8.4	1.254	0.15	0.08	0.00	3.47
68	MB 9	2.75	0.001	24.1	0.0	0.7	12.5	0.0	0.0	11.9	0.1	1.08	23.6	0.000	0.000	8.4	0.700	0.13	0.08	0.00	4.02
69	MB 9	2.70	0.001	24.3	0.0	0.8	12.0	0.0	0.0	11.9	0.1	1.08	23.6	0.000	0.000	8.4	0.702	0.13	0.08	0.00	4.06
70	MB 9	2.65	0.001	24.4	0.0	1.1	11.3	0.0	0.0	11.9	0.1	1.08	23.6	0.000	0.000	8.4	0.703	0.14	0.08	0.00	4.09
71	MB 9	2.60	0.001	24.5	0.0	1.7	10.3	0.0	0.0	11.9	0.1	1.08	23.6	0.000	0.000	8.3	0.705	0.15	0.08	0.00	4.13
72	MB 9	2.55	0.001	24.7	0.0	2.8	8.9	0.0	0.0	11.9	0.1	1.08	23.6	0.000	0.000	8.3	0.707	0.16	0.08	0.00	4.16
73	MB 10	2.55	0.001	25.4	0.0	3.8	7.9	0.0	0.0	11.9	0.5	0.30	23.6	0.000	0.000	8.25	53.805	0.00	0.00	0.00	0.00

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH	DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
74	MB 11	2.44	0.001	25.4	0.0	3.3	7.7	0.0	0.0	11.9	0.9	0.76	23.6	0.000	0.000	8.2	1.020	0.19	0.09	0.00	4.62
75	MB 11	2.33	0.001	25.4	0.0	2.8	7.3	0.0	0.0	11.9	0.9	0.76	23.6	0.000	0.000	8.2	1.020	0.19	0.09	0.00	4.62
76	MB 11	2.22	0.001	25.4	0.0	2.5	7.1	0.0	0.0	11.9	0.9	0.76	23.6	0.000	0.000	8.2	1.020	0.19	0.09	0.00	4.62

77	MB	11	2.11	0.001	25.4	0.0	2.5	6.8	0.0	0.0	11.9	0.9	0.76	23.6	0.000	0.000	8.2	1.020	0.19	0.09	0.00	4.62
78	MB	11	2.00	0.001	25.4	0.0	2.7	6.5	0.0	0.0	11.9	0.9	0.76	23.6	0.000	0.000	8.2	1.020	0.19	0.09	0.00	4.62
79	MB	12	1.90	0.001	25.5	0.0	3.2	6.3	0.0	0.0	11.9	0.9	0.86	24.6	0.000	0.000	8.2	0.904	0.19	0.09	0.00	2.83
80	MB	12	1.80	0.001	25.7	0.0	3.6	6.1	0.0	0.0	11.9	0.9	0.86	24.6	0.000	0.000	8.2	0.907	0.19	0.09	0.00	2.86
81	MB	12	1.70	0.001	25.8	0.0	4.1	5.9	0.0	0.0	11.9	0.9	0.86	24.6	0.000	0.000	8.1	0.909	0.20	0.09	0.00	2.89
82	MB	12	1.60	0.001	26.0	0.0	4.7	5.6	0.0	0.0	11.9	0.9	0.86	24.6	0.000	0.000	8.1	0.912	0.20	0.09	0.00	2.92
83	MB	13	1.50	0.001	27.0	0.0	5.4	5.4	0.0	0.0	11.9	0.9	0.99	25.1	0.000	0.000	8.0	2.652	0.21	0.09	0.00	3.12
84	MB	13	1.40	0.001	28.1	0.0	5.7	5.1	0.0	0.0	11.9	0.9	0.99	25.1	0.000	0.000	7.8	2.702	0.22	0.10	0.00	3.33
85	MB	13	1.30	0.001	29.1	0.0	5.9	4.8	0.0	0.0	11.9	0.9	0.99	25.1	0.000	0.000	7.7	2.752	0.23	0.10	0.00	3.55
86	MB	14	1.20	0.001	29.1	0.0	6.1	4.5	0.0	0.0	11.9	1.0	1.00	25.6	0.000	0.000	7.7	2.724	0.23	0.10	0.00	2.66
87	MB	14	1.10	0.001	29.1	0.0	6.2	4.2	0.0	0.0	11.9	1.0	1.00	25.6	0.000	0.000	7.7	2.724	0.23	0.10	0.00	2.66
88	MB	14	1.00	0.001	29.1	0.0	6.3	4.0	0.0	0.0	11.9	1.0	1.00	25.6	0.000	0.000	7.7	2.724	0.23	0.10	0.00	2.66
89	MB	14	0.90	0.001	29.1	0.0	6.4	3.8	0.0	0.0	11.9	1.0	1.00	25.6	0.000	0.000	7.7	2.724	0.23	0.10	0.00	2.66
90	MB	14	0.80	0.001	29.1	0.0	6.4	3.6	0.0	0.0	11.9	1.0	1.00	25.6	0.000	0.000	7.7	2.724	0.23	0.10	0.00	2.66
91	MB	15	0.70	0.001	29.1	0.0	6.5	3.4	0.0	0.0	10.9	1.0	1.01	26.1	0.000	0.000	7.7	2.697	0.23	0.10	0.00	2.13
92	MB	15	0.60	0.001	29.1	0.0	6.5	3.2	0.0	0.0	9.9	1.0	1.01	26.1	0.000	0.000	7.7	2.697	0.23	0.10	0.00	2.13
93	MB	15	0.50	0.001	29.1	0.0	6.6	3.2	0.0	0.0	8.9	1.0	1.01	26.1	0.000	0.000	7.7	2.697	0.23	0.10	0.00	2.13
94	MB	15	0.40	0.001	29.1	0.0	6.6	3.1	0.0	0.0	7.9	1.0	1.01	26.1	0.000	0.000	7.7	2.697	0.23	0.10	0.00	2.13
95	MB	15	0.30	0.001	29.1	0.0	6.6	3.1	0.0	0.0	6.9	1.0	1.01	26.1	0.000	0.000	7.7	2.697	0.23	0.10	0.00	2.13
96	MB	15	0.20	0.001	29.1	0.0	6.6	3.1	0.0	0.0	5.9	1.0	1.01	26.1	0.000	0.000	7.7	2.697	0.23	0.10	0.00	2.13
97	MB	15	0.10	0.001	29.1	0.0	6.7	3.2	0.0	0.0	4.9	1.0	1.01	26.1	0.000	0.000	7.7	2.697	0.23	0.10	0.00	2.13
98	MB	15	0.00	0.001	29.1	0.0	6.7	3.3	0.0	0.0	3.9	1.0	1.01	26.1	0.000	0.000	7.7	2.697	0.23	0.10	0.00	2.13

FINAL REPORT Marsh @ Welcome Rd.
REACH NO. 1 E. WELCOME RD.-RKM 8.6

MARSH BAYOU WATERSHED CALIBRATION MODEL #2
10/06/00; W.C. BERGER, JR.

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
1	HDWTR	0.00142	25.20	0.00	20.40	5.40	1.77	12.19	12.19	0.00	0.00	0.00	0.00	11.90	0.00	11.47

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
1	9.52	9.43	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
2	9.43	9.34	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
3	9.34	9.24	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
4	9.24	9.15	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
5	9.15	9.06	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
6	9.06	8.97	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
7	8.97	8.88	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
8	8.88	8.78	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
9	8.78	8.69	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
10	8.69	8.60	0.00142	0.00	0.00065	1.63	0.49	4.42	199.27	406.59	2.17	0.00	0.000	0.000	0.001
TOT						16.29			1992.73	4065.95					

AVG 0.00065 0.49 4.42 2.17
CUM 16.29

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	9.428	8.23	1.58	0.12	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
2	9.336	8.23	1.58	0.12	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
3	9.244	8.23	1.58	0.12	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
4	9.152	8.23	1.58	0.12	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
5	9.060	8.23	1.58	0.12	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
6	8.968	8.23	1.58	0.12	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
7	8.876	8.23	1.58	0.12	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
8	8.784	8.23	1.58	0.12	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
9	8.692	8.23	1.58	0.12	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
10	8.600	8.23	1.58	0.11	0.07	0.00	2.50	2.50	2.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
20 DEG C RATE				0.10		0.00		1.80	0.00		0.00	0.00	0.00	0.00			0.00	11.06		
AVG 20 DEG C RATE			1.43		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
1	9.428	25.20	0.00	20.40	5.40	2.34	15.74	15.74	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	11.06
2	9.336	25.20	0.00	20.40	5.40	2.38	18.49	18.49	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	10.75
3	9.244	25.20	0.00	20.40	5.40	2.30	20.61	20.61	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	10.53
4	9.152	25.20	0.00	20.40	5.40	2.21	22.25	22.25	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	10.36
5	9.060	25.20	0.00	20.40	5.40	2.13	23.51	23.51	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	10.24
6	8.968	25.20	0.00	20.40	5.40	2.07	24.49	24.49	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	10.15
7	8.876	25.20	0.00	20.40	5.40	2.01	25.25	25.25	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	10.09
8	8.784	25.20	0.00	20.40	5.40	1.97	25.84	25.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	10.04
9	8.692	25.20	0.00	20.40	5.40	1.94	26.29	26.29	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	10.01
10	8.600	25.20	0.00	20.40	5.40	1.92	26.64	26.64	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	9.98

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD mg/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 2 RKM 8.6-UT LDB 10/06/00; W.C. BERGER, JR.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
11	UPR RCH	0.00142	25.20	0.00	20.40	5.40	1.92	26.64	26.64	0.00	0.00	0.00	0.00	11.90	0.00	9.98

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
11	8.60	8.50	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
12	8.50	8.40	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
13	8.40	8.30	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
14	8.30	8.20	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
15	8.20	8.10	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
16	8.10	8.00	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
17	8.00	7.90	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
18	7.90	7.80	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
19	7.80	7.70	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
20	7.70	7.60	0.00142	0.00	0.00041	2.84	0.64	5.42	346.90	541.95	3.47	0.00	0.000	0.000	0.000
TOT						28.36			3469.03	5419.51					
AVG					0.00041		0.64	5.42			3.47				
CUM						44.64									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
11	8.500	8.24	1.21	0.12	0.07	0.00	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.19	0.03
12	8.400	8.24	1.21	0.12	0.07	0.00	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.03
13	8.300	8.25	1.21	0.12	0.07	0.00	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.03
14	8.200	8.25	1.21	0.13	0.07	0.00	1.58	1.58	1.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.03
15	8.100	8.26	1.20	0.13	0.07	0.00	1.58	1.58	1.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
16	8.000	8.26	1.20	0.13	0.07	0.00	1.58	1.58	1.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
17	7.900	8.26	1.20	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.03
18	7.800	8.27	1.20	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.03
19	7.700	8.27	1.20	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.03
20	7.600	8.28	1.20	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.03
20 DEG C RATE				0.10		0.00		1.15	0.00		0.00	0.00	0.00	0.00			0.00	10.75		
AVG 20 DEG C RATE			1.09		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM ENDING TEMP SALN CM-I CM-II DO BOD EBOD ORGN NH3 NO3+2 TOTN PHOS CHL A MACRO COLI NCM

NO.	DIST	DEG C	PPT	*	*	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	**	#/100mL	*
11	8.500	25.17	0.00	20.40	5.40	2.06	26.12	26.12	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	9.78
12	8.400	25.14	0.00	20.40	5.40	2.07	25.63	25.63	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	9.58
13	8.300	25.11	0.00	20.40	5.40	2.05	25.16	25.16	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	9.37
14	8.200	25.08	0.00	20.40	5.40	2.03	24.71	24.71	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	9.16
15	8.100	25.05	0.00	20.40	5.40	2.06	24.39	24.39	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	9.02
16	8.000	25.02	0.00	20.40	5.40	2.10	24.19	24.19	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.95
17	7.900	24.99	0.00	20.40	5.40	2.14	24.07	24.07	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.91
18	7.800	24.96	0.00	20.40	5.40	2.16	24.01	24.01	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.90
19	7.700	24.93	0.00	20.40	5.40	2.18	23.98	23.98	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.90
20	7.600	24.90	0.00	20.40	5.40	2.19	23.96	23.96	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.90

* CM-I = CHLORIDES MG/L　　CM-II = SULFATES MG/L　　NCM = NBOD mg/L

** g/cu m

FINAL REPORT　Marsh @ Welcome Rd.　　MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 3　UT LDB-SITE 4　　10/06/00; W.C. BERGER, JR.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
21	UPR RCH	0.00142	24.90	0.00	20.40	5.40	2.19	23.96	23.96	0.00	0.00	0.00	0.00	11.90	0.00	8.90

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
21	7.60	7.51	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
22	7.51	7.41	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
23	7.41	7.32	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
24	7.32	7.22	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
25	7.22	7.13	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
26	7.13	7.03	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
27	7.03	6.94	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
28	6.94	6.84	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
29	6.84	6.75	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
30	6.75	6.65	0.00142	0.00	0.00024	4.59	0.76	7.77	561.14	738.28	5.91	0.00	0.000	0.000	0.000
TOT						45.87			5611.42	7382.79					
AVG					0.00024		0.76	7.77			5.91				
CUM						90.51									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
21	7.505	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
22	7.410	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
23	7.315	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
24	7.220	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
25	7.125	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
26	7.030	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
27	6.935	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
28	6.840	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
29	6.745	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
30	6.650	8.28	1.01	0.13	0.07	0.00	1.57	1.57	1.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		1.15	0.00		0.00	0.00	0.00	0.00			0.00	10.53		
AVG 20 DEG C RATE			0.92		0.06					0.00									0.03	

* g/sq m/d   ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
21	7.505	24.90	0.00	20.40	5.40	2.27	24.01	24.01	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.93
22	7.410	24.90	0.00	20.40	5.40	2.28	24.03	24.03	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.94
23	7.315	24.90	0.00	20.40	5.40	2.28	24.04	24.04	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.95
24	7.220	24.90	0.00	20.40	5.40	2.28	24.05	24.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.95
25	7.125	24.90	0.00	20.40	5.40	2.28	24.05	24.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.96
26	7.030	24.90	0.00	20.40	5.40	2.28	24.05	24.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.96
27	6.935	24.90	0.00	20.40	5.40	2.28	24.05	24.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.96
28	6.840	24.90	0.00	20.40	5.40	2.28	24.05	24.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.96
29	6.745	24.90	0.00	20.40	5.40	2.28	24.05	24.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.96
30	6.650	24.90	0.00	20.40	5.40	2.28	24.05	24.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.96

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD mg/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 4   RKM 6.65-E. OF TOPSY RD.   10/06/00; W.C. BERGER, JR.

*** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
31	UPR RCH	0.00142	24.90	0.00	20.40	5.40	2.28	24.05	24.05	0.00	0.00	0.00	0.00	11.90	0.00	8.96

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
31	6.65	6.52	0.00142	0.00	0.00024	6.28	0.76	7.77	767.88	1010.28	5.91	0.00	0.000	0.000	0.000
32	6.52	6.39	0.00142	0.00	0.00024	6.28	0.76	7.77	767.88	1010.28	5.91	0.00	0.000	0.000	0.000
33	6.39	6.26	0.00142	0.00	0.00024	6.28	0.76	7.77	767.88	1010.28	5.91	0.00	0.000	0.000	0.000
34	6.26	6.13	0.00142	0.00	0.00024	6.28	0.76	7.77	767.88	1010.28	5.91	0.00	0.000	0.000	0.000
35	6.13	6.00	0.00142	0.00	0.00024	6.28	0.76	7.77	767.88	1010.28	5.91	0.00	0.000	0.000	0.000
TOT						31.38			3839.39	5051.38					
AVG					0.00024		0.76	7.77			5.91				
CUM						121.89									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
31	6.520	8.29	1.01	0.12	0.07	0.00	1.90	1.90	1.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
32	6.390	8.30	1.01	0.12	0.07	0.00	1.89	1.89	1.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
33	6.260	8.31	1.01	0.12	0.07	0.00	1.88	1.88	1.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
34	6.130	8.32	1.01	0.12	0.07	0.00	1.88	1.88	1.88	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
35	6.000	8.33	1.01	0.11	0.07	0.00	1.87	1.87	1.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
20 DEG C RATE				0.10		0.00		1.40	0.00		0.00	0.00	0.00	0.00			0.00	10.36		
AVG 20 DEG C RATE			0.92		0.06					0.00									0.03	

* g/sq m/d　　　　** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
31	6.520	24.84	0.00	20.40	5.40	2.10	22.76	22.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.47
32	6.390	24.77	0.00	20.40	5.40	2.18	22.20	22.20	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.22
33	6.260	24.71	0.00	20.40	5.40	2.25	22.01	22.01	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.12
34	6.130	24.64	0.00	20.40	5.40	2.40	22.37	22.37	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.24
35	6.000	24.58	0.00	20.40	5.40	2.53	23.00	23.00	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.48

* CM-I = CHLORIDES MG/L　　　CM-II = SULFATES MG/L　　　NCM = NBOD mg/L

** g/cu m

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
36	UPR RCH	0.00142	24.58	0.00	20.40	5.40	2.53	23.00	23.00	0.00	0.00	0.00	0.00	11.90	0.00	8.48

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
36	6.00	5.90	0.00142	0.00	0.00020	5.72	0.70	10.01	699.98	1000.91	7.00	0.00	0.000	0.000	0.000
37	5.90	5.80	0.00142	0.00	0.00020	5.72	0.70	10.01	699.98	1000.91	7.00	0.00	0.000	0.000	0.000
38	5.80	5.70	0.00142	0.00	0.00020	5.72	0.70	10.01	699.98	1000.91	7.00	0.00	0.000	0.000	0.000
39	5.70	5.60	0.00142	0.00	0.00020	5.72	0.70	10.01	699.98	1000.91	7.00	0.00	0.000	0.000	0.000
40	5.60	5.50	0.00142	0.00	0.00020	5.72	0.70	10.01	699.98	1000.91	7.00	0.00	0.000	0.000	0.000
41	5.50	5.40	0.00142	0.00	0.00020	5.72	0.70	10.01	699.98	1000.91	7.00	0.00	0.000	0.000	0.000
42	5.40	5.30	0.00142	0.00	0.00020	5.72	0.70	10.01	699.98	1000.91	7.00	0.00	0.000	0.000	0.000
43	5.30	5.20	0.00142	0.00	0.00020	5.72	0.70	10.01	699.98	1000.91	7.00	0.00	0.000	0.000	0.000
TOT						45.77			5599.80	8007.25					
AVG					0.00020		0.70	10.01			7.00				
CUM						167.66									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
36	5.900	8.33	1.09	0.11	0.07	0.00	2.67	2.67	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
37	5.800	8.33	1.09	0.11	0.07	0.00	2.67	2.67	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
38	5.700	8.33	1.09	0.11	0.07	0.00	2.67	2.67	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
39	5.600	8.33	1.09	0.11	0.07	0.00	2.67	2.67	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
40	5.500	8.33	1.09	0.11	0.07	0.00	2.67	2.67	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
41	5.400	8.33	1.09	0.11	0.07	0.00	2.67	2.67	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
42	5.300	8.33	1.09	0.11	0.07	0.00	2.67	2.67	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
43	5.200	8.33	1.09	0.11	0.07	0.00	2.67	2.67	2.67	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.03
20 DEG C RATE				0.10		0.00		2.00	0.00		0.00	0.00	0.00	0.00			0.00	10.24		
AVG 20 DEG C RATE			1.00		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *

36	5.900	24.58	0.00	20.40	5.40	1.94	22.61	22.61	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.07
37	5.800	24.58	0.00	20.40	5.40	1.89	22.42	22.42	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.84
38	5.700	24.58	0.00	20.40	5.40	1.90	22.32	22.32	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.70
39	5.600	24.58	0.00	20.40	5.40	1.92	22.27	22.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.63
40	5.500	24.58	0.00	20.40	5.40	1.92	22.25	22.25	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.58
41	5.400	24.58	0.00	20.40	5.40	1.93	22.24	22.24	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.56
42	5.300	24.58	0.00	20.40	5.40	1.93	22.23	22.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.54
43	5.200	24.58	0.00	20.40	5.40	1.93	22.23	22.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.53

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD mg/L
** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 6   *RKM 5.2-UT LDB*   *10/06/00; W.C. BERGER, JR.*

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
44	UPR RCH	0.00142	24.58	0.00	20.40	5.40	1.93	22.23	22.23	0.00	0.00	0.00	0.00	11.90	0.00	7.53

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
44	5.20	5.10	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
45	5.10	5.00	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
46	5.00	4.90	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
47	4.90	4.80	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
48	4.80	4.70	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
49	4.70	4.60	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
50	4.60	4.50	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
51	4.50	4.40	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
52	4.40	4.30	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
53	4.30	4.20	0.00142	0.00	0.00018	6.37	0.65	12.01	779.80	1200.91	7.80	0.00	0.000	0.000	0.000
TOT						63.74			7797.98	12009.07					
AVG					0.00018		0.65	12.01			7.80				
CUM						231.40									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da

44	5.100	8.33	1.18	0.10	0.07	0.00	3.46	3.46	3.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.03
45	5.000	8.34	1.18	0.10	0.07	0.00	3.45	3.45	3.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.03
46	4.900	8.34	1.17	0.10	0.07	0.00	3.45	3.45	3.45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.03
47	4.800	8.35	1.17	0.10	0.07	0.00	3.44	3.44	3.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.03
48	4.700	8.35	1.17	0.10	0.07	0.00	3.43	3.43	3.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.03
49	4.600	8.36	1.17	0.09	0.07	0.00	3.43	3.43	3.43	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.03
50	4.500	8.36	1.17	0.09	0.07	0.00	3.42	3.42	3.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.03
51	4.400	8.37	1.17	0.09	0.07	0.00	3.41	3.41	3.41	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.03
52	4.300	8.37	1.17	0.09	0.07	0.00	3.40	3.40	3.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.03
53	4.200	8.38	1.17	0.09	0.07	0.00	3.40	3.40	3.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
20 DEG C RATE				0.10		0.00		2.60	0.00		0.00	0.00	0.00	0.00			0.00	10.15		
AVG 20 DEG C RATE			1.08		0.06					0.00									0.03	

* g/sq m/d   ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
44	5.100	24.55	0.00	20.40	5.40	1.42	21.05	21.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.77
45	5.000	24.51	0.00	20.40	5.40	1.49	20.70	20.70	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.42
46	4.900	24.48	0.00	20.40	5.40	1.58	20.76	20.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.30
47	4.800	24.45	0.00	20.40	5.40	1.65	21.01	21.01	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.30
48	4.700	24.42	0.00	20.40	5.40	1.71	21.37	21.37	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.37
49	4.600	24.38	0.00	20.40	5.40	1.76	21.78	21.78	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.48
50	4.500	24.35	0.00	20.40	5.40	1.80	22.23	22.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.62
51	4.400	24.32	0.00	20.40	5.40	1.85	22.70	22.70	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.78
52	4.300	24.28	0.00	20.40	5.40	1.90	23.21	23.21	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.96
53	4.200	24.25	0.00	20.40	5.40	1.95	23.74	23.74	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.15

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD mg/L
** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 7   UT LDB-SITE 3   10/06/00; W.C. BERGER, JR.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
54	UPR RCH	0.00142	24.25	0.00	20.40	5.40	1.95	23.74	23.74	0.00	0.00	0.00	0.00	11.90	0.00	7.15

** HYDRAULIC PARAMETER VALUES **

ELEM BEGIN ENDING FLOW PCT ADVCTV TRAVEL DEPTH WIDTH VOLUME SURFACE X-SECT TIDAL TIDAL DISPRSN MEAN

NO.	DIST km	DIST km	cms	EFF	VELO m/s	TIME days	m	m	cu m	AREA sq m	AREA sq m	PRISM cu m	VELO m/s	sq m/s	VELO m/s
54	4.20	4.10	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
55	4.10	4.00	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
56	4.00	3.90	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
57	3.90	3.80	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
58	3.80	3.70	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
59	3.70	3.60	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
60	3.60	3.50	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
61	3.50	3.40	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
62	3.40	3.30	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
TOT						58.79			7192.11	11929.08					
AVG					0.00018		0.60	13.25			7.99				
CUM						290.19									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
54	4.100	8.38	1.26	0.10	0.08	0.00	3.72	3.72	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
55	4.000	8.38	1.26	0.10	0.08	0.00	3.72	3.72	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
56	3.900	8.38	1.26	0.10	0.08	0.00	3.72	3.72	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
57	3.800	8.38	1.26	0.10	0.08	0.00	3.72	3.72	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
58	3.700	8.38	1.26	0.10	0.08	0.00	3.72	3.72	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
59	3.600	8.38	1.26	0.10	0.08	0.00	3.72	3.72	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
60	3.500	8.38	1.26	0.10	0.08	0.00	3.72	3.72	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
61	3.400	8.38	1.26	0.10	0.08	0.00	3.72	3.72	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
62	3.300	8.38	1.26	0.10	0.08	0.00	3.72	3.72	3.72	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.04
20 DEG C RATE				0.13		0.00		2.85	0.00		0.00	0.00	0.00	0.00			0.00	10.09		
AVG 20 DEG C RATE			1.16		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
54	4.100	24.25	0.00	20.40	5.40	1.29	23.28	23.28	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.55
55	4.000	24.25	0.00	20.40	5.40	1.26	23.06	23.06	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.22
56	3.900	24.25	0.00	20.40	5.40	1.27	22.96	22.96	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.04
57	3.800	24.25	0.00	20.40	5.40	1.28	22.92	22.92	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.94
58	3.700	24.25	0.00	20.40	5.40	1.29	22.89	22.89	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.88
59	3.600	24.25	0.00	20.40	5.40	1.29	22.88	22.88	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.85
60	3.500	24.25	0.00	20.40	5.40	1.29	22.88	22.88	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.83
61	3.400	24.25	0.00	20.40	5.40	1.30	22.88	22.88	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.82
62	3.300	24.25	0.00	20.40	5.40	1.30	22.88	22.88	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.81

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD mg/L
** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 8   SITE 3-LITTLE MARSH B.   10/06/00; W.C. BERGER, JR.

************ REACH INPUTS ************

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
63	UPR RCH	0.00142	24.25	0.00	20.40	5.40	1.30	22.88	22.88	0.00	0.00	0.00	0.00	11.90	0.00	5.81

************ HYDRAULIC PARAMETER VALUES ************

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
63	3.30	3.20	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
64	3.20	3.10	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
65	3.10	3.00	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
66	3.00	2.90	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
67	2.90	2.80	0.00142	0.00	0.00018	6.53	0.60	13.25	799.12	1325.45	7.99	0.00	0.000	0.000	0.000
TOT						32.66			3995.61	6627.27					
AVG					0.00018		0.60	13.25			7.99				
CUM						322.85									

************ BIOLOGICAL AND PHYSICAL COEFFICIENTS ************

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
63	3.200	8.39	1.26	0.12	0.08	0.00	3.52	3.52	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.10	0.04
64	3.100	8.39	1.26	0.13	0.08	0.00	3.51	3.51	3.51	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.04
65	3.000	8.40	1.26	0.14	0.08	0.00	3.50	3.50	3.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.04
66	2.900	8.41	1.26	0.14	0.08	0.00	3.48	3.48	3.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.04
67	2.800	8.42	1.25	0.15	0.08	0.00	3.47	3.47	3.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.04
20 DEG C RATE				0.13		0.00		2.70	0.00		0.00	0.00	0.00	0.00			0.00	10.04		
AVG 20 DEG C RATE			1.16		0.07					0.00									0.04	

* g/sq m/d   ** mg/L/day

************ WATER QUALITY CONSTITUENT VALUES ************

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
63	3.200	24.20	0.00	20.40	5.40	1.33	20.57	20.57	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.14
64	3.100	24.15	0.00	20.40	5.40	1.22	18.37	18.37	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.50
65	3.000	24.10	0.00	20.40	5.40	1.24	16.96	16.96	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.06
66	2.900	24.05	0.00	20.40	5.40	1.34	16.42	16.42	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.86
67	2.800	24.00	0.00	12.95	4.02	1.49	13.96	13.96	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.91

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD mg/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED CALIBRATION MODEL #2

REACH NO. 9   LITTLE MARSH B.-BEAVER DAM   10/06/00; W.C. BERGER, JR.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
68	UPR RCH	0.00142	24.00	0.00	12.95	4.02	1.49	13.96	13.96	0.00	0.00	0.00	0.00	11.90	0.00	1.91

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
68	2.80	2.75	0.00142	0.00	0.00006	10.46	1.08	23.62	1279.24	1181.04	25.58	0.00	0.000	0.050	0.000
69	2.75	2.70	0.00142	0.00	0.00006	10.46	1.08	23.62	1279.24	1181.04	25.58	0.00	0.000	0.050	0.000
70	2.70	2.65	0.00142	0.00	0.00006	10.46	1.08	23.62	1279.24	1181.04	25.58	0.00	0.000	0.050	0.000
71	2.65	2.60	0.00142	0.00	0.00006	10.46	1.08	23.62	1279.24	1181.04	25.58	0.00	0.000	0.050	0.000
72	2.60	2.55	0.00142	0.00	0.00006	10.46	1.08	23.62	1279.24	1181.04	25.58	0.00	0.000	0.050	0.000
TOT						52.28			6396.20	5905.22					
AVG					0.00006		1.08	23.62			25.58				
CUM						375.13									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
68	2.750	8.40	0.70	0.13	0.08	0.00	4.02	4.02	4.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.04
69	2.700	8.38	0.70	0.13	0.08	0.00	4.06	4.06	4.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.04
70	2.650	8.35	0.70	0.14	0.08	0.00	4.09	4.09	4.09	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.12	0.04
71	2.600	8.33	0.71	0.15	0.08	0.00	4.13	4.13	4.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.04

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
72	2.550	8.31	0.71	0.16	0.08	0.00	4.16	4.16	4.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.13	0.04
20 DEG C RATE				0.13		0.00		3.10	0.00		0.00	0.00	0.00	0.00			0.00	10.01		
AVG 20 DEG C RATE			0.65		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
68	2.750	24.14	0.00	11.09	3.67	0.73	12.53	12.53	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.94
69	2.700	24.27	0.00	10.58	3.58	0.77	12.03	12.03	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.75
70	2.650	24.41	0.00	10.03	3.47	1.06	11.33	11.33	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.62
71	2.600	24.54	0.00	9.46	3.37	1.68	10.33	10.33	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.54
72	2.550	24.68	0.00	8.85	3.26	2.81	8.89	8.89	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.49

* *CM-I = CHLORIDES* CM-II = SULFATES NCM = NBOD
MG/L MG/L mg/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 10 BEAVER DAM 10/06/00; W.C. BERGER, JR.

** REACH INPUTS **

ELEM NO.	TYPE	*FLOW* cms	*TEMP* DEG C	*SALN* PPT	*CM-I* *	*CM-II* *	*DO* mg/L	*BOD* mg/L	*EBOD* mg/L	*ORGN* mg/L	*NH3* mg/L	*NO3+2* mg/L	*PHOS* mg/L	*CHL A* µg/L	*COLI* #/100mL	*NCM* *
73	UPR RCH	0.00142	24.68	0.00	8.85	3.26	2.81	8.89	8.89	0.00	0.00	0.00	0.00	11.90	0.00	0.49

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
73	2.55	2.55	0.00142	0.00	0.00020	0.06	0.30	23.62	7.00	23.62	7.00	0.00	0.000	0.500	0.000
TOT						0.06			7.00	23.62					
AVG					0.00020		0.30	23.62			7.00				
CUM						375.19									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da

73	2.549	8.21	553.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 DEG C RATE				0.00		0.00		0.00	0.00		0.00	0.00	0.00	0.00			0.00	9.98		
AVG 20 DEG C RATE			500.00		0.00					0.00									0.00	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
73	2.549	25.36	0.00	8.54	3.20	3.82	7.85	7.85	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.49

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD mg/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 11 BEAVER DAM-RKM 2.0 10/06/00; W.C. BERGER, JR.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
74	UPR RCH	0.00142	25.36	0.00	8.54	3.20	3.82	7.85	7.85	0.00	0.00	0.00	0.00	11.90	0.00	0.49

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
74	2.55	2.44	0.00142	0.00	0.00008	16.14	0.76	23.62	1974.88	2598.30	17.95	0.00	0.000	0.900	0.000
75	2.44	2.33	0.00142	0.00	0.00008	16.14	0.76	23.62	1974.88	2598.30	17.95	0.00	0.000	0.900	0.000
76	2.33	2.22	0.00142	0.00	0.00008	16.14	0.76	23.62	1974.88	2598.30	17.95	0.00	0.000	0.900	0.000
77	2.22	2.11	0.00142	0.00	0.00008	16.14	0.76	23.62	1974.88	2598.30	17.95	0.00	0.000	0.900	0.000
78	2.11	2.00	0.00142	0.00	0.00008	16.14	0.76	23.62	1974.88	2598.30	17.95	0.00	0.000	0.900	0.000
TOT						80.71			9874.41	12991.49					
AVG					0.00008		0.76	23.62			17.95				
CUM						455.90									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT

		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
74	2.440	8.21	1.02	0.19	0.09	0.00	4.62	4.62	4.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
75	2.330	8.21	1.02	0.19	0.09	0.00	4.62	4.62	4.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
76	2.220	8.21	1.02	0.19	0.09	0.00	4.62	4.62	4.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
77	2.110	8.21	1.02	0.19	0.09	0.00	4.62	4.62	4.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
78	2.000	8.21	1.02	0.19	0.09	0.00	4.62	4.62	4.62	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
20 DEG C RATE				0.15		0.00		3.30	0.00		0.00	0.00	0.00	0.00			0.00	9.78		
AVG 20 DEG C RATE			0.92		0.08					0.00									0.04	

* g/sq m/d　　** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
74	2.440	25.36	0.00	8.48	3.19	3.32	7.66	7.66	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.49
75	2.330	25.36	0.00	8.37	3.17	2.75	7.34	7.34	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.49
76	2.220	25.36	0.00	8.25	3.14	2.49	7.05	7.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.48
77	2.110	25.36	0.00	8.13	3.12	2.48	6.79	6.79	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.48
78	2.000	25.36	0.00	8.01	3.10	2.72	6.54	6.54	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.47

* CM-I = CHLORIDES MG/L　　CM-II = SULFATES MG/L　　NCM = NBOD mg/L
** g/cu m

FINAL REPORT　Marsh @ Welcome Rd.　　MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 12　RKM 2.0-UT LDB　　10/06/00; W.C. BERGER, JR.

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
79	UPR RCH	0.00142	25.36	0.00	8.01	3.10	2.72	6.54	6.54	0.00	0.00	0.00	0.00	11.90	0.00	0.47

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
79	2.00	1.90	0.00142	0.00	0.00007	17.31	0.86	24.62	2117.56	2462.09	21.18	0.00	0.000	0.900	0.000
80	1.90	1.80	0.00142	0.00	0.00007	17.31	0.86	24.62	2117.56	2462.09	21.18	0.00	0.000	0.900	0.000
81	1.80	1.70	0.00142	0.00	0.00007	17.31	0.86	24.62	2117.56	2462.09	21.18	0.00	0.000	0.900	0.000
82	1.70	1.60	0.00142	0.00	0.00007	17.31	0.86	24.62	2117.56	2462.09	21.18	0.00	0.000	0.900	0.000
TOT						69.23			8470.25	9848.36					

AVG 0.00007 0.86 24.62 21.18
CUM 525.13

******************** BIOLOGICAL AND PHYSICAL COEFFICIENTS ********************

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
79	1.900	8.18	0.90	0.19	0.09	0.00	2.83	2.83	2.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
80	1.800	8.16	0.91	0.19	0.09	0.00	2.86	2.86	2.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
81	1.700	8.14	0.91	0.20	0.09	0.00	2.89	2.89	2.89	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
82	1.600	8.11	0.91	0.20	0.09	0.00	2.92	2.92	2.92	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.15	0.05
20 DEG C RATE				0.15		0.00		2.00	0.00		0.00	0.00	0.00	0.00			0.00	9.58		
AVG 20 DEG C RATE			0.81		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

******************** WATER QUALITY CONSTITUENT VALUES ********************

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
79	1.900	25.52	0.00	7.91	3.08	3.19	6.32	6.32	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.46
80	1.800	25.68	0.00	7.82	3.06	3.61	6.11	6.11	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.45
81	1.700	25.84	0.00	7.72	3.05	4.08	5.88	5.88	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.44
82	1.600	26.00	0.00	7.63	3.03	4.68	5.63	5.63	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.43

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD mg/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 13 UT LDB-NATURAL DIV. TO CAL.R. 10/06/00; W.C. BERGER, JR.

******************** REACH INPUTS ********************

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
83	UPR RCH	0.00142	26.00	0.00	7.63	3.03	4.68	5.63	5.63	0.00	0.00	0.00	0.00	11.90	0.00	0.43

******************** HYDRAULIC PARAMETER VALUES ********************

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s

83	1.60	1.50	0.00142	0.00	0.00006	20.33	0.99	25.12	2487.14	2512.09	24.87	0.00	0.000	0.950	0.000
84	1.50	1.40	0.00142	0.00	0.00006	20.33	0.99	25.12	2487.14	2512.09	24.87	0.00	0.000	0.950	0.000
85	1.40	1.30	0.00142	0.00	0.00006	20.33	0.99	25.12	2487.14	2512.09	24.87	0.00	0.000	0.950	0.000
TOT						60.99			7461.41	7536.27					
AVG					0.00006		0.99	25.12			24.87				
CUM						586.12									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
83	1.500	7.96	2.65	0.21	0.09	0.00	3.12	3.12	3.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
84	1.400	7.82	2.70	0.22	0.10	0.00	3.33	3.33	3.33	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.17	0.05
85	1.300	7.68	2.75	0.23	0.10	0.00	3.55	3.55	3.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.05
20 DEG C RATE				0.15		0.00		2.00	0.00		0.00	0.00	0.00	0.00			0.00	9.37		
AVG 20 DEG C RATE			2.32		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
83	1.500	27.04	0.00	7.54	3.01	5.39	5.38	5.38	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.42
84	1.400	28.07	0.00	7.47	3.00	5.72	5.11	5.11	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.41
85	1.300	29.11	0.00	7.39	2.98	5.92	4.81	4.81	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.40

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD mg/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 14 NAT. DIV. TO CAL.R.-RKM RKM 0.8 10/06/00; W.C. BERGER, JR.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
86	UPR RCH	0.00142	29.11	0.00	7.39	2.98	5.92	4.81	4.81	0.00	0.00	0.00	0.00	11.90	0.00	0.40

** HYDRAULIC PARAMETER VALUES **

ELEM BEGIN ENDING FLOW PCT ADVCTV TRAVEL DEPTH WIDTH VOLUME SURFACE X-SECT TIDAL TIDAL DISPRSN MEAN

NO.	DIST km	DIST km	cms	EFF	VELO m/s	TIME days	m	m	cu m	AREA sq m	AREA sq m	PRISM cu m	VELO m/s	sq m/s	VELO m/s
86	1.30	1.20	0.00142	0.00	0.00006	20.94	1.00	25.62	2562.26	2562.09	25.62	0.00	0.000	1.000	0.000
87	1.20	1.10	0.00142	0.00	0.00006	20.94	1.00	25.62	2562.26	2562.09	25.62	0.00	0.000	1.000	0.000
88	1.10	1.00	0.00142	0.00	0.00006	20.94	1.00	25.62	2562.26	2562.09	25.62	0.00	0.000	1.000	0.000
89	1.00	0.90	0.00142	0.00	0.00006	20.94	1.00	25.62	2562.26	2562.09	25.62	0.00	0.000	1.000	0.000
90	0.90	0.80	0.00142	0.00	0.00006	20.94	1.00	25.62	2562.26	2562.09	25.62	0.00	0.000	1.000	0.000
TOT						104.72			12811.31	12810.45					
AVG					0.00006		1.00	25.62			25.62				
CUM						690.84									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
86	1.200	7.68	2.72	0.23	0.10	0.00	2.66	2.66	2.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
87	1.100	7.68	2.72	0.23	0.10	0.00	2.66	2.66	2.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
88	1.000	7.68	2.72	0.23	0.10	0.00	2.66	2.66	2.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
89	0.900	7.68	2.72	0.23	0.10	0.00	2.66	2.66	2.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
90	0.800	7.68	2.72	0.23	0.10	0.00	2.66	2.66	2.66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
20 DEG C RATE				0.15		0.00		1.50	0.00		0.00	0.00	0.00	0.00			0.00	9.16		
AVG 20 DEG C RATE			2.30		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
86	1.200	29.11	0.00	7.32	2.97	6.10	4.49	4.49	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.38
87	1.100	29.11	0.00	7.24	2.96	6.22	4.22	4.22	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.37
88	1.000	29.11	0.00	7.17	2.94	6.30	3.98	3.98	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.36
89	0.900	29.11	0.00	7.10	2.93	6.36	3.77	3.77	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.35
90	0.800	29.11	0.00	7.02	2.92	6.42	3.57	3.57	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.34

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD mg/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED CALIBRATION MODEL #2
REACH NO. 15   UPPER OUTLET-LOWER OUTLET   10/06/00; W.C. BERGER, JR.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
91	UPR RCH	0.00142	29.11	0.00	7.02	2.92	6.42	3.57	3.57	0.00	0.00	0.00	0.00	11.90	0.00	0.34

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
91	0.80	0.70	0.00142	0.00	0.00005	21.57	1.01	26.12	2638.39	2612.09	26.38	0.00	0.000	1.000	0.000
92	0.70	0.60	0.00142	0.00	0.00005	21.57	1.01	26.12	2638.39	2612.09	26.38	0.00	0.000	1.000	0.000
93	0.60	0.50	0.00142	0.00	0.00005	21.57	1.01	26.12	2638.39	2612.09	26.38	0.00	0.000	1.000	0.000
94	0.50	0.40	0.00142	0.00	0.00005	21.57	1.01	26.12	2638.39	2612.09	26.38	0.00	0.000	1.000	0.000
95	0.40	0.30	0.00142	0.00	0.00005	21.57	1.01	26.12	2638.39	2612.09	26.38	0.00	0.000	1.000	0.000
96	0.30	0.20	0.00142	0.00	0.00005	21.57	1.01	26.12	2638.39	2612.09	26.38	0.00	0.000	1.000	0.000
97	0.20	0.10	0.00142	0.00	0.00005	21.57	1.01	26.12	2638.39	2612.09	26.38	0.00	0.000	1.000	0.000
98	0.10	0.00	0.00142	0.00	0.00005	21.57	1.01	26.12	2638.39	2612.09	26.38	0.00	0.000	1.000	0.000
TOT						172.52			21107.09	20896.71					
AVG					0.00005		1.01	26.12			26.38				
CUM						863.36									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
91	0.700	7.68	2.70	0.23	0.10	0.00	2.13	2.13	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
92	0.600	7.68	2.70	0.23	0.10	0.00	2.13	2.13	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
93	0.500	7.68	2.70	0.23	0.10	0.00	2.13	2.13	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
94	0.400	7.68	2.70	0.23	0.10	0.00	2.13	2.13	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
95	0.300	7.68	2.70	0.23	0.10	0.00	2.13	2.13	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
96	0.200	7.68	2.70	0.23	0.10	0.00	2.13	2.13	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
97	0.100	7.68	2.70	0.23	0.10	0.00	2.13	2.13	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
98	0.000	7.68	2.70	0.23	0.10	0.00	2.13	2.13	2.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.05
20 DEG C RATE				0.15		0.00		1.20	0.00		0.00	0.00	0.00	0.00			0.00	9.02		
AVG 20 DEG C RATE			2.28		0.08					0.00									0.04	

* g/sq m/d   ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
91	0.700	29.11	0.00	6.95	2.90	6.50	3.38	3.38	0.00	0.00	0.00	0.00	0.01	10.90	0.00	0.00	0.33
92	0.600	29.11	0.00	6.88	2.89	6.55	3.25	3.25	0.00	0.00	0.01	0.01	0.03	9.91	0.00	0.00	0.32

93	0.500	29.11	0.00	6.81	2.88	6.58	3.16	3.16	0.00	0.00	0.01	0.01	0.04	8.91	0.00	0.00	0.32
94	0.400	29.11	0.00	6.73	2.86	6.60	3.11	3.11	0.00	0.00	0.01	0.01	0.06	7.91	0.00	0.00	0.32
95	0.300	29.11	0.00	6.66	2.85	6.63	3.10	3.10	0.00	0.00	0.02	0.02	0.07	6.92	0.00	0.00	0.32
96	0.200	29.11	0.00	6.59	2.83	6.65	3.14	3.14	0.00	0.00	0.02	0.02	0.09	5.92	0.00	0.00	0.33
97	0.100	29.11	0.00	6.51	2.82	6.68	3.21	3.21	0.00	0.00	0.03	0.03	0.10	4.93	0.00	0.00	0.34
98	0.000	29.11	0.00	6.44	2.81	6.75	3.33	3.33	0.00	0.00	0.03	0.03	0.12	3.93	0.00	0.00	0.35

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD mg/L

** g/cu m

STREAM SUMMARY
Marsh @ Welcome Rd.

MARSH BAYOU WATERSHED CALIBRATION MODEL #2
10/06/00; W.C. BERGER, JR.

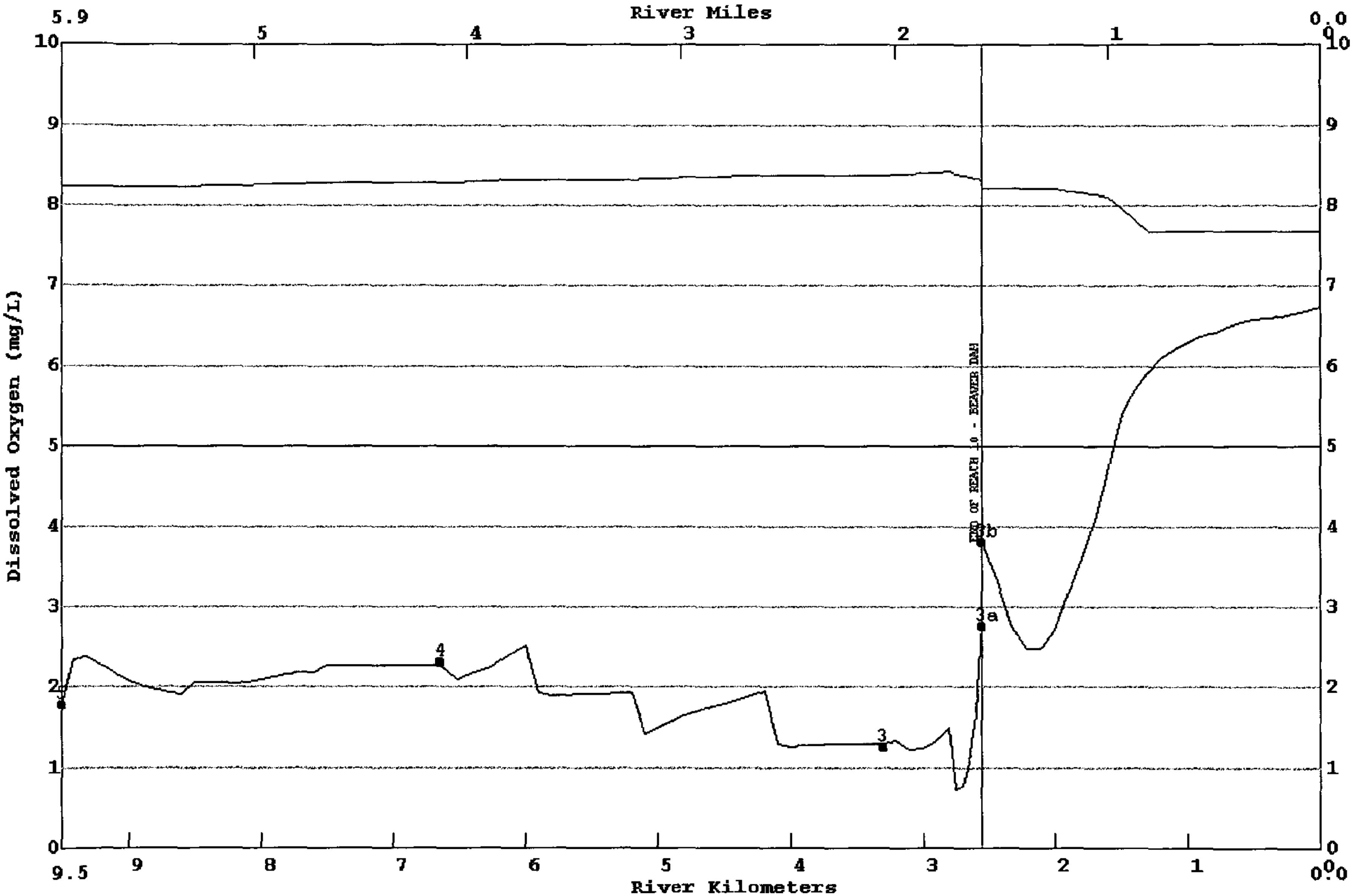
TRAVEL TIME = 863.36 DAYS

MAXIMUM EFFLUENT = 0.00 PERCENT

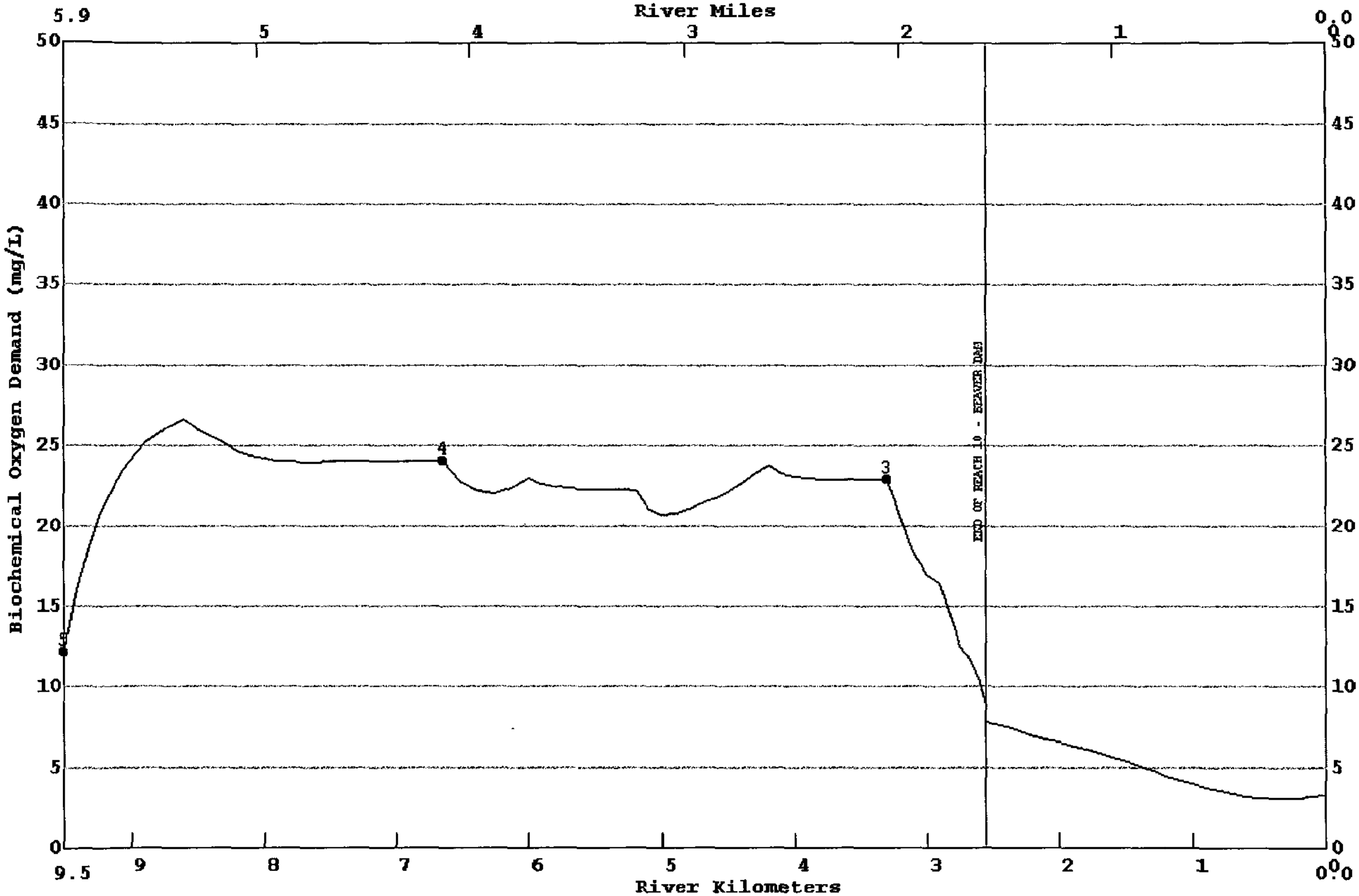
FLOW	=	0.00142	TO	0.00142	cms
DISPERSION	=	0.0000	TO	1.0000	sq m/s
VELOCITY	=	0.00005	TO	0.00065	m/s
DEPTH	=	0.30	TO	1.08	m
WIDTH	=	4.42	TO	26.12	m
BOD DECAY	=	0.00	TO	0.23	per day
NH3 DECAY	=	0.00	TO	0.00	per day
SDMNT OXYGEN DMND	=	0.00	TO	4.62	g/sq m/d
NH3 SOURCE	=	0.00	TO	0.00	g/sq m/d
REAERATION	=	0.70	TO	553.80	per day
BOD SETTLING	=	0.00	TO	0.10	per day
ORGN DECAY	=	0.00	TO	0.00	per day
ORGN SETTLING	=	0.00	TO	0.00	per day
TEMPERATURE	=	24.00	TO	29.11	deg C
DISSOLVED OXYGEN	=	0.73	TO	6.75	mg/L

.....EXECUTION COMPLETED

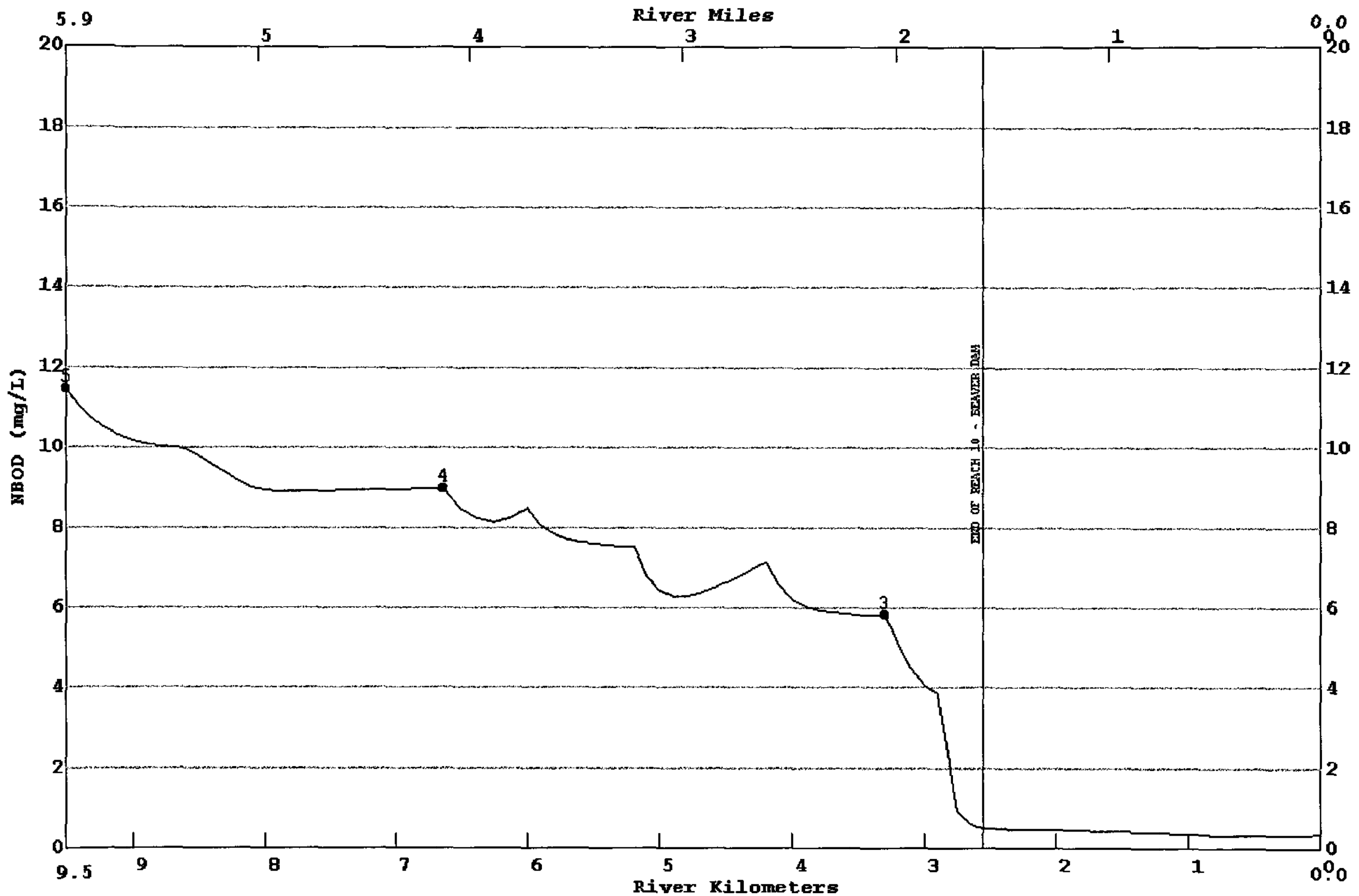
LA-QUAL Version 4.10 Run at 20:10 on 03/30/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.
10/06/00; W.C. BERGER, JR. min= 0.73 max= 6.75
Marsh Bayou: Welcome Rd.-Calcasieu R.



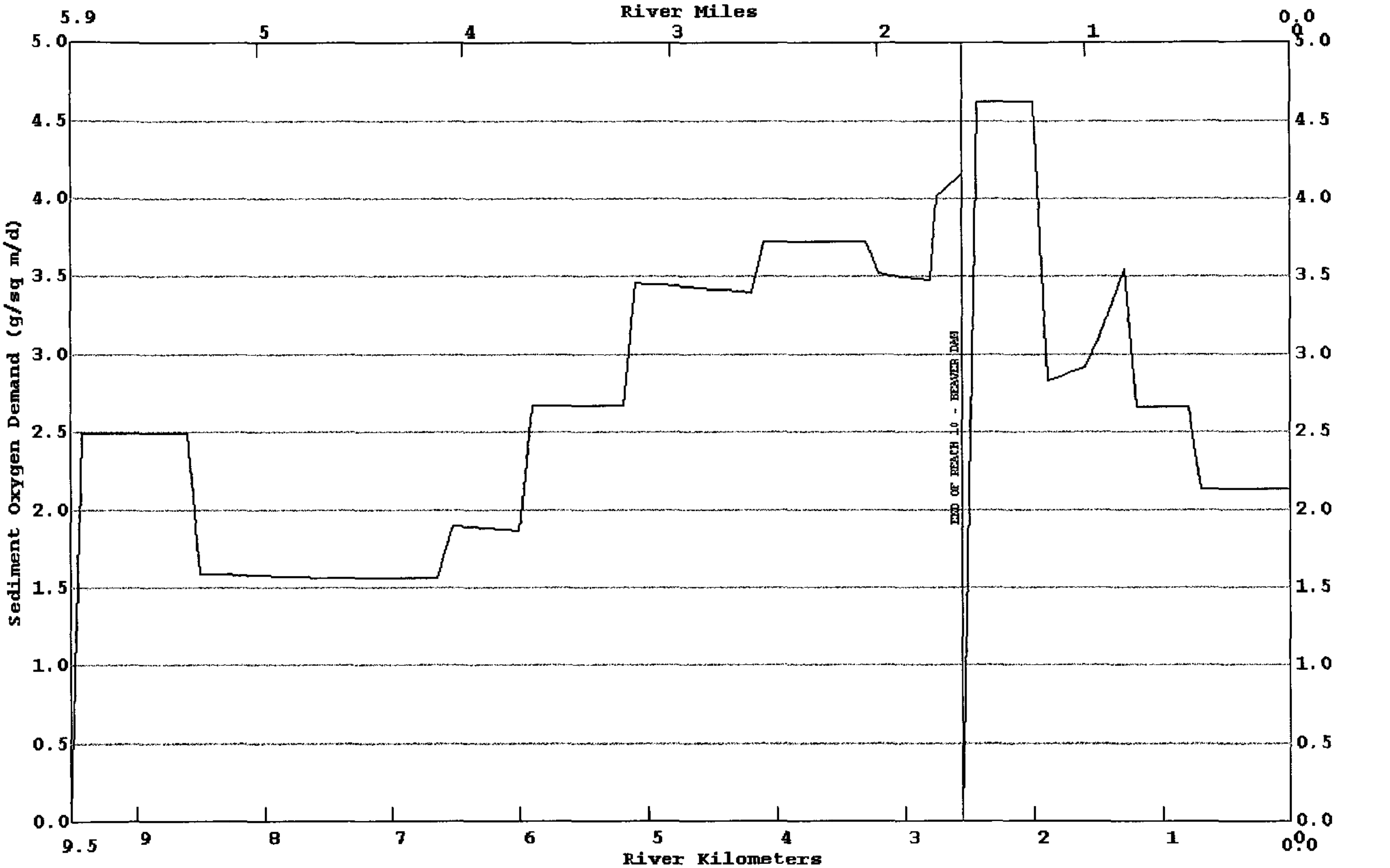
LA-QUAL Version 4.10 Run at 20:10 on 03/30/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.
10/06/00; W.C. BERGER, JR. min= 3.10 max= 26.64
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 20:10 on 03/30/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.
10/06/00; W.C. BERGER, JR. min= 0.32 max= 11.47
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 20:10 on 03/30/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\CALIBRATION\MARS_CAL2.
10/06/00; W.C. BERGER, JR. min= 0.00 max= 4.62
Marsh Bayou: Welcome Rd.-Calcasieu R.



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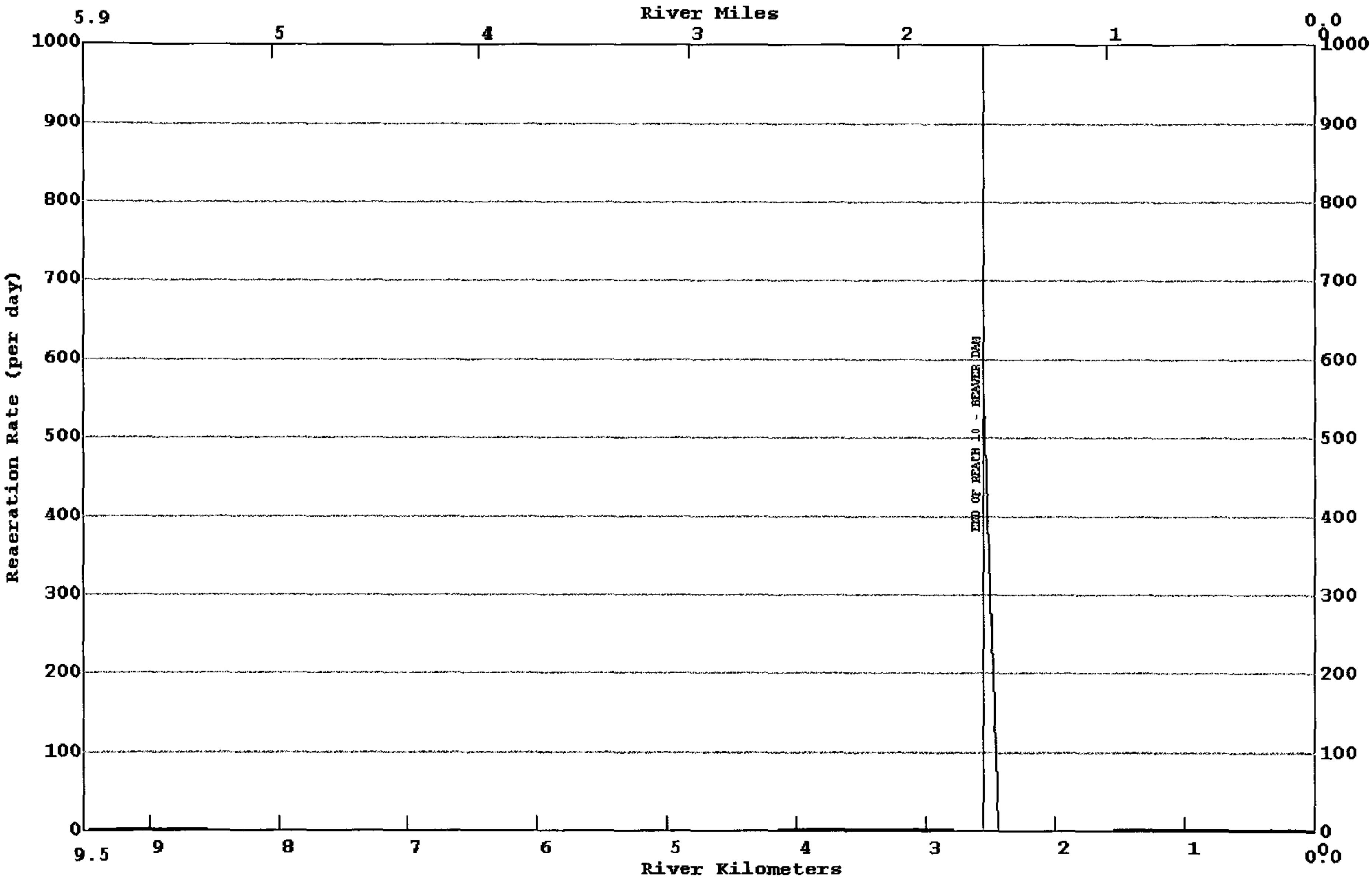
Marsh Bayou: Welcome Rd.-Calcasieu R.



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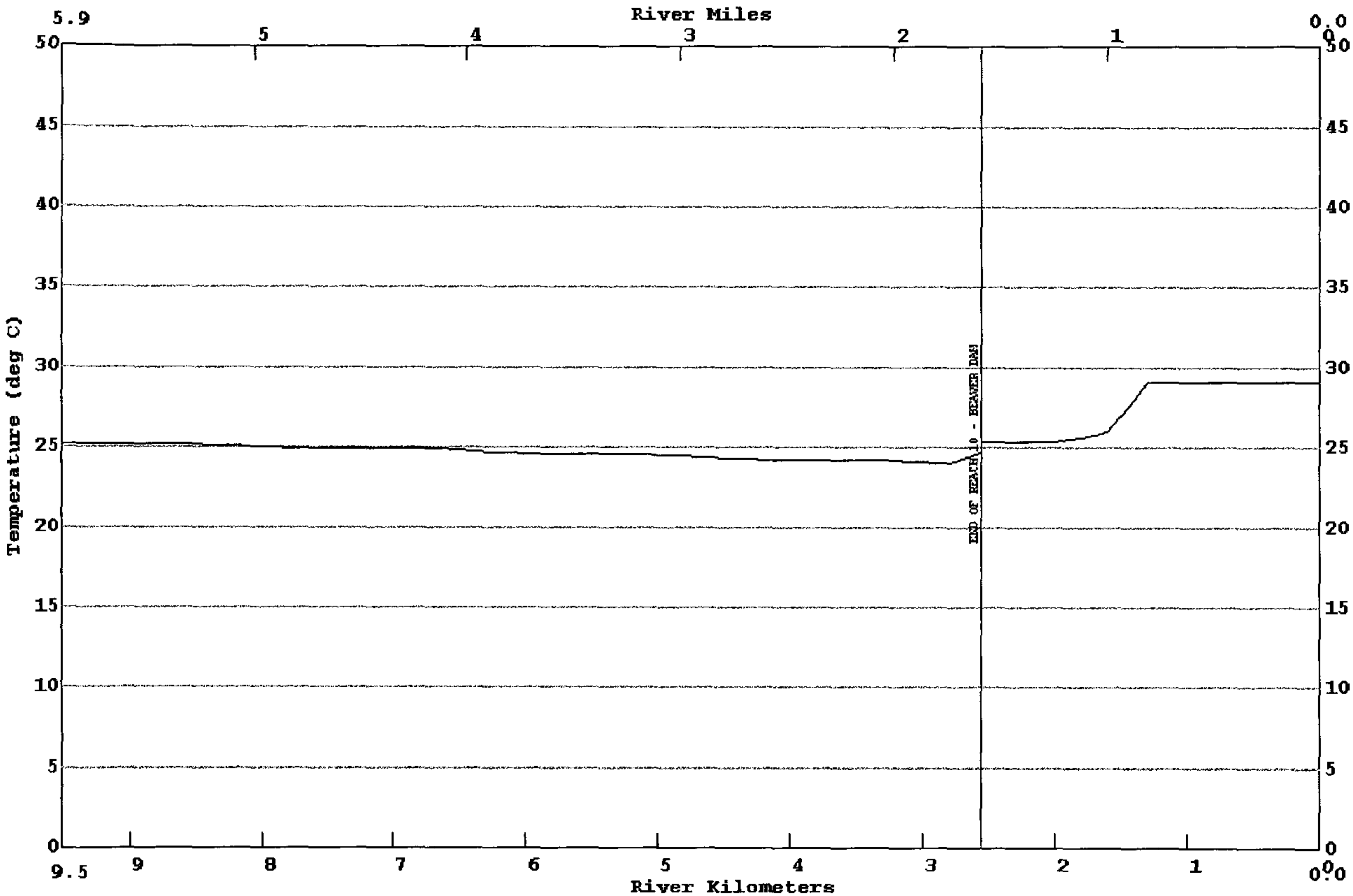
Marsh Bayou: Welcome Rd.-Calcasieu R.



Marsh Bayou Calibration Water Quality Model Input Description

DATA TYPE 9, Advective Hydraulic Coefficients					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Width "a"	Unitless	4.450	Determined by Best Professional Judgement (BPJ) and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	4.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.400	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
2	Marsh Bayou, RKM 8.6-UT LDB	Width "a"	Unitless	4.450	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.550	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
3	Marsh Bayou, UT (LDB) to Site 4	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	9.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.650	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
6	Marsh Bayou, RKM 5.2-UT LDB	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	11.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration

		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.600	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
7	Marsh Bayou, UT (LDB)-Site 3	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.00020	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
8	Marsh Bayou, Site 3-Little Marsh Bayou	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.200	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.760	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
10	Marsh Bayou, Beaver Dam	Width "a"	Unitless	32.790	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.050	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.3047	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
11	Marsh Bayou, Beaver Dam-RKM 2.0	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
12	Marsh Bayou, RKM 2.0-UT LDB	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.800	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps

		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.930	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.940	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.950	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113

Marsh Bayou Calibration Water Quality Model Input Description

DATA TYPE 10, Dispersive Hydraulic Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
2	Marsh Bayou, RKM 8.6-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
3	Marsh Bayou, UT (LDB) to Site 4	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
6	Marsh Bayou, RKM 5.2-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
7	Marsh Bayou, UT (LDB)-Site 3	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

8	Marsh Bayou, Site 3-Little Marsh Bayou	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.05	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
10	Marsh Bayou, Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.50	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
11	Marsh Bayou, Beaver Dam-RKM 2.0	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
12	Marsh Bayou, RKM 2.0-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.95	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

Marsh Bayou Calibration Water Quality Model Input Description

DATA TYPE 11, INITIAL CONDITIONS					
Reach #	NAME	Initial Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Temperature	°Celcius	25.200	Temperature value for the Site 5
		Salinity	ppt		
		Dissolved O_2	mg/l	1.770	Disssolved oxygen value for Site 5
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
2	Marsh Bayou, RKM 8.6-UT LDB	Temperature	°Celcius	25.200	Temperature value for the Site 5
		Salinity	ppt		
		Dissolved O_2	mg/l	1.770	Disssolved oxygen value for Site 5
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
3	Marsh Bayou, UT (LDB) to Site 4	Temperature	°Celcius	24.900	Temperature value for the Site 4
		Salinity	ppt		
		Dissolved O_2	mg/l	2.310	Disssolved oxygen value for Site 4
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Temperature	°Celcius	24.900	Temperature value for the Site 4
		Salinity	ppt		
		Dissolved O_2	mg/l	2.310	Disssolved oxygen value for Site 4
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Temperature	°Celcius	24.580	Estimated temperature value based on the survey values from the upstream and downstream sites
		Salinity	ppt		
		Dissolved O_2	mg/l	1.780	Estimated dissolved oxygen value based on the survey values from the upstream and downstream sites
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
6	Marsh Bayou, RKM 5.2-UT LDB	Temperature	°Celcius	24.580	Estimated temperature value based on the survey values from the upstream and downstream sites
		Salinity	ppt		

		Dissolved O_2	mg/l	1.780	Estimated dissolved oxygen value based on the survey values from the upstream and downstream sites
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
7	Marsh Bayou, UT (LDB)-Site 3	Temperature	°Celcius	24.250	Temperature value for the Site 3
		Salinity	ppt		
		Dissolved O_2	mg/l	1.250	Disssolved oxygen value for Site 3
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
8	Marsh Bayou, Site 3-Little Marsh Bayou	Temperature	°Celcius	24.250	Temperature value for the Site 3
		Salinity	ppt		
		Dissolved O_2	mg/l	1.250	Disssolved oxygen value for Site 3
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Temperature	°Celcius	24.000	Temperature value obtained immediately upstream of the beaver dam, according to the field notes
		Salinity	ppt		
		Dissolved O_2	mg/l	2.750	Dissolved oxygen value obtained immediately upstream of the beaver dam, according to the field notes
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
10	Marsh Bayou, Beaver Dam	Temperature	°Celcius	24.680	Estimated temperature value based on the survey values from the upstream and downstream sites
		Salinity	ppt		
		Dissolved O_2	mg/l	3.280	Estimated dissolved oxygen value based on the survey values from the upstream and downstream sites
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
11	*Marsh Bayou, Beaver Dam-RKM 2.0*	*Temperature*	°Celcius	25.360	Temperature value obtained immediately downstream of the beaver dam, according to the field notes
		Salinity	ppt		
		Dissolved O_2	mg/l	3.800	*Dissolved oxygen value obtained immediately downstream of the* beaver dam, according to the field notes
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
12	Marsh Bayou, RKM 2.0-UT LDB	Temperature	°Celcius	25.360	Estimated temperature value based on the survey values from the upstream and downstream sites

		Salinity	ppt		
		Dissolved O_2	mg/l	3.800	Estimated dissolved oxygen value based on the survey values from the upstream and downstream sites
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Temperature	°Celcius	26.000	Estimated temperature value based on the survey values from the upstream and downstream sites
		Salinity	ppt		
		Dissolved O_2	mg/l	4.500	Estimated dissolved oxygen value based on the survey values from the upstream and downstream sites
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Temperature	°Celcius	29.110	Temperature value for the Site 2
		Salinity	ppt		
		Dissolved O_2	mg/l	6.450	Disssolved oxygen value for Site 2
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Temperature	°Celcius	29.110	Temperature value for the Site 2
		Salinity	ppt		
		Dissolved O_2	mg/l	6.450	Dissolved oxygen value for the Site 2
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		

Marsh Bayou Calibration Water Quality Model Input Description

DATA TYPE 12, Reaeration, Sediment Oxygen Demand and BOD Coeff.

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.80	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06.	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
2	Marsh Bayou, RKM 8.6-UT LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_{+C139} "C"	Unitless		
		Background SOD	g/m^2-day	1.15	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
3	Marsh Bayou, UT (LDB) to Site 4	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.15	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.40	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration

		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	2.00	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
6	Marsh Bayou, RKM 5.2-UT LDB	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	2.60	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
7	Marsh Bayou, UT (LDB)-Site 3	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	2.85	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	2.70	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		

		Anaerobic BOD decay	1/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	3.10	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
10	Marsh Bayou, Beaver Dam	K2 option	Unitless	1.00	K_2 = a
		K2 "A"	Unitless	500.00	Manually input reaeration value used for Reach 10 used to simulate the beaver dam. The value was determined by calibration.
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Aerobic BOD decay	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		BOD Settling rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	3.30	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
12	Marsh Bayou, RKM 2.0-UT LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	2.00	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		

13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	K2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	2.00	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	K2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.50	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	K_2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K_2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.20	Based upon Best Professional Judgement (BPJ) and calibration
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		

Marsh Bayou Calibration Water Quality Model Input Description

DATA TYPE 15, Coliform and Nonconservative Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
2	Marsh Bayou, RKM 8.6-UT LDB	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
3	Marsh Bayou, UT (LDB) to Site 4	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
6	Marsh Bayou, RKM 5.2-UT LDB	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
7	Marsh Bayou, UT (LDB)-Site 3	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
8	Marsh Bayou, Site 3-Little Marsh Bayou	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
10	Marsh Bayou, Beaver Dam	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Settled nonconservative material conversion to sediment oxygen demand			
11	Marsh Bayou, Beaver Dam-RKM 2.0	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

12	Marsh Bayou, RKM 2.0-UT LDB	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)

		Settled nonconservative material conversion to sediment oxygen demand			
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

Marsh Bayou Calibration Water Quality Model Input Description

DATA TYPE 19, Nonpoint Source Data

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	BOD	kg/day	10.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	4.40	Calibration
		Dissolved O_2	kg/day		
2	Marsh Bayou, RKM 8.6-UT LDB	BOD	kg/day	16.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	7.50	Calibration
		Dissolved O_2	kg/day		
3	Marsh Bayou, UT (LDB) to Site 4	BOD	kg/day	26.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	7.30	Calibration
		Dissolved O_2	kg/day		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	BOD	kg/day	16.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	4.40	Calibration
		Dissolved O_2	kg/day		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	BOD	kg/day	22.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	5.50	Calibration
		Dissolved O_2	kg/day		
6	Marsh Bayou, RKM 5.2-UT LDB	BOD	kg/day	27.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	5.80	Calibration
		Dissolved O_2	kg/day		
7	Marsh Bayou, UT (LDB)-Site 3	BOD	kg/day	29.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	5.10	Calibration
		Dissolved O_2	kg/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	BOD	kg/day	15.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		

		Nonconservative matl.	kg/day	2.50	Calibration
		Dissolved O_2	kg/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	BOD	kg/day	20.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.10	Calibration
		Dissolved O_2	kg/day		
10	Marsh Bayou, Beaver Dam	BOD	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Dissolved O_2	kg/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	BOD	kg/day	18.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.00	Calibration
		Dissolved O_2	kg/day		
12	Marsh Bayou, RKM 2.0-UT LDB	BOD	kg/day	16.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.80	Calibration
		Dissolved O_2	kg/day		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	BOD	kg/day	14.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.80	Calibration
		Dissolved O_2	kg/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	BOD	kg/day	14.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.80	Calibration
		Dissolved O_2	kg/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	BOD	kg/day	14.00	Calibration
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.80	Calibration
		Dissolved O_2	kg/day		

Marsh Bayou Calibration Water Quality Model Input Description

DATA TYPE 20, Headwater Data for Flow, Temperature, Salinity, and Conservatives					
Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou @ Welcome Road	*Element # of input*	*#*	*1*	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater name		Marsh Bayou @ Welcome Road	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater flow	cms	0.00142	Marsh Bayou Survey at Welcome Road (Site 5)
		Temperature	°Celcius	25.2	Marsh Bayou Survey at Welcome Road (Site 5)
		Salinity	ppt		
		Conservative Matl. I	mg/l	20.4	Marsh Bayou Survey at Welcome Road (Site 5)
		Conservative Matl. II	mg/l	5.4	Marsh Bayou Survey at Welcome Road (Site 5)

Marsh Bayou Calibration Water Quality Model Input Description

DATA TYPE 21, Headwater Data for DO, BOD, and Nitrogen					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Dissolved O_2	mg/l	1.77	Marsh Bayou Survey at Welcome Road (Site 5)
		BOD	mg/l	12.19	Marsh Bayou Survey at Welcome Road (Site 5)
		Org.- N	mg/l		
		NH_3-N	mg/l		
		NO_{2+3}-N	mg/l		

Marsh Bayou Calibration Water Quality Model Input Description					
DATA TYPE 22, Headwater Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Phosphorus	mg/L		
		Chlorophyll a	ug/L	11.9	Marsh Bayou Survey at Welcome Road (Site 5)
		Coliform	#/100 mL		
		Nonconservative Material	mg/l	11.47	Marsh Bayou Survey at Welcome Road (Site 5)

Marsh Bayou Calibration Water Quality Model Input Description

DATA TYPE 27, Lower Boundary Conditions					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
	Calcasieu River	Temperature	°Celcius	29.11	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Salinity	ppt	0.00	
		Conservative Matl. I	mg/l	6.40	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Conservative Matl. II	mg/l	2.80	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Dissolved O_2	mg/l	6.80	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		BOD	mg/l	3.42	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Org.- N	mg/l	0.22	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		NH_3-N	mg/l	0.00	
		NO_{2+3}-N	mg/l	0.03	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Phosphorus	mg/l	0.12	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Chlorophyl A	mg/l	3.93	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Coliform	mg/l		
		Nonconservative Material	mg/L	0.36	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)

APPENDIX E - SENSITIVITY ANALYSIS

Sensitivity Analysis Results

MARSH BAYOU SENSITIVITY ANALYSIS RESULTS

Developed from the Marsh Bayou watershed calibration model.

Input data into shaded cells.

Minimum D. O. values are based upon the entire watershed model.

A = Calibration Model Minimum D.O. = 0.73 mg/L at RKM 2.75

Parameter	+ 30 % Parameter Change			- 30 % Parameter Change		
	min D.O. (mg/L)	RKM Location (km)	% Min D.O. Change	min D.O. (mg/L)	RKM Location (km)	% Min D.O. Change
	B	C	D=(B-A)/Ax100	E	F	G=(E-A)/A x 100
Reaeration	2.42	2.75	231.51	0.00	9.24-2.60	-100.00
Velocity	0.00	2.75-2.70	-100.00	1.53	2.8	109.59
Temperature	0.00	2.75	-100.00	1.45	2.75	98.63
Depth	0.92	2.75	26.03	0.52	2.75-2.70	-28.77
Baseflow	0.71	2.75	-2.74	0.74	2.75	1.37
BOD Settling	0.93	2.75	27.40	0.49	2.75	-32.88
Aerobic BOD Decay	0.49	2.75	-32.88	1.07	2.75	46.58
Nonconservative Material (NCM) Settling	0.74	2.75	1.37	0.72	2.75	-1.37
NCM Decay	0.73	2.75	0.00	0.74	2.75	1.37
Benthal	0.00	4.10-2.90, 2.75-2.65	-100.00	2.25	2.75	208.22
Headwater Flow	0.73	2.75	0.00	0.74	2.75	1.37
Headwater D.O.	0.71	2.75	-2.74	0.73	2.75	0.00
Headwater BOD	0.73	2.75	0.00	0.73	2.75	0.00
Headwater NCM	0.73	2.75	0.00	0.73	2.75	0.00
Headwater Temperature	0.73	2.75	0.00	0.73	2.75	0.00
Tidal range	0.73	2.75	0.00	0.73	2.75	0.00
Ocean Exchange Ratio	0.73	2.75	0.00	0.73	2.75	0.00

APPENDIX F – WATER QUALITY PROJECTION CALCULATION SPREADSHEETS

Reference Stream Nonpoint Loading

Calibration Model Non-Point Load Equivalent Calculations
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)
Summer Projection, Nonpoint Benthic Load Input and TMDL Calculations
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)
Winter Projection, Nonpoint Benthic Load Input and TMDL Calculations
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)
Summer TMDL Calculations for Point Source Loads
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)
Winter TMDL Calculations for Point Source Loads
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)
Summer TMDL Calculations and Projection Model Calculations for Headwater/Tributary Loads
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)
Winter TMDL Calculations and Projection Model Calculations for Headwater/Tributary Loads
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)
Summer TMDL Calculations and Projection Calculations for Incremental Loads
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)
Winter TMDL Calculations and Projection Calculations for Incremental Loads
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)

Calibration Model Non-Point Load Equivalent Calculations
(Estimated Man-Made Load Reduced 70%)
Summer Projection, Nonpoint Benthic Load Input and TMDL Calculations
(Estimated Man-Made Load Reduced 70%)
Winter Projection, Nonpoint Benthic Load Input and TMDL Calculations
(Estimated Man-Made Load Reduced 70%)
Summer TMDL Calculations for Point Source Loads
(Estimated Man-Made Load Reduced 70%)
Winter TMDL Calculations for Point Source Loads
(Estimated Man-Made Load Reduced 70%)
Summer TMDL Calculations and Projection Model Calculations for Headwater/Tributary Loads
(Estimated Man-Made Load Reduced 70%)
Winter TMDL Calculations and Projection Model Calculations for Headwater/Tributary Loads
(Estimated Man-Made Load Reduced 70%)
Summer TMDL Calculations and Projection Calculations for Incremental Loads
(Estimated Man-Made Load Reduced 70%)
Winter TMDL Calculations and Projection Calculations for Incremental Loads
(Estimated Man-Made Load Reduced 70%)

REFERENCE STREAM NONPOINT LOADING

REFERENCE STREAM	WIDTH (ft)	NONPOINT FLOW (cfs/mi)	NONPOINT $NBOD_U$ (lb/mi/day)	NONPOINT $NBOD_U$ (gm O_2/m2/day)	NONPOINT $CBOD_U$ (lb/mi/day)	NONPOINT $CBOD_U$ (gm O_2/m2/day)	TEMPERATURE (deg C)	DISSOLVED OXYGEN LEVEL (mg/L)	SOD @ 20 deg C (gm O_2\m^2-d)	TOTAL BENTHIC LOAD @ 20 deg C (gm O_2\m^2-day)	STREAM TEMP (deg C)	SOD @ STREAM TEMP (gm O_2\m^2-day)	BENTHIC LOAD @ STREAM TEMP (gm O_2\m^2-day)
Big Roaring	52		5.35	0.095	38.70	0.688	20.150	5.880	1.45	2.234	20.15	1.466	2.249
Chemin-a-haut	40		1.46	0.034	8.10	0.187	17.170	5.530	2.95	3.171	17.17	2.410	2.631
Indian Bayou	72		6.97	0.090	16.95	0.218	20.820	6.280	1.52	1.827	20.80	1.609	1.917
Leading Bayou	10		0.238	0.022	0.34	0.031	14.250	7.640	2.23	2.278	14.25	1.476	1.529
Middle fork d'Arbonne	42		15.26	0.336	13.55	0.298	28.820	4.510	1.22	1.850	28.82	2.281	2.915
Beaucoup	26		14	0.498	4.75	0.169	16.450	3.530	4.20	4.867	16.45	3.260	3.927
Saline Bayou	35	0.77	61.93	1.637	20.08	0.531	16.110	8.280	2.25	4.417	16.11	1.704	3.872
Sixmile Bayou	54	0.45	0	0.000	0.00	0.000	24.180	7.770	0.00	0.000	24.18	0.000	0.000
Kisatchie Bayou (1995, sites 2-3)	N/A		N/A	N/A	N/A	N/A	14.34	9.61	N/A	N/A	N/A	N/A	N/A
Kisatchie Bayou (1996, Sites 3-4)	56		Not Done	Not Done	Not Done	Not Done	28.77	7.38	Not Done	Not Done	28.77	Not Done	Not Done
Kisatchie Bayou (1996, Sites 4-5)	59		Not Done	Not Done	Not Done	Not Done	27.70	6.61	Not Done	Not Done	27.70	Not Done	Not Done
Meridian Creek (1995, Sites 2-3)	17.21		N/A	N/A	N/A	N/A	25.00	5.52	N/A	N/A	25.00	N/A	N/A
Meridian Creek (1996, Sites 2-3)	18.04		0	0.000	0.00	0.000	25.770	5.140	1.00	1.000	25.77	1.510	1.510
Pearl Creek (Sites 2-3)	17.9		0	0.000	0.00	0.000	15.870	9.220	0.00	0.000	15.87	0.000	0.000
Calcasieu River (Sites 2-3)	72		Not Done	Not Done	Not Done	Not Done	27.88	7.72	Not Done	Not Done	27.86	Not Done	Not Done
Average		0.61	10.5208	0.271	10.25	0.21	21.55	6.71	1.68	2.16	22.06	1.57	2.055

Calibration Model Non-Point Load Equivalent Calculations:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

Modeled stream or water body:	MARSH BAYOU, SOUTHEAST OF TOPSY, LA

Shaded cells are input values for calculations.

REACH NUMBER & DESCRIPTION	Calibration Model Reach Length (km)	Calibration Model Average Reach Width (meters)	Calibration Model UCBOD Nonpoint loading (kg/day)	Calibration Model UNBOD Nonpoint loading (kg/day)	Calibration Model UCBOD Nonpoint loading (gm O_2/m^2/day)	Calibration Model UNBOD Nonpoint loading (gm O_2/m^2/day)	Calibration Model SOD (gm O_2/m^2/day)	Calibration Model TOTAL Benthic Load (gm O_2/m^2/day)
	A	B	C	D	E = C / (A x B)	F = D / (A x B)	G	H = E + F + G
Reach 1, Marsh Bayou, E. Welcome Rd.-Rkm 8.6	0.92	4.42	10	4	2.459	1.082	1.80	5.34
Reach 2, Marsh Bayou, Rkm 8.6-Unnamed tributary (UT) left decending bank (LDB)	1.00	5.42	16	8	2.952	1.384	1.15	5.49
Reach 3, Marsh Bayou, UT LDB-Site 4	0.95	7.77	26	7	3.522	0.989	1.15	5.66
Reach 4, Marsh Bayou, Rkm 6.65-E. of Topsy Rd.	0.65	7.77	16.00	4.40	3.168	0.871	1.40	5.44
Reach 5, Marsh Bayou, E. of Topsy Rd.-Rkm 5.2	0.80	10.01	22.00	5.50	2.747	0.687	2.00	5.43
Reach 6, Marsh Bayou, Rkm 5.2-UT LDB	1.00	12.01	27.00	5.80	2.248	0.483	2.60	5.33
Reach 7, Marsh Bayou, UT LDB-Site 3	0.90	13.25	29.00	5.10	2.432	0.428	2.85	5.71
Reach 8, Marsh Bayou, Site 3-Little Marsh Bayou	0.50	13.25	15.00	2.50	2.264	0.377	2.70	5.34
Reach 9, Marsh Bayou, Little Marsh Bayou-Beaver Dam	0.25	23.62	20.00	0.10	3.387	0.017	3.10	6.50
Reach 10, Marsh Bayou, Beaver Dam								
Reach 11, Marsh Bayou, Beaver Dam-RKM 2.0	0.55	23.62	18.00	1.00	1.386	0.077	3.30	4.76
Reach 12, Marsh Bayou, Rkm 2.0-UT LDB	0.40	24.62	16.00	0.80	1.625	0.081	2.00	3.71
Reach 13, Marsh Bayou, Rkm UT LDB-Natural Diversion-Calcasieu River	0.30	25.12	14.00	0.80	1.858	0.106	2.00	3.96
Reach 14, Marsh Bayou, Natural Diversion to Calcasieu R.-Rkm 0.8	0.50	25.62	14.00	0.80	1.093	0.062	1.50	2.66
Reach 15, Marsh Bayou, Upper Outlet-Lower Outlet	0.80	26.12	14.00	0.80	0.670	0.038	1.20	1.91

Summer Projection, Non-Point Benthic Load Input and TMDL Calculations:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

Modeled stream or water body:	MARSH BAYOU, SOUTHEAST OF TOPSY, LA

Shaded cells are input values for calculations.
Values to be used in the projection models.

Reach Number and Description	Non-Point UCBOD	Non-Point UNBOD	SOD @ 20°C	Total Calib. Benthic Load (TCBL)	Reach Length	Background Benthic Load	Proj. Model Avg. Reach Width	Proj. Temp.	Percentage Reduction of man-made sources	TCBL adjusted for % reduction (Reduced TCBL)	Reduced TCBL adjusted for MOS	Non-Point UCBOD	Non-Point UNBOD	SOD @ 20°C	Non-Point UCBOD	Non-Point UNBOD	SOD (total) @ Proj. temp.	Total Projection Benthic Load	MOS Total Benthic Load @ 20°C	MOS SOD @ 20°C	Non-Point UCBOD MOS Loads	Non-Point UNBOD MOS Loads	Adjusted SOD MOS @ Proj. temp.	Adjusted Total MOS @ Proj. temp.	Man-made portion of TCBL	Non-Point UCBOD	Non-Point UNBOD	SOD @ 20°C	Non-Point UCBOD	Non-Point UNBOD	SOD (man) @ Proj. temp.	Man-made Total Projection Benthic Load	Non-Point UCBOD	Non-Point UNBOD	SOD (nat) @ Proj. temp.	Man-made Total Projection Benthic Load
	gmO2/(m²/day)	gmO2/(m²/day)	gmO2/(m²/day)	gmO2/(m²/day)	Kilometers	gmO2/(m²/day)	Meters	(Degrees Celsius)	%	gmO2/(m²/day)	gmO2/(m²/day)	gmO2/(m²/day)	gmO2/(m²/day)	gmO2/(m²/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	gmO2/(m²/day)	gmO2/(m²/day)	gmO2/(m²/day)	gmO2/(m²/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)
	A (note 1)	B (note 1)	C (note 1)	D (note 1)	E (note 1)	F	G	H	I	J (note 2)	K (note 3)	L = (K×A/D)	M = (K×B/D)	N = (K×C/D)	O	P	Q (note 4)	O + P + Q	S	T	U	V	X (note 5)	T + U + V	W = K - F	X = (W×A/D)	Y = (W×B/D)	Z = (W×C/D)	AA	AB	AC (note 6)	AA + AB + AC	AD = O - AA	AE = P - AB	AF = Q - AC	AD + AE + AF
Reach 1, Marsh Bayou, [illegible]	2.439	1.082	1.80	5.341	0.90	1.40	3.85	25.40	100.0%	1.40	1.40	0.737	0.324	0.34	3.82	1.68	3.92	9.42	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	3.82	1.68	3.92	9.42
Reach 2, Marsh Bayou, [illegible]	2.952	1.384	1.15	3.404	1.00	1.40	4.69	25.40	100.0%	1.40	1.40	0.861	0.404	0.34	3.71	2.48	3.12	11.51	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	3.71	2.48	3.12	11.51
Reach 3, Marsh Bayou, [illegible]	3.323	0.989	1.15	5.461	0.95	1.40	8.12	25.40	100.0%	1.40	1.40	0.995	0.280	0.38	8.63	2.42	3.94	15.02	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	8.63	2.42	3.94	15.02
Reach 4, Marsh Bayou, [illegible]	3.148	0.871	1.40	5.439	0.65	1.40	9.85	25.40	100.0%	1.40	1.40	0.972	0.254	0.41	5.53	1.52	3.43	10.49	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	5.53	1.52	3.43	10.49
Reach 5, Marsh Bayou, [illegible]	2.347	0.087	2.00	3.494	0.80	1.40	12.66	25.40	100.0%	1.40	1.40	0.809	0.208	0.59	7.43	1.86	7.40	16.88	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	7.43	1.86	7.40	16.88
Reach 6, Marsh Bayou, [illegible]	2.248	0.482	2.40	3.331	1.00	1.40	17.48	25.40	100.0%	1.40	1.40	0.675	0.145	0.78	9.10	1.95	14.78	25.83	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	9.10	1.95	14.78	25.83
Reach 7, Marsh Bayou, [illegible]	2.432	0.428	2.85	5.710	0.90	1.40	17.89	25.40	100.0%	1.40	1.40	0.481	0.120	0.80	8.58	1.51	14.13	24.22	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	8.58	1.51	14.13	24.22
Reach 8, Marsh Bayou, [illegible]	2.264	0.377	2.70	3.342	0.50	1.40	13.59	25.40	100.0%	1.40	1.40	0.678	0.113	0.83	4.74	0.79	7.95	13.48	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	4.74	0.79	7.95	13.48
Reach 9, Marsh Bayou, [illegible]	3.387	0.017	3.10	6.504	0.25	1.40	22.60	25.40	100.0%	1.40	1.40	0.833	0.004	0.96	5.64	0.03	7.26	12.93	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	5.64	0.03	7.26	12.93
Reach 10, Marsh Bayou, [illegible]																																				
Reach 11, Marsh Bayou, [illegible]	1.386	0.077	3.50	4.963	0.55	1.40	27.05	30.72	100.0%	1.40	1.40	0.465	0.026	1.11	6.94	0.39	32.40	39.73	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	6.94	0.39	32.40	39.73
Reach 12, Marsh Bayou, [illegible]	1.425	0.081	2.00	3.706	0.40	1.40	19.29	30.70	100.0%	1.40	1.40	0.701	0.035	0.86	7.88	0.39	19.03	27.31	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	7.88	0.39	19.03	27.31
Reach 13, Marsh Bayou, [illegible]	1.858	0.106	2.00	3.964	0.30	1.40	15.39	30.70	100.0%	1.40	1.40	0.750	0.043	0.81	6.43	0.37	13.58	20.38	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	6.43	0.37	13.58	20.38
Reach 14, Marsh Bayou, [illegible]	1.093	0.062	1.50	2.455	0.50	1.40	20.22	30.20	100.0%	1.40	1.40	0.639	0.058	0.90	9.38	0.55	25.79	35.92	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	9.38	0.55	25.79	35.92
Reach 15, Marsh Bayou, [illegible]	0.670	0.038	1.20	1.908	0.80	1.40	29.59	30.70	100.0%	1.40	1.40	0.562	0.082	1.51	13.30	0.76	46.72	60.78	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	13.30	0.76	46.72	60.78
Sub-Total										22.40					107	17	304	324	0		0	0	0	0					0	0	0	0	103.51	14.89	203.69	324

Notes: Note 1, Data was calculated in and brought from the Calibration worksheet dataset.
Note 2, $J = [(1 - I) \times (D - F) + F]$
Note 3, $K = [(J - F)/(1 - MOS) + F]$
Note 4, $Q = E \times G \times N \times 1.065^{(H-20)}$
Note 5, $V = S \times 1.065^{(H-20)}$
Note 6, $AC = E \times G \times Z \times 1.065^{(H-20)}$

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) = (MOG + MOU) =	0%

Winter Projection, Non-Point Benthic Load Input and TMDL Calculations:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

Modeled stream or water body:	MARSH BAYOU, SOUTHEAST OF TOPSY, LA

Shaded cells are input values for calculations.
Values to be used in the projection models.

Reach/Segment Description	Non-Point UCBOD	Non-Point UNBOD	SOD @ 20°C	Total Calib. Benthic Load (TCBL)	Reach Length	Background Benthic Load	Reach Modeled Avg. [illegible]	Avg. Temp.	Percentage Reduction of man-made sources	TCBL adjusted for % reduction (Reduced TCBL)	Reduced TCBL adjusted for MOS
	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	Kilometers	gmO₂/(m²/day)	[illegible]	degrees Celsius	%	gmO₂/(m²/day)	gmO₂/(m²/day)
	A (note 1)	B (note 1)	C (note 1)	D (note 1)	E (note 1)	F	G	H	I	J (note 2)	K (note 3)
Reach 1, Marsh Bayou, [illegible]	2.459	1.082	1.80	5.341	0.92	1.40	5.72	15.90	100.00%	1.40	1.40
Reach 2, Marsh Bayou, [illegible] (UT) [illegible]	2.933	1.184	1.15	5.486	1.00	1.40	4.72	15.57	100.00%	1.40	1.40
Reach 3, Marsh Bayou, UTLDD [illegible]	3.522	0.989	1.15	5.661	0.95	1.40	8.27	15.30	100.00%	1.40	1.40
Reach 4, Marsh Bayou, [illegible] of Topsy [illegible]	3.168	0.871	1.40	5.439	0.45	1.40	9.35	15.30	100.00%	1.40	1.40
Reach 5, Marsh Bayou, [illegible] of Topsy [illegible]	2.947	0.487	2.00	5.434	0.80	1.40	11.56	15.90	100.00%	1.40	1.40
Reach 6, Marsh Bayou, [illegible]-UTLDD	2.248	0.483	2.60	5.331	1.00	1.40	12.58	15.50	100.00%	1.40	1.40
Reach 7, Marsh Bayou, UTLDD [illegible]	2.432	0.428	2.85	5.710	0.90	1.40	14.04	15.20	100.00%	1.40	1.40
Reach 8, Marsh Bayou, [illegible] Bayou	2.264	0.377	2.70	5.342	0.30	1.40	14.98	15.30	100.00%	1.40	1.40
Reach 9, Marsh Bayou, [illegible] Beaver Dam	3.987	0.017	3.10	6.504	0.35	1.40	17.46	15.50	100.00%	1.40	1.40
Reach 10, Marsh Bayou, Beaver Dam											
Reach 11, Marsh Bayou, Beaver Dam-RKM 3.0	1.384	0.077	3.30	4.761	0.55	1.40	27.80	18.30	100.00%	1.40	1.40
Reach 12, Marsh Bayou, RKM 3.0-UTLDD	1.415	0.081	2.00	3.704	0.40	1.40	28.40	18.80	100.00%	1.40	1.40
Reach 13, Marsh Bayou, [illegible] UTLDD [illegible] Diversion [illegible]	1.858	0.104	2.00	3.964	0.30	1.40	29.00	18.80	100.00%	1.40	1.40
Reach 14, Marsh Bayou, Natural Diversion to [illegible]	1.093	0.042	1.30	2.435	0.30	1.40	29.40	18.20	100.00%	1.40	1.40
Reach 15, Marsh Bayou, Upper [illegible] Lower [illegible]	0.470	0.038	1.20	1.908	0.80	1.40	30.90	18.80	100.00%	1.40	1.40
Sub-Total										22.40	

Reach/Segment Description	Non-Point UCBOD	Non-Point UNBOD	SOD @ 20°C	Non-Point UCBOD [illegible]	Non-Point UNBOD [illegible]	SOD load @ Proj. temp.	Total Projection Benthic Load (L+M+N)	MOS Total Benthic Load @ 20°C	MOS SOD @ 20°C	Non-Point UCBOD MOS Loads	Non-Point UNBOD MOS Loads	Adjusted SOD MOS @ Proj. temp.	Adjusted Total MOS @ Proj. temp.
	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)
	L = (K)(A/D)	M = (K)(B/D)	N = (K)(C/D)	O = [illegible]	P = [illegible]	Q (note 4)	O + P + Q	R = [illegible]	S = [illegible]	T = [illegible]	U = [illegible]	V (note 5)	T + U + V
Reach 1	0.737	0.324	0.54	3.82	1.71	2	7.49	0	0	0	0	0	0
Reach 2	0.861	0.404	0.34	5.79	2.71	2	10.17	0	0	0	0	0	0
Reach 3	0.995	0.280	0.33	8.72	2.68	2	13.30	0	0	0	0	0	0
Reach 4	0.932	0.256	0.41	6.49	1.91	2	8.97	0	0	0	0	0	0
Reach 5	0.809	0.302	0.59	7.40	1.87	4	13.42	0	0	0	0	0	0
Reach 6	0.475	0.145	0.78	8.16	1.97	8	19.01	0	0	0	0	0	0
Reach 7	0.681	0.120	0.80	8.61	1.51	8	17.63	0	0	0	0	0	0
Reach 8	0.472	0.113	0.81	4.78	0.79	4	9.78	0	0	0	0	0	0
Reach 9	0.833	0.004	0.24	5.71	0.08	4	9.62	0	0	0	0	0	0
Reach 10													
Reach 11	0.465	0.024	1.11	7.44	0.39	15	22.90	0	0	0	0	0	0
Reach 12	0.701	0.035	0.86	7.97	0.40	9	17.46	0	0	0	0	0	0
Reach 13	0.750	0.043	0.81	6.50	0.77	6	13.36	0	0	0	0	0	0
Reach 14	0.659	0.084	0.50	9.68	0.81	12	22.55	0	0	0	0	0	0
Reach 15	0.942	0.082	1.0	13.46	0.57	22	36.52	0	0	0	0	0	0
Sub-Total				104	17	101	222	0		0	0	0	0

Reach/Segment Description	Man-made portion of TCBL	Non-Point UCBOD	Non-Point UNBOD	SOD @ 20°C	Non-Point UCBOD [illegible]	Non-Point UNBOD [illegible]	SOD load @ Proj. temp.	Man-made Total Projection Benthic Load	Non-Point UCBOD [illegible]	Non-Point UNBOD [illegible]	SOD load @ Proj. temp.	[illegible] Total Projection Benthic Load
	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)
	W = K - F	X = (W)(A/D)	Y = (W)(B/D)	Z = (W)(C/D)	AA = [illegible]	AB = [illegible]	AC (note 6)	AA + AB + AC	AD = O - AA	AE = P - AB	AF = Q - AC	AD + AE + AF
Reach 1	0.00	0.000	0.000	0.00	0	0	0	0.00	4	2	2	7.49
Reach 2	0.00	0.000	0.000	0.00	0	0	0	0.00	6	3	2	10.17
Reach 3	0.00	0.000	0.000	0.00	0	0	0	0.00	9	2	2	13.30
Reach 4	0.00	0.000	0.000	0.00	0	0	0	0.00	6	2	2	8.97
Reach 5	0.00	0.000	0.000	0.00	0	0	0	0.00	7	2	4	13.42
Reach 6	0.00	0.000	0.000	0.00	0	0	0	0.00	9	2	8	19.01
Reach 7	0.00	0.000	0.000	0.00	0	0	0	0.00	9	2	8	17.63
Reach 8	0.00	0.000	0.000	0.00	0	0	0	0.00	5	1	4	9.78
Reach 9	0.00	0.000	0.000	0.00	0	0	0	0.00	6	0	4	9.62
Reach 10												
Reach 11	0.00	0.000	0.000	0.00	0	0	0	0.00	7	0	15	22.90
Reach 12	0.00	0.000	0.000	0.00	0	0	0	0.00	8	0	9	17.46
Reach 13	0.00	0.000	0.000	0.00	0	0	0	0.00	7	0	6	13.36
Reach 14	0.00	0.000	0.000	0.00	0	0	0	0.00	10	1	12	22.55
Reach 15	0.00	0.000	0.000	0.00	0	0	0	0.00	13	1	22	36.52
Sub-Total					0	0	0	0	104	17	101	222

Notes: Note 1, Data was calculated in and brought from the Calibration worksheet dataset.
Note 2, $J = [(1 - H) \times (D - F) + F]$
Note 3, $K = [(J - F)/(1 - MOS) + F]$
Note 4, $Q = R \times C \times N \times 1.065^{(H-20)}$
Note 5, $V = S \times 1.065^{(H-20)}$
Note 6, $AC = R \times C \times Z \times 1.065^{(H-20)}$

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) = MOG + MOU =	0%

Summer TMDL Calculations for Point Source loads:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

[redacted]

Input data into the shaded cells.

Point Source Loading Calculations

Pt. Source / Facility Description and Reach #	Receiving Stream	Included in the Projection Model (Yes/No)	Anticipated/ design flow (cms)	Flow (cms)	Proposed Permit Limits			UCBOD				UNBOD				Sub-total of Point Source Loads		
					$CBOD_5$ (mg/l)	NH_3N (mg/l)	MOS (%)	Ultimate Conc. (mg/l) (2)	Loads (kg/day) (1)	WLA (kg/day)	Reserve/ MOS Load (kg/day)	Ultimate Conc. (mg/l) (2)	Loads (kg/day) (1)	WLA (kg/day)	Reserve/ MOS Load (kg/day)	Loads (kg/day)	WLA (kg/day)	Reserve/ MOS (kg/day)
			A	A1 = A/(1-D)	B	C	D	E = 2.3 x B	F = (86.4)(A1)(E)	G = (1-D) x F	H = (D)(F)	I = 4.3 x B	J = (86.4)(A1)(I)	K = (1-D) x J	L = (D)(J)	F + J	G + K	H + L
SUB-TOTAL Loads									0	0	0		0	0	0	0	0	0

(1) - Load(kg/day) = 86.4 x Ultimate Conc.(mg/l) x Modeled Flow(cms)

(2) - [UCBOD conc. = CBOD5(mg/l) x 2.3] and [UNBOD conc. = NH3N(mg/l) x 4.3]

Winter TMDL Calculations for Point Source loads:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

Input data into the shaded cells.

Point Source Loading Calculations																			
					Proposed Permit Limits			UCBOD				UNBOD				Sub-total of Point Source Loads			
Pt. Source / Facility Description and Reach #	Receiving Stream	Included in the Projection Model (Yes/No)	Anticipated/ design flow (cms)	Flow (cms)	$CBOD_5$ (mg/l)	NH_3N (mg/l)	MOS (%)	Ultimate Conc. (mg/l) (2)	Loads (kg/day) (1)	WLA (kg/day)	Reserve/ MOS Load (kg/day)	Ultimate Conc. (mg/l) (2)	Loads (kg/day) (1)	WLA (kg/day)	Reserve/ MOS Load (kg/day)	Loads (kg/day)	WLA (kg/day)	Reserve/ MOS (kg/day)
			A	A1 = A/(1-D)	B	C	D	E = 2.3 x B	F = (86.4)(A1)(E)	G = (1-D) x F	H = (D)(F)	I = 4.3 x B	J = (86.4)(A1)(I)	K = (1-D) x J	L = (D)(J)	F + J	G + K	H + L
SUB-TOTAL Loads									0	0	0		0	0	0	0	0	0

(1) - Load(kg/day) = 86.4 x Ultimate Conc.(mg/l) x Modeled Flow(cms)

(2) - [UCBOD conc. = CBOD5(mg/l) x 2.3] and [UNBOD conc. = NH3N(mg/l) x 4.3]

Summer TMDL calculations and Projection model calculations for Headwater / Tributary loads:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

[redacted]

Shaded cells are input values for calculations.
Values to be used in the projection models.

Headwater / Tributary load determinations

Headwater / Tributary Description and Reach #	Seasonal Critical flow (cms)	UCBOD (mg/l)	UNBOD (mg/l)	UCBOD (kg/day)	UNBOD (kg/day)	Background UCBOD conc. (mg/l)	Background UNBOD conc. (mg/l)	Background UCBOD Load (kg/day)	Background UNBOD Load (kg/day)	Percent reduction of Man-Made loads	UCBOD load adjusted for % Reduction (kg/day)	UNBOD load adjusted for % Reduction (kg/day)	Reduced UCBOD load adjusted for MOS (kg/day)	Reduced UNBOD load adjusted for MOS (kg/day)	Projection UCBOD input conc. (mg/l)	Projection UNBOD input conc. (mg/l)	Total MOS (kg/day)	Total LA (kg/day)
	A	B	C	D = (86.4)(A)(B)	E = (86.4)(A)(C)	F	G	H = (86.4)(A)(F)	I = (86.4)(A)(G)	J	K = (D-H)(1-J) + H	L = (D-I)(1-J) + I	M = (K - H) / (1 - MOS) + H	N = (L - I) / (1 - MOS) + I	(M)/[(A)(86.4)]	(N)/[(A)(86.4)]	(M+N) - (K+L)	K + L
Reach 1, Marsh Bayou at Welcome Road	0.0614	12.19	11.47	64.64	60.82	2.35	5.81	12.46	30.81	100%	12.46	30.81	12.46	30.81	2.35	5.81	0.00	43.27
SUB-TOTAL TMDL LOADING				65	61			12	31		12	31	12	31			0	43

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) =	0%

Winter TMDL calculations and Projection model calculations for Headwater / Tributary loads:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

[redacted]

Shaded cells are input values for calculations.
Values to be used in the projection models.

Headwater / Tributary load determinations

Headwater / Tributary Description and Reach #	Seasonal Critical flow (cms)	UCBOD (mg/l)	UNBOD (mg/l)	UCBOD (kg/day)	UNBOD (kg/day)	Background UCBOD conc. (mg/l)	Background UNBOD conc. (mg/l)	Background UCBOD Load (kg/day)	Background UNBOD Load (kg/day)	Percent reduction of Man-Made loads	UCBOD load adjusted for % Reduction (kg/day)	UNBOD load adjusted for % Reduction (kg/day)	Reduced UCBOD load adjusted for MOS (kg/day)	Reduced UNBOD load adjusted for MOS (kg/day)	Projection UCBOD input conc. (mg/l)	Projection UNBOD input conc. (mg/l)	Total MOS (kg/day)	Total LA (kg/day)
	A	B	C	D = (86.4)(A)(B)	E = (86.4)(A)(C)	F	G	H = (86.4)(A)(F)	I = (86.4)(A)(G)	J	K = (D-H)(1-J) + H	L = (D-I)(1-J) + I	M = (K - H) / (1 - MOS) + H	N = (L - I) / (1 - MOS) + I	(M)/[(A)(86.4)]	(N)/[(A)(86.4)]	(M+N) - (K+L)	K + L
Reach 1, Marsh Bayou at Welcome Road	0.0710	12.19	11.47	74.78	70.36	2.36	5.81	14.48	35.64	100%	14.48	35.64	14.48	35.64	2.36	5.81	0.00	50.12
SUB-TOTAL TMDL LOADING				75	70			14	36		14	36	14	36			0	50

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) =	0%

Summer TMDL calculations and Projection model calculations for incremental loads:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

[redacted]

Shaded cells are input values for calculations.
Values to be used in the projection models.

Incremental Load Determinations:

Reach Description and #	Calibration Load determinations:									Percentage Reduction calculations:			Projection Model Input determinations:				Projection Model Input determinations:			
	Projection Flow (cms)	Calb. UCBOD conc. (mg/l)	Unadjusted UCBOD (kg/day)	Calb. UNBOD conc. (mg/l)	Unadjusted UNBOD (kg/day)	Background Conc. UCBOD (mg/l)	Background Conc. UNBOD (mg/l)	Background Load UCBOD (kg/day)	Background Load UNBOD (kg/day)	Actual % Reduction of Man-Made Loads	Increm. UCBOD Load Adjusted For % Reduction (LA load)	Increm. UNBOD Load Adjusted For % Reduction (LA load)	Increm. UCBOD Adjusted for MOS (kg/day) (1)	Increm. UNBOD Adjusted for MOS (kg/day) (1)	Projection UCBOD conc. (mg/l)	Projection UNBOD conc. (mg/l)	Proj. UCBOD MOS load (kg/day)	Proj. UNBOD MOS load (kg/day)	Sub-total MOS load (kg/day)	Sub-total LA load (kg/day)
[redacted]	A	B	C = (86.4)(A)(B)	D	E = (86.4)(A)(D)	F	G	H = (86.4)(A)(F)	I = (86.4)(A)(G)	J, Note 1	K = (C-H)(1-J) + H	L = (E-I)(1-J) + I	M = (K-H) / (1-MOS) + H	N = (L-I) / (1-MOS) + I	M / [(A)(86.4)]	N / [(A)(86.4)]	O = M - K	P = N - L	O + P	K + L
										100%										
										100%										
										100%										
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										100%										
										100%										
										100%										
										100%										
										100%										
Sub-Total benthic loading								0	0		0	0	0	0			0	0	0	0

Note 1: The percentage reduction values are taken from the "Non-Point Benthic Load Input and TMDL Calculations" worksheet.

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) =	0%

Winter TMDL calculations and Projection model calculations for Incremental loads:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

[redacted]

Shaded cells are input values for calculations.
Values to be used in the projection models.

Incremental Load Determinations:

Reach Description and #	Calibration Load determinations:									Percentage Reduction calculations:			Projection Model Input determinations:				Projection Model Input determinations:			
	Projection Flow (cms)	Calb. UCBOD conc. (mg/l)	Unadjusted UCBOD (kg/day)	Calb. UNBOD conc. (mg/l)	Unadjusted UNBOD (kg/day)	Background Conc. UCBOD (mg/l)	Background Conc. UNBOD (mg/l)	Background Load UCBOD (kg/day)	Background Load UNBOD (kg/day)	Actual % Reduction of Man-Made Loads	Increm. UCBOD Load Adjusted For % Reduction (LA load)	Increm. UNBOD Load Adjusted For % Reduction (LA load)	Increm. UCBOD Adjusted for MOS (kg/day) (1)	Increm. UNBOD Adjusted for MOS (kg/day) (1)	Projection UCBOD conc. (mg/l)	Projection UNBOD conc. (mg/l)	Proj. UCBOD MOS load (kg/day)	Proj. UNBOD MOS load (kg/day)	Sub-total MOS load (kg/day)	Sub-total LA load (kg/day)
[redacted]	A	B	C = (86.4)(A)(B)	D	E = (86.4)(A)(D)	F	G	H = (86.4)(A)(F)	I = (86.4)(A)(G)	J, Note 1	K = (C-H)(1-J) + H	L = (E-I)(1-J) + I	M = (K-H) / (1-MOS) + H	N = (L-I) / (1-MOS) + I	M / [(A)(86.4)]	N / [(A)(86.4)]	O = M - K	P = N - L	O + P	K + L
										100%										
										100%										
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										100%										
										100%										
										100%										
										100%										
										100%										
Sub-Total benthic loading								0	0		0	0	0	0			0	0	0	0

Note 1: The percentage reduction values are taken from the "Non-Point Benthic Load Input and TMDL Calculations" worksheet.

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) =	20%

Calibration Model Non-Point Load Equivalent Calculations:

Estimated Man-Made Load Reduced 70%

Modeled stream or water body:	MARSH BAYOU, SOUTHEAST OF TOPSY, LA

Shaded cells are input values for calculations.

REACH NUMBER & DESCRIPTION	Calibration Model Reach Length (km)	Calibration Model Average Reach Width (meters)	Calibration Model UCBOD Nonpoint loading (kg/day)	Calibration Model UNBOD Nonpoint loading (kg/day)	Calibration Model UCBOD Nonpoint loading (gm O_2/m^2/day)	Calibration Model UNBOD Nonpoint loading (gm O_2/m^2/day)	Calibration Model SOD (gm O_2/m^2/day)	Calibration Model TOTAL Benthic Load (gm O_2/m^2/day)
	A	B	C	D	E = C / (A x B)	F = D / (A x B)	G	H = E + F + G
Reach 1, Marsh Bayou, E. Welcome Rd.-Rkm 8.6	0.92	4.42	10	4	2.459	1.082	1.80	5.34
Reach 2, Marsh Bayou, Rkm 8.6-Unnamed tributary (UT) left decending bank (LDB)	1.00	5.42	16	8	2.952	1.384	1.15	5.49
Reach 3, Marsh Bayou, UT LDB-Site 4	0.95	7.77	26	7	3.522	0.989	1.15	5.66
Reach 4, Marsh Bayou, Rkm 6.65-E. of Topsy Rd.	0.65	7.77	16.00	4.40	3.168	0.871	1.40	5.44
Reach 5, Marsh Bayou, E. of Topsy Rd.-Rkm 5.2	0.80	10.01	22.00	5.50	2.747	0.687	2.00	5.43
Reach 6, Marsh Bayou, Rkm 5.2-UT LDB	1.00	12.01	27.00	5.80	2.248	0.483	2.60	5.33
Reach 7, Marsh Bayou, UT LDB-Site 3	0.90	13.25	29.00	5.10	2.432	0.428	2.85	5.71
Reach 8, Marsh Bayou, Site 3-Little Marsh Bayou	0.50	13.25	15.00	2.50	2.264	0.377	2.70	5.34
Reach 9, Marsh Bayou, Little Marsh Bayou-Beaver Dam	0.25	23.62	20.00	0.10	3.387	0.017	3.10	6.50
Reach 10, Marsh Bayou, Beaver Dam								
Reach 11, Marsh Bayou, Beaver Dam-RKM 2.0	0.55	23.62	18.00	1.00	1.386	0.077	3.30	4.76
Reach 12, Marsh Bayou, Rkm 2.0-UT LDB	0.40	24.62	16.00	0.80	1.625	0.081	2.00	3.71
Reach 13, Marsh Bayou, Rkm UT LDB-Natural Diversion-Calcasieu River	0.30	25.12	14.00	0.80	1.858	0.106	2.00	3.96
Reach 14, Marsh Bayou, Natural Diversion to Calcasieu R.-Rkm 0.8	0.50	25.62	14.00	0.80	1.093	0.062	1.50	2.66
Reach 15, Marsh Bayou, Upper Outlet-Lower Outlet	0.80	26.12	14.00	0.80	0.670	0.038	1.20	1.91

Summer Projection, Non-Point Benthic Load Input and TMDL Calculations:

Estimated Man-Made Load Reduced 70%

Modeled stream or water body:	MARSH BAYOU, SOUTHEAST OF TOPSY, LA

Shaded cells are input values for calculations.
Values to be used in the projection models.

Reach Number and Description	Non-Point CBOD	Non-Point NBOD	SOD @ 20°C	Total Calib. Benthic Load (TCBL)	Reach Length	Background Benthic Load	Reach Model Avg. Depth	Proj. Temp	Percentage Reduction of man-made sources	TCBL adjusted for % reduction (Reduced TCBL)	Reduced TCBL adjusted for MOS
	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	Kilometers	gmO₂/(m²/day)	Meters	Degrees Celsius	%	gmO₂/(m²/day)	gmO₂/(m²/day)
	A (note 1)	B (note 1)	C (note 1)	D (note 1)	E (note 1)	F	G	H	I	J (note 2)	K (note 3)
Reach 1, Marsh Bayou, [illegible]	2.459	1.082	1.80	5.341	0.92	3.00	[illegible]	25.40	70.0%	3.00	3.25
Reach 2, Marsh Bayou, [illegible]	2.932	1.384	1.15	5.466	1.00	3.00	4.62	27.40	70.0%	3.05	3.31
Reach 3, Marsh Bayou, UTLDB [illegible]	3.322	0.989	1.15	5.461	0.95	3.00	3.15	25.40	70.0%	3.10	3.37
Reach 4, Marsh Bayou, [illegible]	3.168	0.871	1.40	5.439	0.65	3.00	9.15	25.40	70.0%	3.03	3.29
Reach 5, Marsh Bayou, [illegible]	2.747	0.687	2.00	5.434	0.80	2.50	13.40	27.40	70.0%	3.03	3.29
Reach 6, Marsh Bayou, [illegible]	2.248	0.483	2.60	5.331	1.00	3.00	37.48	25.40	70.0%	3.00	3.25
Reach 7, Marsh Bayou, UTLDB [illegible]	2.432	0.428	2.85	5.710	0.90	3.00	13.99	25.40	70.0%	3.11	3.39
Reach 8, Marsh Bayou, [illegible]	3.264	0.377	2.70	5.342	0.50	3.00	13.89	25.40	70.0%	3.00	3.25
Reach 9, Marsh Bayou, [illegible]	3.387	0.017	3.10	6.504	0.25	3.00	37.09	25.40	70.0%	3.35	3.49
Reach 10, Marsh Bayou, [illegible]											
Reach 11, Marsh Bayou, [illegible]	1.386	0.077	3.30	4.763	0.35	3.00	37.49	40.26	70.0%	2.83	3.04
Reach 12, Marsh Bayou, [illegible]	1.485	0.081	2.00	3.706	0.40	3.00	28.09	30.30	70.0%	2.51	2.64
Reach 13, Marsh Bayou, [illegible]	1.858	0.304	2.00	3.964	0.30	3.00	28.38	30.30	70.0%	2.59	2.74
Reach 14, Marsh Bayou, [illegible]	1.093	0.062	1.30	2.455	0.30	3.00	[illegible]	30.30	70.0%	2.20	2.25
Reach 15, Marsh Bayou, [illegible]	0.670	0.088	1.20	1.908	0.80	3.00	[illegible]	30.30	70.0%	1.91	1.91
Sub-Total										39.71	

Reach Number and Description	Non-Point CBOD	Non-Point NBOD	SOD @ 20°C	Non-Point CBOD INPUTS	Non-Point NBOD INPUTS	SOD load @ Proj. temp.	Total Projection Benthic Load (AA+MOS)	MOS Total Benthic Load @ 20°C	MOS SOD @ 20°C	Non-Point CBOD MOS Loads	Non-Point NBOD MOS Loads	Adjusted SOD MOS @ Proj. temp	Adjusted Total MOS @ Proj. temp
	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)
	L = (K*A / D)	M = (K*B / D)	N = (K*C / D)	O = (note 4)	P = (note 5)	Q (note 6)	O + P + Q	R = (K - J)*E	S = (C*E)	T =	U =	V (note 6)	T + U + V
Reach 1	1.498	0.639	1.30	7.76	3.41	7.98	19.15	1	0	1	0	1	1
Reach 2	1.780	0.834	0.60	11.80	5.58	6.44	23.79	2	0	1	0	1	2
Reach 3	2.099	0.389	0.90	18.20	5.11	8.35	31.66	2	0	1	0	1	3
Reach 4	1.916	0.527	0.85	11.52	2.12	7.06	21.36	2	0	1	0	1	2
Reach 5	1.462	0.416	1.21	15.57	3.50	13.61	34.70	3	1	1	0	1	3
Reach 6	1.770	0.294	1.26	18.47	3.97	20.01	52.45	3	2	1	0	2	4
Reach 7	1.444	0.254	1.60	18.19	3.20	29.95	51.33	4	2	1	0	2	4
Reach 8	1.379	0.220	1.61	9.48	1.61	16.16	27.41	2	1	1	0	1	2
Reach 9	1.921	0.010	1.76	13.09	0.05	16.73	29.81	2	1	1	0	2	3
Reach 10													
Reach 11	0.883	0.049	2.50	13.18	0.73	61.49	75.38	3	2	1	0	4	5
Reach 12	1.157	0.058	1.42	12.00	0.65	31.40	45.05	1	1	1	0	2	2
Reach 13	1.282	0.073	1.98	12.00	0.48	23.23	34.84	1	1	1	0	1	2
Reach 14	0.924	0.053	1.27	13.44	0.77	36.20	50.41	1	0	0	0	1	1
Reach 15	0.470	0.038	1.20	15.86	0.91	55.73	72.49	0	0	0	0	0	0
Sub-Total				190	34	346	570.05	27		12	2	19	30.73

Reach Number and Description	Man-made portion of TCBL	Non-Point CBOD	Non-Point NBOD	SOD @ 20°C	Non-Point CBOD INPUTS	Non-Point NBOD INPUTS	SOD load @ Proj. temp.	Man-made Total Projection Benthic Load	Non-Point CBOD INPUTS	Non-Point NBOD INPUTS	SOD load @ Proj. temp.	Man-made Total Projection Benthic Load
	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	gmO₂/(m²/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)
	W = Z - F	X = (W*A / D)	Y = (W*B / D)	Z = (W*C / D)	AA =	AB =	AC (note 6)	AA + AB + AC	AD = O - AA	AE = P - AB	AF = Q - AC	AD + AE + AF
Reach 1	1.25	0.577	0.234	0.42	3	1	3	7.38	4.77	2.30	4.91	11.77
Reach 2	1.31	0.708	0.320	0.27	5	2	3	9.40	7.14	3.34	3.91	14.39
Reach 3	1.37	0.854	0.240	0.28	7	2	3	12.89	10.79	3.09	4.95	18.77
Reach 4	1.39	0.751	0.207	0.33	4	1	3	8.45	4.91	1.90	4.29	13.11
Reach 5	1.39	0.651	0.163	0.47	6	1	6	13.39	9.39	2.32	9.50	21.11
Reach 6	1.25	0.527	0.113	0.61	7	2	12	20.16	11.37	2.44	18.47	32.29
Reach 7	1.39	0.393	0.104	0.69	7	1	12	21.06	10.73	1.89	17.64	30.27
Reach 8	1.25	0.591	0.089	0.63	4	1	6	10.56	5.98	0.99	9.94	16.85
Reach 9	1.49	0.880	0.004	0.81	4	0	8	13.45	7.06	0.04	9.07	16.16
Reach 10												
Reach 11	1.04	0.501	0.017	0.72	4	0	21	25.72	8.67	0.48	40.51	49.66
Reach 12	0.64	0.280	0.014	0.35	3	0	8	10.92	9.45	0.49	23.79	34.14
Reach 13	0.74	0.345	0.020	0.37	3	0	6	9.38	8.04	0.46	16.98	25.48
Reach 14	0.25	0.101	0.006	0.14	1	0	4	5.32	11.97	0.48	32.24	44.80
Reach 15	0.00	0.000	0.000	0.00	0	0	0	0.00	15.84	0.91	55.73	72.49
Sub-Total					42	12	94	148.47	128.37	21.07	251.95	401.39

Notes: Note 1, Data was calculated in and brought from the Calibration worksheet dataset.
Note 2, $J = [(1 - H) \times (D - F) + F]$
Note 3, $K = [(J - F)/(1 - MOS) + F]$
Note 4, $Q = K \times G \times N \times 1.065^{(I-20)}$
Note 5, $V = S \times 1.065^{(I-20)}$
Note 6, $AC = K \times G \times Z \times 1.065^{(I-20)}$

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) = (MOG + MOU) =	20%

Winter Projection, Non-Point Benthic Load Input and TMDL Calculations:

Estimated Man-Made Load Reduced 70%

Modeled stream or water body:	MARSH BAYOU, SOUTHEAST OF TOPSY, LA

Shaded cells are input values for calculating
Values to be used in the projection models

Reach Number and Description	Non-Point UCBOD	Non-Point UNBOD	SOD @ 20°C	Total Calib. Benthic Load (TCBL)	Reach Length	Natural Benthic Load	Proj. Model Avg. Reach Width	Proj. Temp.	Percentage Reduction of man-made sources	TCBL adjusted for % reduction (Reduced TCBL)	Reduced TCBL adjusted for MOS	Non-Point UCBOD	Non-Point UNBOD	SOD @ 20°C	Non-Point UCBOD INPUTS	Non-Point UNBOD INPUTS	SOD load @ Proj. temp	Total Projection Benthic Load	MOS Total Benthic Load @ 20°C	MOS SOD @ 20°C	Non-Point UCBOD MOS Loads	Non-Point UNBOD MOS Loads	Adjusted SOD/MOS @ Proj. temp	Adjusted Total MOS @ Proj. temp	Man-made portion of TCBL	Non-Point UCBOD	Non-Point UNBOD	SOD @ 20°C	Non-Point UCBOD INPUTS	Non-Point UNBOD INPUTS	SOD load @ Proj. temp	Man-made Total Projection Benthic Load	Non-Point UCBOD INPUTS	Non-Point UNBOD INPUTS	SOD load @ Proj. temp	Non-man-made Total Projection Benthic Load
	gmO2/m²/day	gmO2/m²/day	gmO2/m²/day	gmO2/m²/day	Kilometers	gmO2/m²/day	Meters	(degrees Celsius)	%	gmO2/m²/day	gmO2/m²/day	gmO2/m²/day	gmO2/m²/day	gmO2/m²/day	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	gmO2/m²/day	gmO2/m²/day	gmO2/m²/day	gmO2/m²/day	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)	(kg/day)
[redacted]	A (note 1)	B (note 1)	C (note 1)	D (note 1)	E (note 1)	F	G	H	I	J (note 2)	K (note 3)	L = (K×A/D)	M = (K×B/D)	N = (K×C/D)	O = [illegible]	P = [illegible]	Q (note 4)	O + P + Q	R = [illegible]	S = [illegible]	T = [illegible]	U = [illegible]	V (note 5)	T + U + V	W = K - F	X = (W×L/D)	Y = (W×M/D)	Z = (W×N/D)	AA = [illegible]	AB = [illegible]	AC (note 6)	AA + AB + AC	AD = O - AA	AE = P - AB	AF = Q - AC	AD + AE + AF
Reach 1, Marsh Bayou, [illegible]	2.459	1.080	1.80	5.341	0.92	[illegible]	4.12	[illegible]	70.00%	3.00	3.25	1.498	0.639	1.50	7.00	3.47	4	15.64	1	0	1	0	0	1	1.25	0.577	0.254	0.42	3	1	2	6.02	5	2	3	9.62
Reach 2, Marsh Bayou, [illegible]	2.922	1.384	1.15	5.484	1.00	2.07	8.73	19.30	70.00%	3.05	3.31	1.780	0.834	[illegible]	11.84	5.61	3	21.03	2	0	1	0	0	2	1.31	0.703	0.330	0.27	5	2	1	8.21	7	3	2	12.72
Reach 3, Marsh Bayou, [illegible]	3.522	0.989	1.15	5.661	0.95	2.00	9.12	15.30	70.00%	3.10	3.37	2.099	0.589	0.69	18.48	5.17	4	28.04	2	0	1	0	0	2	1.37	0.854	0.240	0.28	7	2	2	11.41	11	3	5	16.62
Reach 4, Marsh Bayou, [illegible]	3.168	0.871	1.40	5.439	0.65	2.00	9.23	13.30	70.00%	3.08	3.29	1.916	0.527	0.85	11.30	3.16	4	18.44	2	0	1	0	0	1	1.29	0.751	0.207	0.33	3	1	1	7.21	7	2	2	11.21
Reach 5, Marsh Bayou, [illegible]	2.747	0.687	2.00	5.434	0.80	2.00	11.50	11.30	70.00%	3.08	3.29	1.662	0.416	1.21	15.40	3.85	8	27.39	2	1	1	0	1	2	1.29	0.651	0.163	0.47	6	2	3	10.81	9	2	5	16.78
Reach 6, Marsh Bayou, [illegible]	2.248	0.483	2.80	5.311	1.00	2.00	13.58	15.30	70.00%	3.00	3.25	1.370	0.294	1.38	18.41	4.00	16	38.41	3	2	1	0	1	3	1.25	0.827	0.113	0.41	7	2	6	14.84	11	2	10	23.77
Reach 7, Marsh Bayou, [illegible]	2.492	0.428	2.85	5.710	0.90	2.00	14.64	15.30	70.00%	3.11	3.39	1.444	0.254	1.49	18.25	3.21	16	37.37	4	2	1	0	1	3	1.39	0.593	0.104	0.49	7	1	7	15.33	11	2	9	22.04
Reach 8, Marsh Bayou, [illegible]	2.264	0.377	2.70	5.342	0.50	2.00	18.64	15.30	70.00%	3.00	3.25	1.379	0.230	1.66	9.68	1.61	9	19.88	2	1	1	0	1	2	1.25	0.531	0.089	0.63	4	1	3	7.46	6	1	5	12.22
Reach 9, Marsh Bayou, [illegible]	3.387	0.017	3.30	6.704	0.25	2.00	27.40	15.30	70.00%	3.35	3.49	1.921	0.010	1.78	13.10	0.07	9	22.18	2	1	1	0	1	2	1.49	0.880	0.004	0.81	6	0	4	10.16	7	0	5	12.03
Reach 10, Marsh Bayou, [illegible]																																				
Reach 11, Marsh Bayou, [illegible]	1.386	0.077	3.30	4.763	0.53	2.00	27.40	15.30	70.00%	2.83	3.04	0.883	0.049	3.50	18.21	0.74	29	45.44	3	2	1	0	2	3	1.04	0.301	0.017	0.72	5	0	10	14.82	9	0	19	28.62
Reach 12, Marsh Bayou, [illegible]	1.625	0.081	2.00	3.706	0.40	2.00	28.40	15.30	70.00%	2.51	2.64	1.157	0.058	1.45	15.15	0.66	15	28.81	1	1	1	0	1	1	0.64	0.280	0.014	0.35	3	0	4	6.98	10	0	11	21.83
Reach 13, Marsh Bayou, [illegible]	1.858	0.106	2.00	3.964	0.50	2.00	23.20	15.30	70.00%	2.59	2.74	1.282	0.073	1.38	11.13	0.64	11	22.85	1	1	1	0	1	1	0.74	0.345	0.020	0.37	3	0	3	4.15	8	0	8	16.70
Reach 14, Marsh Bayou, [illegible]	1.093	0.042	1.50	2.635	0.50	2.00	30.40	15.30	70.00%	2.20	2.25	0.924	0.053	1.27	13.70	0.78	17	31.64	1	0	0	0	0	1	0.25	0.101	0.006	0.14	1	0	2	2.46	12	1	15	28.19
Reach 15, Marsh Bayou, [illegible]	0.670	0.038	1.20	1.908	0.80	2.00	29.90	15.30	70.00%	1.91	1.91	0.670	0.038	1.20	16.03	0.82	27	43.56	0	0	0	0	0	0	0.00	0.000	0.000	0.00	0	0	0	0.00	16	1	27	43.56
Sub-Total										39.71					192	34	173	599	27		22	3	10	28					41	13	49	129	130	21	125	296

Notes: Note 1, Data was calculated in and brought from the Calibration worksheet dataset.
Note 2, $J = [(1 - H) \times (D - F) + F]$
Note 3, $K = [(J - F) / (1 - MOS) + F]$
Note 4, $Q = E \times G \times N \times 1.065^{(I-20)}$
Note 5, $V = S \times 1.065^{(I-20)}$
Note 6, $AC = E \times G \times Z \times 1.065^{(I-20)}$

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) = [MOG + MOU] =	20%

Summer TMDL Calculations for Point Source loads:

Estimated Man-Made Load Reduced 70%

[redacted]

Input data into the shaded cells.

Point Source Loading Calculations

Pt. Source / Facility Description and Reach #	Receiving Stream	Included in the Projection Model (Yes/No)	Anticipated/ design flow (cms)	Flow (cms)	Proposed Permit Limits			UCBOD				UNBOD				Sub-total of Point Source Loads		
					$CBOD_5$ (mg/l)	NH_3N (mg/l)	MOS (%)	Ultimate Conc. (mg/l) (2)	Loads (kg/day) (1)	WLA (kg/day)	Reserve/ MOS Load (kg/day)	Ultimate Conc. (mg/l) (2)	Loads (kg/day) (1)	WLA (kg/day)	Reserve/ MOS Load (kg/day)	Loads (kg/day)	WLA (kg/day)	Reserve/ MOS (kg/day)
			A	A1 = A/(1-D)	B	C	D	E = 2.3 x B	F = (86.4)(A1)(E)	G = (1-D) x F	H = (D)(F)	I = 4.3 x B	J = (86.4)(A1)(I)	K = (1-D) x J	L = (D)(J)	F + J	G + K	H + L
SUB-TOTAL Loads									0	0	0		0	0	0	0	0	0

(1) - Load(kg/day) = 86.4 x Ultimate Conc.(mg/l) x Modeled Flow(cms)

(2) - [UCBOD conc. = CBOD5(mg/l) x 2.3] and [UNBOD conc. = NH3N(mg/l) x 4.3]

Winter TMDL Calculations for Point Source loads:

Estimated Man-Made Load Reduced 70%

[redacted]

Input data into the shaded cells.

Point Source Loading Calculations																		
Pt. Source / Facility Description and Reach #	Receiving Stream	Included in the Projection Model (Yes/No)	Anticipated/ design flow (cms)	Flow (cms)	Proposed Permit Limits			UCBOD				UNBOD				Sub-total of Point Source Loads		
					$CBOD_5$ (mg/l)	NH_3N (mg/l)	MOS (%)	Ultimate Conc. (mg/l) (2)	Loads (kg/day) (1)	WLA (kg/day)	Reserve/ MOS Load (kg/day)	Ultimate Conc. (mg/l) (2)	Loads (kg/day) (1)	WLA (kg/day)	Reserve/ MOS Load (kg/day)	Loads (kg/day)	WLA (kg/day)	Reserve/ MOS (kg/day)
			A	A1 = A/(1-D)	B	C	D	E = 2.3 x B	F = (86.4)(A1)(E)	G = (1-D) x F	H = (D)(F)	I = 4.3 x B	J = (86.4)(A1)(I)	K = (1-D) x J	L = (D)(J)	F + J	G + K	H + L
SUB-TOTAL Loads									0	0	0		0	0	0	0	0	0

(1) - Load(kg/day) = 86.4 x Ultimate Conc.(mg/l) x Modeled Flow(cms)

(2) - [UCBOD conc. = CBOD5(mg/l) x 2.3] and [UNBOD conc. = NH3N(mg/l) x 4.3]

Summer TMDL calculations and Projection model calculations for Headwater / Tributary loads:

Estimated Man-Made Load Reduced 70%

[redacted]

Shaded cells are input values for calculations.
Values to be used in the projection models.

Headwater / Tributary load determinations

Headwater / Tributary Description and Reach #	Seasonal Critical flow (cms)	UCBOD (mg/l)	UNBOD (mg/l)	UCBOD (kg/day)	UNBOD (kg/day)	Background UCBOD conc. (mg/l)	Background UNBOD conc. (mg/l)	Background UCBOD Load (kg/day)	Background UNBOD Load (kg/day)	Percent reduction of Man-Made loads	UCBOD load adjusted for % Reduction (kg/day)	UNBOD load adjusted for % Reduction (kg/day)	Reduced UCBOD load adjusted for MOS (kg/day)	Reduced UNBOD load adjusted for MOS (kg/day)	Projection UCBOD input conc. (mg/l)	Projection UNBOD input conc. (mg/l)	Total MOS (kg/day)	Total LA (kg/day)
	A	B	C	D = (86.4)(A)(B)	E = (86.4)(A)(C)	F	G	H = (86.4)(A)(F)	I = (86.4)(A)(G)	J	K = (D-H)(1-J) + H	L = (D-I)(1-J) + I	M = (K - H) / (1 - MOS) + H	N = (L - I) / (1 - MOS) + I	(M)/[(A)(86.4)]	(N)/[(A)(86.4)]	(M+N) - (K+L)	K + L
Reach 1, Marsh Bayou at Welcome Road	0.0614	12.19	11.47	64.64	60.82	2.94	7.26	15.59	38.50	70%	30.30	45.19	33.98	46.87	6.41	8.84	5.35	75.50
SUB-TOTAL TMDL LOADING				64.64	60.82			15.59	38.50		30.30	45.19	33.98	46.87			5.35	75.50

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) =	20%

Winter TMDL calculations and Projection model calculations for Headwater / Tributary loads:

Estimated Man-Made Load Reduced 70%

[redacted]

Shaded cells are input values for calculations.
Values to be used in the projection models.

Headwater / Tributary load determinations

Headwater / Tributary Description and Reach #	Seasonal Critical flow (cms)	UCBOD (mg/l)	UNBOD (mg/l)	UCBOD (kg/day)	UNBOD (kg/day)	Background UCBOD conc. (mg/l)	Background UNBOD conc. (mg/l)	Background UCBOD Load (kg/day)	Background UNBOD Load (kg/day)	Percent reduction of Man-Made loads	UCBOD load adjusted for % Reduction (kg/day)	UNBOD load adjusted for % Reduction (kg/day)	Reduced UCBOD load adjusted for MOS (kg/day)	Reduced UNBOD load adjusted for MOS (kg/day)	Projection UCBOD input conc. (mg/l)	Projection UNBOD input conc. (mg/l)	Total MOS (kg/day)	Total LA (kg/day)
	A	B	C	D = (86.4)(A)(B)	E = (86.4)(A)(C)	F	G	H = (86.4)(A)(F)	I = (86.4)(A)(G)	J	K = (D-H)(1-J) + H	L = (D-I)(1-J) + I	M = (K - H) / (1 - MOS) + H	N = (L - I) / (1 - MOS) + I	(M)/[(A)(86.4)]	(N)/[(A)(86.4)]	(M+N) - (K+L)	K + L
Reach 1, Marsh Bayou at Welcome Road	0.0710	12.19	11.47	74.78	70.36	2.94	7.26	18.04	44.54	70%	35.06	52.28	39.31	54.22	6.41	8.84	6.19	87.34
SUB-TOTAL TMDL LOADING				75	70			18	45		35	52	39	54			6	87

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) =	20%

Summer TMDL calculations and Projection model calculations for Incremental loads:

Estimated Man-Made Load Reduced 70%

[redacted]

Shaded cells are input values for calculations.
Values to be used in the projection models.

Incremental Load Determinations:

Reach Description and #	Calibration Load determinations:									Percentage Reduction calculations:			Projection Model Input determinations:				Projection Model Input determinations:			
	Projection Flow (cms)	Calib. UCBOD conc. (mg/l)	Unadjusted UCBOD (kg/day)	Calib. UNBOD conc. (mg/l)	Unadjusted UNBOD (kg/day)	Background Conc. UCBOD (mg/l)	Background Conc. UNBOD (mg/l)	Background Load UCBOD (kg/day)	Background Load UNBOD (kg/day)	Actual % Reduction of Man-Made Loads	Increm. UCBOD Load Adjusted For % Reduction (LA load)	Increm. UNBOD Load Adjusted For % Reduction (LA load)	Increm. UCBOD Adjusted for MOS (kg/day) (1)	Increm. UNBOD Adjusted for MOS (kg/day) (1)	Projection UCBOD conc. (mg/l)	Projection UNBOD conc. (mg/l)	Proj. UCBOD MOS load (kg/day)	Proj. UNBOD MOS load (kg/day)	Sub-total MOS load (kg/day)	Sub-total LA load (kg/day)
[redacted]	A	B	C = (86.4)(A)(B)	D	E = (86.4)(A)(D)	F	G	H = (86.4)(A)(F)	I = (86.4)(A)(G)	J, Note 1	K = (C-H)(1-J) + H	L = (E-I)(1-J) + I	M = (K-H) / (1-MOS) + H	N = (L-I) / (1-MOS) + I	M / [(A)(86.4)]	N / [(A)(86.4)]	O = M - K	P = N - L	O + P	K + L
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
Sub-Total benthic loading								0	0		0	0	0	0			0	0	0	0

Note 1: The percentage reduction values are taken from the "Non-Point Benthic Load Input and TMDL Calculations" worksheet.

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) =	20%

Winter TMDL calculations and Projection model calculations for Incremental loads:

Estimated Man-Made Load Reduced 70%

[redacted]

Shaded cells are input values for calculations.
Values to be used in the projection models.

Incremental Load Determinations:																				
	Calibration Load determinations:									Percentage Reduction calculations:			Projection Model Input determinations:				Projection Model Input determinations:			
Reach Description and #	Projection Flow (cms)	Calb. UCBOD conc. (mg/l)	Unadjusted UCBOD (kg/day)	Calb. UNBOD conc. (mg/l)	Unadjusted UNBOD (kg/day)	Background Conc. UCBOD (mg/l)	Background Conc. UNBOD (mg/l)	Background Load UCBOD (kg/day)	Background Load UNBOD (kg/day)	Actual % Reduction of Man-Made Loads	Increm. UCBOD Load Adjusted For % Reduction (LA load)	Increm. UNBOD Load Adjusted For % Reduction (LA load)	Increm. UCBOD Adjusted for MOS (kg/day) (1)	Increm. UNBOD Adjusted for MOS (kg/day) (1)	Projection UCBOD conc. (mg/l)	Projection UNBOD conc. (mg/l)	Proj. UCBOD MOS load (kg/day)	Proj. UNBOD MOS load (kg/day)	Sub-total MOS load (kg/day)	Sub-total LA load (kg/day)
[redacted]	A	B	C = (86.4)(A)(B)	D	E = (86.4)(A)(D)	F	G	H = (86.4)(A)(F)	I = (86.4)(A)(G)	J, Note 1	K = (C-H)(1-J) + H	L = (E-I)(1-J) + I	M = (K-H) / (1-MOS) + H	N = (L-I) / (1-MOS) + I	M / [(A)(86.4)]	N / [(A)(86.4)]	O = M - K	P = N - L	O + P	K + L
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
										70%										
Sub-Total benthic loading								0	0		0	0	0	0			0	0	0	0

Note 1: The percentage reduction values are taken from the "Non-Point Benthic Load Input and TMDL Calculations" worksheet.

EXPLICIT MARGINS:

MARGIN OF SAFETY (MOS) (%) =	20%

APPENDIX F1 – SUMMER WATER QUALITY PROJECTION OUTPUT FILES AND PLOTS

Summer Projection Model Output File
(100% Reduction of Estimated Man-Made Load, 20% Reduction of Estimated Natural Background Loads)
Summer Projection Model Plots
(100% Reduction of Estimated Man-Made Load, 20% Reduction of Estimated Natural Background Loads)
Marsh Bayou Water Quality Summer Projection Model Input Descriptions
(100% Reduction of Estimated Man-Made Load, 20% Reduction of Estimated Natural Background Loads)

Summer Projection Model Output File
(70% Reduction of Estimated Man-Made Loads)
Summer Projection Model Plots
(70% Reduction of Estimated Man-Made Loads)
Marsh Bayou Water Quality Summer Projection Model Input Descriptions
(70% Reduction of Estimated Man-Made Loads)
Plots for Additional Summer Dissolved Oxygen Projections

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LA-QUAL Version 4.10
Louisiana Department of Environmental Quality

Input file is D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100%Manloadremoved_naturalbackgroundreduced\Summer\MARS_SUM_100ManMade-
20Bckgrnd_NoMOS.txt
Output produced at 14:41 on 04/04/2001

$$$ DATA TYPE 1 (TITLES AND CONTROL CARDS) $$$

CARD TYPE        CONTROL TITLES

TITLE01          MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
TITLE02          02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C
CNTROL11   NO    SEQUENCING OUTPUT
CNTROL12   YES   METRIC UNITS
CNTROL13   YES   OXYGEN DEPENDENT RATES
ENDATA01

$$$ DATA TYPE 2 (MODEL OPTIONS) $$$

CARD TYPE        MODEL OPTION

MODOPT01   NO    TEMPERATURE
MODOPT02   NO    SALINITY
MODOPT03   YES   CONSERVATIVE MATERIAL  I = CHLORIDES                  IN MG/L
MODOPT04   YES   CONSERVATIVE MATERIAL II = SULFATES                   IN MG/L
MODOPT05   YES   DISSOLVED OXYGEN
MODOPT06   YES   BIOCHEMICAL OXYGEN DEMAND = UCBOD
MODOPT07   NO    NITROGEN
MODOPT08   NO    PHOSPHORUS
MODOPT09   NO    CHLOROPHYLL A
MODOPT10   NO    MACROPHYTES
MODOPT11   NO    COLIFORM
MODOPT12   YES   NONCONSERVATIVE MATERIAL = NBOD                       IN MG/L
ENDATA02

$$$ DATA TYPE 3 (PROGRAM CONSTANTS) $$$

CARD TYPE        DESCRIPTION OF CONSTANT                     VALUE

PROGRAM          HYDRAULIC CALCULATION METHOD      =       2.00000
PROGRAM          MAXIMUM ITERATION LIMIT           =     500.00000
PROGRAM          PLOT CONTROL VALUE                =       3.00000
PROGRAM          INTERMEDIATE REPORT TYPE          =       4.00000
PROGRAM          FINAL REPORT TYPE                 =       1.00000
PROGRAM          BOD OXYGEN UPTAKE RATE            =       1.00000
PROGRAM          NCM OXYGEN UPTAKE RATE            =       1.00000
PROGRAM          INHIBITION CONTROL VALUE          =       2.00000
PROGRAM          TIDE HEIGHT (METERS)              =       0.07600
PROGRAM          TIDAL PERIOD                      =      25.00000
PROGRAM          PERIOD OF TIDAL RISE              =      12.50000
PROGRAM          DISPERSION EQUATION               =       1.00000
PROGRAM          ALGAE OXYGEN PROD                 =       0.00000
PROGRAM          OCEAN EXCHANGE RATIO              =       1.00000
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PROGRAM        KL MINIMUM                          =        0.70000
PROGRAM        K2 MAXIMUM                          =       25.00000
PROGRAM        INHIBITION CONTROL VALUE            =        3.00000
PROGRAM        N INHIBITION EQUATION               =        2.00000
PROGRAM        OXYGEN DEPENDENCE THRESHOLD         =        2.00000
PROFRAM        SETTLING RATE UNITS                 =        2.00000
PROGRAM        O ERROR CLOSURE LIMIT               =        0.75000
PROGRAM        O RELAXATION COEFFICIENT            =        0.25000
PROGRAM        O ITERATIONS PER CYCLE              =        0.00000
PROGRAM        EFFECTIVE BOD DUE TO ALGAE          =        0.00000
ENDATA03

$$$ DATA TYPE 4 (TEMPERATURE CORRECTION CONSTANTS FOR RATE COEFFICIENTS) $$$

 CARD TYPE      RATE CODE      THETA VALUE

TEMP           BOD SETT       1.02400
TEMP           NCM DECA       1.07000
TEMP           NCM SETT       1.02400
TEMP           PO4 SRCE       1.06500
TEMP           NH3 SRCE       1.06500
TEMP           BENTHAL        1.06500
TEMP           NH3 DECA       1.07000
TEMP           ORGN SET       1.07000
ENDATA04

$$$ CONSTANTS TYPE 5 (TEMPERATURE DATA) $$$

CARD TYPE      DESCRIPTION OF CONSTANT                       VALUE

ENDATA05

$$$ DATA TYPE 6 (ALGAE CONSTANTS) $$$

CARD TYPE      DESCRIPTION OF CONSTANT                       VALUE

ENDATA06

$$$ DATA TYPE 7 (MACROPHYTE CONSTANTS) $$$

CARD TYPE      DESCRIPTION OF CONSTANT                       VALUE

ENDATA07

$$$ DATA TYPE 8 (REACH IDENTIFICATION DATA) $$$
                                                   BEGIN        END    ELEM    REACH    ELEMS  BEGIN  END
CARD TYPE  REACH  ID  NAME                         REACH        REACH  LENGTH  LENGTH   PER RCH ELEM  ELEM
                                                      km           km      km      km            NUM   NUM

REACH ID     1    MB  E. WELCOME RD.-RKM 8.6        9.52   TO   8.60  0.0920    0.92     10      1    10
REACH ID     2    MB  RKM 8.6-UT LDB                8.60   TO   7.60  0.1000    1.00     10     11    20
REACH ID     3    MB  UT LDB-SITE 4                 7.60   TO   6.65  0.0950    0.95     10     21    30
REACH ID     4    MB  RKM 6.65-E. OF TOPSY RD.      6.65   TO   6.00  0.1300    0.65      5     31    35
REACH ID     5    MB  EAST OF TOPSY RD.-RKM 5.2     6.00   TO   5.20  0.1000    0.80      8     36    43
```

REACH ID	6	MB	RKM 5.2-UT LDB	5.20	TO	4.20	0.1000	1.00	10	44	53
REACH ID	7	MB	UT LDB-SITE 3	4.20	TO	3.30	0.1000	0.90	9	54	62
REACH ID	8	MB	SITE 3-LITTLE MARSH B.	3.30	TO	2.80	0.1000	0.50	5	63	67
REACH ID	9	MB	LITTLE MARSH B.-BEAVER DAM	2.80	TO	2.55	0.0500	0.25	5	68	72
REACH ID	10	MB	BEAVER DAM	2.55	TO	2.55	0.0010	0.00	1	73	73
REACH ID	11	MB	BEAVER DAM-RKM 2.0	2.55	TO	2.00	0.1100	0.55	5	74	78
REACH ID	12	MB	RKM 2.0-UT LDB	2.00	TO	1.60	0.1000	0.40	4	79	82
REACH ID	13	MB	UT LDB-NATURAL DIV. TO CAL.R.	1.60	TO	1.30	0.1000	0.30	3	83	85
REACH ID	14	MB	NAT. DIV. TO CAL.R.-RKM RKM 0.8	1.30	TO	0.80	0.1000	0.50	5	86	90
REACH ID	15	MB	UPPER OUTLET-LOWER OUTLET	0.80	TO	0.00	0.1000	0.80	8	91	98

ENDATA08

$$$ DATA TYPE 9 (ADVECTIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	WIDTH "A"	WIDTH "B"	WIDTH "C"	DEPTH "D"	DEPTH "E"	DEPTH "F"	SLOPE	MANNINGS "N"
HYDR-1	1	MB	4.450	0.360	4.000	2.100	0.480	0.400	0.00020	0.040
HYDR-1	2	MB	4.450	0.360	5.000	2.100	0.480	0.550	0.00020	0.040
HYDR-1	3	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	4	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	5	MB	5.400	0.360	9.500	1.150	0.480	0.650	0.00020	0.040
HYDR-1	6	MB	5.400	0.360	11.500	1.150	0.480	0.600	0.00020	0.040
HYDR-1	7	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	8	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	9	MB	16.500	0.500	23.000	1.200	0.200	0.760	0.00020	0.040
HYDR-1	10	MB	32.790	0.050	0.000	1.100	0.200	0.000	0.30470	0.040
HYDR-1	11	MB	16.500	0.500	23.000	1.400	0.480	0.700	0.00020	0.040
HYDR-1	12	MB	16.500	0.500	24.000	1.400	0.480	0.800	0.00020	0.040
HYDR-1	13	MB	16.500	0.500	24.500	1.400	0.480	0.930	0.00020	0.040
HYDR-1	14	MB	16.500	0.500	25.000	1.400	0.480	0.940	0.00020	0.040
HYDR-1	15	MB	16.500	0.500	25.500	1.400	0.480	0.950	0.00020	0.040

ENDATA09

$$$ DATA TYPE 10 (DISPERSIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	TIDAL RANGE	DISPERSION "A"	DISPERSION "B"	DISPERSION "C"	DISPERSION "D"
HYDR	1	MB	0.00	0.000	0.000	0.000	0.000
HYDR	2	MB	0.00	0.000	0.000	0.000	0.000
HYDR	3	MB	0.00	0.000	0.000	0.000	0.000
HYDR	4	MB	0.00	0.000	0.000	0.000	0.000
HYDR	5	MB	0.00	0.000	0.000	0.000	0.000
HYDR	6	MB	0.00	0.000	0.000	0.000	0.000
HYDR	7	MB	0.00	0.000	0.000	0.000	0.000
HYDR	8	MB	0.00	0.000	0.000	0.000	0.000
HYDR	9	MB	0.00	0.050	0.000	0.000	0.000
HYDR	10	MB	0.00	0.500	0.000	0.000	0.000
HYDR	11	MB	0.00	0.900	0.000	0.000	0.000
HYDR	12	MB	0.00	0.900	0.000	0.000	0.000
HYDR	13	MB	0.00	0.950	0.000	0.000	0.000
HYDR	14	MB	0.00	1.000	0.000	0.000	0.000
HYDR	15	MB	0.00	1.000	0.000	0.000	0.000

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ENDATA10

$$$ DATA TYPE 11 (INITIAL CONDITIONS) $$$

CARD TYPE       REACH  ID          TEMP     SALIN         DO       NH3     NO3+2      PHOS     CHL A     MACRO

INITIAL             1  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL             2  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL             3  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL             4  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL             5  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL             6  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL             7  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL             8  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL             9  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL            10  MB         25.40      0.00       8.20      0.00      0.00      0.00     11.90      0.00
INITIAL            11  MB         30.70      0.00       7.47      0.00      0.00      0.00     11.90      0.00
INITIAL            12  MB         30.70      0.00       7.47      0.00      0.00      0.00     11.90      0.00
INITIAL            13  MB         30.70      0.00       7.47      0.00      0.00      0.00     11.90      0.00
INITIAL            14  MB         30.70      0.00       7.47      0.00      0.00      0.00     11.90      0.00
INITIAL            15  MB         30.70      0.00       7.47      0.00      0.00      0.00     11.90      0.00
ENDATA11

$$$ DATA TYPE 12 (REAERATION, SEDIMENT OXYGEN DEMAND, BOD COEFFICIENTS) $$$
                                                                         AEROB                           ANAER
CARD TYPE REACH  ID       K2                K2        K2        K2    BKGRND     BOD       BOD  BOD CONV     BOD
                          OPT              "A"       "B"       "C"       SOD   DECAY      SETT    TO SOD   DECAY

COEF-1        1  MB  15 LOUISIANA        0.000     0.000     0.000     0.540   0.100     0.060     0.000   0.000
COEF-1        2  MB  15 LOUISIANA        0.000     0.000     0.000     0.340   0.100     0.060     0.000   0.000
COEF-1        3  MB  15 LOUISIANA        0.000     0.000     0.000     0.330   0.100     0.060     0.000   0.000
COEF-1        4  MB  15 LOUISIANA        0.000     0.000     0.000     0.410   0.100     0.060     0.000   0.000
COEF-1        5  MB  15 LOUISIANA        0.000     0.000     0.000     0.590   0.100     0.060     0.000   0.000
COEF-1        6  MB  15 LOUISIANA        0.000     0.000     0.000     0.780   0.100     0.060     0.000   0.000
COEF-1        7  MB  15 LOUISIANA        0.000     0.000     0.000     0.800   0.130     0.070     0.000   0.000
COEF-1        8  MB  15 LOUISIANA        0.000     0.000     0.000     0.810   0.130     0.070     0.000   0.000
COEF-1        9  MB  15 LOUISIANA        2.300     0.000     0.000     0.760   0.130     0.070     0.000   0.000
COEF-1       10  MB   1 K2=a           500.000     0.000     0.000     0.000   0.000     0.000     0.000   0.000
COEF-1       11  MB  15 LOUISIANA        0.000     0.000     0.000     1.110   0.150     0.080     0.000   0.000
COEF-1       12  MB  15 LOUISIANA        0.000     0.000     0.000     0.860   0.150     0.080     0.000   0.000
COEF-1       13  MB  20 K2=a/D           2.300     0.000     0.000     0.810   0.150     0.080     0.000   0.000
COEF-1       14  MB  20 K2=a/D           2.300     0.000     0.000     0.900   0.150     0.080     0.000   0.000
COEF-1       15  MB  20 K2=a/D           2.300     0.000     0.000     1.010   0.150     0.080     0.000   0.000
ENDATA12

$$$ DATA TYPE 13 (NITROGEN AND PHOSPHORUS COEFFICIENTS) $$$

CARD TYPE       REACH  ID         ORG-N     ORG-N  ORGN CONV       NH3       NH3      PHOS     DENIT
                                   DECA      SETT TO NH3 SRCE     DECA      SRCE      SRCE      RATE

ENDATA13

$$$ DATA TYPE 14 (ALGAE AND MACROPHYTE COEFFICIENTS) $$$
```

CARD TYPE	REACH	ID	SECCHI DEPTH	ALGAE: CHL A	ALGAE SETT	ALG CONV TO SOD	ALGAE GROW	ALGAE RESP	MACRO GROW	MACRO RESP

ENDATA14

$$$ DATA TYPE 15 (COLIFORM AND NONCONSERVATIVE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	COLIFORM DIE-OFF	NCM DECAY	NCM SETT	NCM CONV TO SOD
COEF-4	1	MB	0.00	0.15	0.03	0.00
COEF-4	2	MB	0.00	0.15	0.03	0.00
COEF-4	3	MB	0.00	0.08	0.03	0.00
COEF-4	4	MB	0.00	0.08	0.03	0.00
COEF-4	5	MB	0.00	0.08	0.03	0.00
COEF-4	6	MB	0.00	0.08	0.03	0.00
COEF-4	7	MB	0.00	0.10	0.04	0.00
COEF-4	8	MB	0.00	0.10	0.04	0.00
COEF-4	9	MB	0.00	0.10	0.04	0.00
COEF-4	10	MB	0.00	0.00	0.00	0.00
COEF-4	11	MB	0.00	0.10	0.04	0.00
COEF-4	12	MB	0.00	0.10	0.04	0.00
COEF-4	13	MB	0.00	0.10	0.04	0.00
COEF-4	14	MB	0.00	0.08	0.04	0.00
COEF-4	15	MB	0.00	0.08	0.04	0.00

ENDATA15

$$$ DATA TYPE 16 (INCREMENTAL DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE	REACH	ID	OUTFLOW	INFLOW	TEMP	SALIN	CM-I	CM-II	IN/DIST	OUT/DIST

ENDATA16

$$$ DATA TYPE 17 (INCREMENTAL DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE	REACH	ID	DO	BOD	ORG-N	NH3	NO3+2

ENDATA17

$$$ DATA TYPE 18 (INCREMENTAL DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE	REACH	ID	PHOS	CHL A	COLI	NCM

ENDATA18

$$$ DATA TYPE 19 (NONPOINT SOURCE DATA) $$$

CARD TYPE	REACH	ID	BOD	ORG-N	COLI	NCM	DO
NONPOINT	1	MB	3.82	0.00	0.00	1.68	0.00
NONPOINT	2	MB	5.71	0.00	0.00	2.68	0.00
NONPOINT	3	MB	8.63	0.00	0.00	2.42	0.00
NONPOINT	4	MB	5.53	0.00	0.00	1.52	0.00
NONPOINT	5	MB	7.43	0.00	0.00	1.86	0.00

```
NONPOINT          6   MB       9.10      0.00      0.00      1.95      0.00
NONPOINT          7   MB       8.58      0.00      0.00      1.51      0.00
NONPOINT          8   MB       4.74      0.00      0.00      0.79      0.00
NONPOINT          9   MB       5.64      0.00      0.00      0.03      0.00
NONPOINT         10   MB       0.00      0.00      0.00      0.00      0.00
NONPOINT         11   MB       6.94      0.00      0.00      0.39      0.00
NONPOINT         12   MB       7.88      0.00      0.00      0.39      0.00
NONPOINT         13   MB       6.43      0.00      0.00      0.37      0.00
NONPOINT         14   MB       9.58      0.00      0.00      0.55      0.00
NONPOINT         15   MB      13.30      0.00      0.00      0.76      0.00
ENDATA19

$$$ DATA TYPE 20 (HEADWATER FOR FLOW, TEMPERATURE, SALINITY AND CONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                  UNIT          FLOW      TEMP      SALIN     CM-I      CM-II

HDWTR-1            1     Marsh @ Welcome Rd.    0         0.06137    25.400     0.000    20.400     5.400
ENDATA20

$$$ DATA TYPE 21 (HEADWATER DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE      ELEMENT   NAME                          DO        BOD      ORG-N       NH3     NO3+2

HDWTR-2            1     Marsh @ Welcome Rd.         8.20      2.35      0.00      0.00      0.00
ENDATA21

$$$ DATA TYPE 22 (HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                          PHOS     CHL A      COLI       NCM

HDWTR-3            1     Marsh @ Welcome Rd.          0.00     11.90      0.00      5.81
ENDATA22

$$$ DATA TYPE 23 (JUNCTION DATA) $$$

CARD TYPE    JUNCTION   UPSTRM     RIVER     NAME
              ELEMENT  ELEMENT     KILOM

ENDATA23

$$$ DATA TYPE 24 (WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE  ELEMENT    RKILO  NAME                                FLOW      TEMP       SAL      CM-I      CM-II

ENDATA24

$$$ DATA TYPE 25 (WASTELOAD DATA FOR DO, BOD, AND NITROGEN) $$$

                                                                        % BOD                              %
CARD TYPE      ELEMENT   NAME                          DO        BOD     RMVL      ORG-N       NH3    NITRIF     NO3+2

ENDATA25

$$$ DATA TYPE 26 (WASTELOAD DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$
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CARD TYPE     ELEMENT   NAME                          PHOS     CHL A     COLI      NCM

ENDATA26

$$$ DATA TYPE 27 (LOWER BOUNDARY CONDITIONS) $$$

CARD TYPE     CONSTITUENT                        CONCENTRATION

LOWER BC      TEMPERATURE                            =     30.700 deg C
LOWER BC      SALINITY                               =      0.000 ppt
LOWER BC      CONSERVATIVE MATERIAL  I               =      6.400 MG/L
LOWER BC      CONSERVATIVE MATERIAL II               =      2.800 MG/L
LOWER BC      DISSOLVED OXYGEN                       =      7.470 mg/L
LOWER BC      BIOCHEMICAL OXYGEN DEMAND              =      3.420 mg/L
LOWER BC      ORGANIC NITROGEN                       =      0.220 mg/L
LOWER BC      AMMONIA NITROGEN                       =      0.000 mg/L
LOWER BC      NITRATE+NITRITE NITROGEN               =      0.030 mg/L
LOWER BC      PHOSPHORUS                             =      0.120 mg/L
LOWER BC      CHLOROPHYLL A                          =      3.930 µg/L
LOWER BC      COLIFORM                               =      0.000 #/100 mL
LOWER BC      NONCONSERVATIVE MATERIAL               =      0.360 MG/L
ENDATA27

$$$ DATA TYPE 28 (RESERVED FOR FUTURE DATA INPUT) $$$

 CARD TYPE

ENDATA28

$$$ DATA TYPE 29 (SENSITIVITY ANALYSIS DATA) $$$

CARD TYPE      PARAMETER     COL 1     COL 2     COL 3     COL 4     COL 5     COL 6     COL 7     COL 8

ENDATA29

$$$ DATA TYPE 30 (PLOT CONTROL CARDS) $$$


NUMBER OF PLOTS =  5
NUMBER OF REACHES IN PLOT 1 =    4
PLOT RCH  1  2  3  4
NUMBER OF REACHES IN PLOT 2 =    4
PLOT RCH  5  6  7  8
NUMBER OF REACHES IN PLOT 3 =    4
PLOT RCH  9 10 11 12
NUMBER OF REACHES IN PLOT 4 =    3
PLOT RCH 13 14 15
NUMBER OF REACHES IN PLOT 5 =   15
PLOT RCH  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
ENDATA30

$$$.DATA TYPE 31 (OVERLAY PLOT DATA) $$$
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OVERLAY 1  marshsumpresentation.ovl        Marsh Bayou: Welcome Rd.-RKM 6.0
OVERLAY 2  marshsumpresentation.ovl        Marsh Bayou: RKM 6.0-RKM 2.8
OVERLAY 3  marshsumpresentation.ovl        Marsh Bayou: RKM 2.8-UT LDB (RKM 1.6)
OVERLAY 4  marshsumpresentation.ovl        Marsh Bayou: UT LDB(RKM 1.6)-CAL. R.
OVERLAY 5  marshsumpresentation.ovl        Marsh Bayou: Welcome Rd.-Calcasieu R.
ENDATA31

     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   1 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11
     .....GRAPHICS DATA FOR PLOT 2 WRITTEN TO UNIT 12
     .....GRAPHICS DATA FOR PLOT 3 WRITTEN TO UNIT 13
     .....GRAPHICS DATA FOR PLOT 4 WRITTEN TO UNIT 14
     .....GRAPHICS DATA FOR PLOT 5 WRITTEN TO UNIT 15
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CAPSULE SUMMARY
Marsh @ Welcome Rd.

DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD
HDWTR	0.06137	25.40	0.00	8.20	2.35	0.00	0.00	11.90					
9.43	0.06137	25.40	0.00	8.00	2.38	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
9.34	0.06137	25.40	0.00	7.82	2.41	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
9.24	0.06137	25.40	0.00	7.66	2.43	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
9.15	0.06137	25.40	0.00	7.51	2.46	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
9.06	0.06137	25.40	0.00	7.37	2.49	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
8.97	0.06137	25.40	0.00	7.25	2.51	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
8.88	0.06137	25.40	0.00	7.13	2.54	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
8.78	0.06137	25.40	0.00	7.03	2.57	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
8.69	0.06137	25.40	0.00	6.94	2.59	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
8.60	0.06137	25.40	0.00	6.86	2.61	0.00	0.00	11.90	0.97	0.13	0.07	0.00	0.76
8.50	0.06137	25.40	0.00	6.77	2.65	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
8.40	0.06137	25.40	0.00	6.68	2.69	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
8.30	0.06137	25.40	0.00	6.61	2.72	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
8.20	0.06137	25.40	0.00	6.55	2.75	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
8.10	0.06137	25.40	0.00	6.50	2.79	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
8.00	0.06137	25.40	0.00	6.45	2.82	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
7.90	0.06137	25.40	0.00	6.41	2.85	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
7.80	0.06137	25.40	0.00	6.38	2.88	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
7.70	0.06137	25.40	0.00	6.35	2.91	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
7.60	0.06137	25.40	0.00	6.33	2.94	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.48
7.51	0.06137	25.40	0.00	6.36	3.00	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46
7.41	0.06137	25.40	0.00	6.39	3.05	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46
7.32	0.06137	25.40	0.00	6.41	3.11	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46
7.22	0.06137	25.40	0.00	6.43	3.16	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46

7.13	0.06137	25.40	0.00	6.45	3.22	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46
7.03	0.06137	25.40	0.00	6.47	3.27	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46
6.94	0.06137	25.40	0.00	6.48	3.32	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46
6.84	0.06137	25.40	0.00	6.49	3.36	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46
6.75	0.06137	25.40	0.00	6.50	3.41	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46
6.65	0.06137	25.40	0.00	6.51	3.45	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.46
6.52	0.06137	25.40	0.00	6.50	3.50	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.58
6.39	0.06137	25.40	0.00	6.49	3.54	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.58
6.26	0.06137	25.40	0.00	6.49	3.58	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.58
6.13	0.06137	25.40	0.00	6.48	3.62	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.58
6.00	0.06137	25.40	0.00	6.48	3.66	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.58
5.90	0.06137	25.40	0.00	6.44	3.68	0.00	0.00	11.90	0.87	0.13	0.07	0.00	0.83
5.80	0.06137	25.40	0.00	6.41	3.71	0.00	0.00	11.90	0.87	0.13	0.07	0.00	0.83
5.70	0.06137	25.40	0.00	6.39	3.73	0.00	0.00	11.90	0.87	0.13	0.07	0.00	0.83
5.60	0.06137	25.40	0.00	6.37	3.76	0.00	0.00	11.90	0.87	0.13	0.07	0.00	0.83
5.50	0.06137	25.40	0.00	6.35	3.78	0.00	0.00	11.90	0.87	0.13	0.07	0.00	0.83
5.40	0.06137	25.40	0.00	6.34	3.80	0.00	0.00	11.90	0.87	0.13	0.07	0.00	0.83
5.30	0.06137	25.40	0.00	6.32	3.82	0.00	0.00	11.90	0.87	0.13	0.07	0.00	0.83
5.20	0.06137	25.40	0.00	6.32	3.84	0.00	0.00	11.90	0.87	0.13	0.07	0.00	0.83
5.10	0.06137	25.40	0.00	6.26	3.84	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
5.00	0.06137	25.40	0.00	6.21	3.84	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
4.90	0.06137	25.40	0.00	6.17	3.84	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
4.80	0.06137	25.40	0.00	6.14	3.84	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
4.70	0.06137	25.40	0.00	6.12	3.84	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
4.60	0.06137	25.40	0.00	6.10	3.84	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
4.50	0.06137	25.40	0.00	6.08	3.83	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
4.40	0.06137	25.40	0.00	6.07	3.83	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
4.30	0.06137	25.40	0.00	6.06	3.83	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
4.20	0.06137	25.40	0.00	6.06	3.83	0.00	0.00	11.90	0.91	0.13	0.07	0.00	1.10
4.10	0.06137	25.40	0.00	6.02	3.81	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.12
4.00	0.06137	25.40	0.00	6.00	3.79	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.12
3.90	0.06137	25.40	0.00	5.98	3.77	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.12
3.80	0.06137	25.40	0.00	5.97	3.75	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.12
3.70	0.06137	25.40	0.00	5.96	3.73	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.12
3.60	0.06137	25.40	0.00	5.95	3.71	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.12
3.50	0.06137	25.40	0.00	5.95	3.69	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.12
3.40	0.06137	25.40	0.00	5.95	3.67	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.12
3.30	0.06137	25.40	0.00	5.95	3.66	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.12
3.20	0.06137	25.40	0.00	5.95	3.64	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.14
3.10	0.06137	25.40	0.00	5.95	3.63	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.14
3.00	0.06137	25.40	0.00	5.95	3.61	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.14
2.90	0.06137	25.40	0.00	5.96	3.60	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.14
2.80	0.06137	25.40	0.00	5.95	3.57	0.00	0.00	11.90	1.00	0.17	0.08	0.00	1.14
2.75	0.06137	25.40	0.00	5.84	3.43	0.00	0.00	11.90	0.54	0.17	0.08	0.00	1.07
2.70	0.06137	25.40	0.00	5.78	3.33	0.00	0.00	11.90	0.54	0.17	0.08	0.00	1.07
2.65	0.06137	25.40	0.00	5.76	3.23	0.00	0.00	11.90	0.54	0.17	0.08	0.00	1.07
2.60	0.06137	25.40	0.00	5.80	3.08	0.00	0.00	11.90	0.54	0.17	0.08	0.00	1.07
2.55	0.06137	25.40	0.00	5.96	2.82	0.00	0.00	11.90	0.54	0.17	0.08	0.00	1.07
2.55	0.06137	30.70	0.00	6.20	2.53	0.00	0.00	11.90	608.73	0.00	0.00	0.00	0.00
2.44	0.06137	30.70	0.00	5.94	2.44	0.00	0.00	11.90	0.80	0.25	0.10	0.00	2.18
2.33	0.06137	30.70	0.00	5.58	2.30	0.00	0.00	11.90	0.80	0.25	0.10	0.00	2.18
2.22	0.06137	30.70	0.00	5.34	2.19	0.00	0.00	11.90	0.80	0.25	0.10	0.00	2.18
2.11	0.06137	30.70	0.00	5.18	2.09	0.00	0.00	11.90	0.80	0.25	0.10	0.00	2.18
2.00	0.06137	30.70	0.00	5.12	2.02	0.00	0.00	11.90	0.80	0.25	0.10	0.00	2.18

1.90	0.06137	30.70	0.00	5.16	1.98	0.00	0.00	11.90	0.73	0.25	0.10	0.00	1.69
1.80	0.06137	30.70	0.00	5.25	1.94	0.00	0.00	11.90	0.73	0.25	0.10	0.00	1.69
1.70	0.06137	30.70	0.00	5.40	1.90	0.00	0.00	11.90	0.73	0.25	0.10	0.00	1.69
1.60	0.06137	30.70	0.00	5.65	1.87	0.00	0.00	11.90	0.73	0.25	0.10	0.00	1.69
1.50	0.06137	30.70	0.00	6.01	1.83	0.00	0.00	11.90	2.16	0.25	0.10	0.00	1.59
1.40	0.06137	30.70	0.00	6.23	1.80	0.00	0.00	11.90	2.16	0.25	0.10	0.00	1.59
1.30	0.06137	30.70	0.00	6.37	1.78	0.00	0.00	11.90	2.16	0.25	0.10	0.00	1.59
1.20	0.06137	30.70	0.00	6.45	1.75	0.00	0.00	11.90	2.14	0.25	0.10	0.00	1.77
1.10	0.06137	30.70	0.00	6.50	1.73	0.00	0.00	11.90	2.14	0.25	0.10	0.00	1.77
1.00	0.06137	30.70	0.00	6.54	1.72	0.00	0.00	11.90	2.14	0.25	0.10	0.00	1.77
0.90	0.06137	30.70	0.00	6.56	1.72	0.00	0.00	11.90	2.14	0.25	0.10	0.00	1.77
0.80	0.06137	30.70	0.00	6.57	1.73	0.00	0.00	11.90	2.14	0.25	0.10	0.00	1.77
0.70	0.06137	30.70	0.00	6.56	1.75	0.00	0.00	10.90	2.13	0.25	0.10	0.00	1.98
0.60	0.06137	30.70	0.00	6.56	1.80	0.00	0.00	9.91	2.13	0.25	0.10	0.00	1.98
0.50	0.06137	30.70	0.00	6.57	1.88	0.00	0.00	8.91	2.13	0.25	0.10	0.00	1.98
0.40	0.06137	30.70	0.00	6.59	2.00	0.00	0.00	7.91	2.13	0.25	0.10	0.00	1.98
0.30	0.06137	30.70	0.00	6.64	2.16	0.00	0.00	6.92	2.13	0.25	0.10	0.00	1.98
0.20	0.06137	30.70	0.00	6.72	2.40	0.00	0.00	5.92	2.13	0.25	0.10	0.00	1.98
0.10	0.06137	30.70	0.00	6.89	2.71	0.00	0.00	4.93	2.13	0.25	0.10	0.00	1.98
0.00	0.06137	30.70	0.00	7.19	3.14	0.00	0.00	3.93	2.13	0.25	0.10	0.00	1.98

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH		DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
			HDWTR	0.061	25.4	0.0	8.2	2.3	0.0	0.0	11.9											
1	MB	1	9.43	0.061	25.4	0.0	8.0	2.4	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
2	MB	1	9.34	0.061	25.4	0.0	7.8	2.4	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
3	MB	1	9.24	0.061	25.4	0.0	7.7	2.4	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
4	MB	1	9.15	0.061	25.4	0.0	7.5	2.5	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
5	MB	1	9.06	0.061	25.4	0.0	7.4	2.5	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
6	MB	1	8.97	0.061	25.4	0.0	7.2	2.5	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
7	MB	1	8.88	0.061	25.4	0.0	7.1	2.5	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
8	MB	1	8.78	0.061	25.4	0.0	7.0	2.6	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
9	MB	1	8.69	0.061	25.4	0.0	6.9	2.6	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
10	MB	1	8.60	0.061	25.4	0.0	6.9	2.6	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	0.76
11	MB	2	8.50	0.061	25.4	0.0	6.8	2.7	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
12	MB	2	8.40	0.061	25.4	0.0	6.7	2.7	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
13	MB	2	8.30	0.061	25.4	0.0	6.6	2.7	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
14	MB	2	8.20	0.061	25.4	0.0	6.6	2.8	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
15	MB	2	8.10	0.061	25.4	0.0	6.5	2.8	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
16	MB	2	8.00	0.061	25.4	0.0	6.5	2.8	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
17	MB	2	7.90	0.061	25.4	0.0	6.4	2.8	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
18	MB	2	7.80	0.061	25.4	0.0	6.4	2.9	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
19	MB	2	7.70	0.061	25.4	0.0	6.4	2.9	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
20	MB	2	7.60	0.061	25.4	0.0	6.3	2.9	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.48
21	MB	3	7.51	0.061	25.4	0.0	6.4	3.0	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46
22	MB	3	7.41	0.061	25.4	0.0	6.4	3.1	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46
23	MB	3	7.32	0.061	25.4	0.0	6.4	3.1	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46
24	MB	3	7.22	0.061	25.4	0.0	6.4	3.2	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46
25	MB	3	7.13	0.061	25.4	0.0	6.4	3.2	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46
26	MB	3	7.03	0.061	25.4	0.0	6.5	3.3	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46
27	MB	3	6.94	0.061	25.4	0.0	6.5	3.3	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46

28	MB	3	6.84	0.061	25.4	0.0	6.5	3.4	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46
29	MB	3	6.75	0.061	25.4	0.0	6.5	3.4	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46
30	MB	3	6.65	0.061	25.4	0.0	6.5	3.5	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.46
31	MB	4	6.52	0.061	25.4	0.0	6.5	3.5	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.58
32	MB	4	6.39	0.061	25.4	0.0	6.5	3.5	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.58
33	MB	4	6.26	0.061	25.4	0.0	6.5	3.6	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.58
34	MB	4	6.13	0.061	25.4	0.0	6.5	3.6	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.58
35	MB	4	6.00	0.061	25.4	0.0	6.5	3.7	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.58
36	MB	5	5.90	0.061	25.4	0.0	6.4	3.7	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	0.83
37	MB	5	5.80	0.061	25.4	0.0	6.4	3.7	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	0.83
38	MB	5	5.70	0.061	25.4	0.0	6.4	3.7	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	0.83
39	MB	5	5.60	0.061	25.4	0.0	6.4	3.8	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	0.83
40	MB	5	5.50	0.061	25.4	0.0	6.4	3.8	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	0.83
41	MB	5	5.40	0.061	25.4	0.0	6.3	3.8	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	0.83
42	MB	5	5.30	0.061	25.4	0.0	6.3	3.8	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	0.83
43	MB	5	5.20	0.061	25.4	0.0	6.3	3.8	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	0.83
44	MB	6	5.10	0.061	25.4	0.0	6.3	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
45	MB	6	5.00	0.061	25.4	0.0	6.2	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
46	MB	6	4.90	0.061	25.4	0.0	6.2	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
47	MB	6	4.80	0.061	25.4	0.0	6.1	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
48	MB	6	4.70	0.061	25.4	0.0	6.1	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
49	MB	6	4.60	0.061	25.4	0.0	6.1	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
50	MB	6	4.50	0.061	25.4	0.0	6.1	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
51	MB	6	4.40	0.061	25.4	0.0	6.1	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
52	MB	6	4.30	0.061	25.4	0.0	6.1	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
53	MB	6	4.20	0.061	25.4	0.0	6.1	3.8	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	1.10
54	MB	7	4.10	0.061	25.4	0.0	6.0	3.8	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.12
55	MB	7	4.00	0.061	25.4	0.0	6.0	3.8	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.12
56	MB	7	3.90	0.061	25.4	0.0	6.0	3.8	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.12
57	MB	7	3.80	0.061	25.4	0.0	6.0	3.7	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.12
58	MB	7	3.70	0.061	25.4	0.0	6.0	3.7	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.12
59	MB	7	3.60	0.061	25.4	0.0	6.0	3.7	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.12
60	MB	7	3.50	0.061	25.4	0.0	6.0	3.7	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.12
61	MB	7	3.40	0.061	25.4	0.0	6.0	3.7	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.12
62	MB	7	3.30	0.061	25.4	0.0	6.0	3.7	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.12
63	MB	8	3.20	0.061	25.4	0.0	6.0	3.6	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.14
64	MB	8	3.10	0.061	25.4	0.0	6.0	3.6	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.14
65	MB	8	3.00	0.061	25.4	0.0	6.0	3.6	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.14
66	MB	8	2.90	0.061	25.4	0.0	6.0	3.6	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.14
67	MB	8	2.80	0.061	25.4	0.0	5.9	3.6	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	1.14
68	MB	9	2.75	0.061	25.4	0.0	5.8	3.4	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	1.07
69	MB	9	2.70	0.061	25.4	0.0	5.8	3.3	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	1.07
70	MB	9	2.65	0.061	25.4	0.0	5.8	3.2	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	1.07
71	MB	9	2.60	0.061	25.4	0.0	5.8	3.1	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	1.07
72	MB	9	2.55	0.061	25.4	0.0	6.0	2.8	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	1.07
73	MB	10	2.55	0.061	30.7	0.0	6.2	2.5	0.0	0.0	11.9	0.5	0.63	28.5	0.003	0.003	7.5608.726		0.00	0.00	0.00	0.00

[]

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH		DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
74	MB	11	2.44	0.061	30.7	0.0	5.9	2.4	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	2.18
75	MB	11	2.33	0.061	30.7	0.0	5.6	2.3	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	2.18

76	MB	11	2.22	0.061	30.7	0.0	5.3	2.2	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	2.18
77	MB	11	2.11	0.061	30.7	0.0	5.2	2.1	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	2.18
78	MB	11	2.00	0.061	30.7	0.0	5.1	2.0	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	2.18
79	MB	12	1.90	0.061	30.7	0.0	5.2	2.0	0.0	0.0	11.9	0.9	1.17	28.1	0.002	0.002	7.5	0.730	0.25	0.10	0.00	1.69
80	MB	12	1.80	0.061	30.7	0.0	5.2	1.9	0.0	0.0	11.9	0.9	1.17	28.1	0.002	0.002	7.5	0.730	0.25	0.10	0.00	1.69
81	MB	12	1.70	0.061	30.7	0.0	5.4	1.9	0.0	0.0	11.9	0.9	1.17	28.1	0.002	0.002	7.5	0.730	0.25	0.10	0.00	1.69
82	MB	12	1.60	0.061	30.7	0.0	5.7	1.9	0.0	0.0	11.9	0.9	1.17	28.1	0.002	0.002	7.5	0.730	0.25	0.10	0.00	1.69
83	MB	13	1.50	0.061	30.7	0.0	6.0	1.8	0.0	0.0	11.9	0.9	1.30	28.6	0.002	0.002	7.5	2.159	0.25	0.10	0.00	1.59
84	MB	13	1.40	0.061	30.7	0.0	6.2	1.8	0.0	0.0	11.9	0.9	1.30	28.6	0.002	0.002	7.5	2.159	0.25	0.10	0.00	1.59
85	MB	13	1.30	0.061	30.7	0.0	6.4	1.8	0.0	0.0	11.9	0.9	1.30	28.6	0.002	0.002	7.5	2.159	0.25	0.10	0.00	1.59
86	MB	14	1.20	0.061	30.7	0.0	6.5	1.7	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	1.77
87	MB	14	1.10	0.061	30.7	0.0	6.5	1.7	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	1.77
88	MB	14	1.00	0.061	30.7	0.0	6.5	1.7	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	1.77
89	MB	14	0.90	0.061	30.7	0.0	6.6	1.7	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	1.77
90	MB	14	0.80	0.061	30.7	0.0	6.6	1.7	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	1.77
91	MB	15	0.70	0.061	30.7	0.0	6.6	1.8	0.0	0.0	10.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	1.98
92	MB	15	0.60	0.061	30.7	0.0	6.6	1.8	0.0	0.0	9.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	1.98
93	MB	15	0.50	0.061	30.7	0.0	6.6	1.9	0.0	0.0	8.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	1.98
94	MB	15	0.40	0.061	30.7	0.0	6.6	2.0	0.0	0.0	7.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	1.98
95	MB	15	0.30	0.061	30.7	0.0	6.6	2.2	0.0	0.0	6.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	1.98
96	MB	15	0.20	0.061	30.7	0.0	6.7	2.4	0.0	0.0	5.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	1.98
97	MB	15	0.10	0.061	30.7	0.0	6.9	2.7	0.0	0.0	4.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	1.98
98	MB	15	0.00	0.061	30.7	0.0	7.2	3.1	0.0	0.0	3.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	1.98

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 1   E. WELCOME RD.-RKM 8.6   02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
1	HDWTR	0.06137	25.40	0.00	20.40	5.40	8.20	2.35	2.35	0.00	0.00	0.00	0.00	11.90	0.00	5.81

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
1	9.52	9.43	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
2	9.43	9.34	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
3	9.34	9.24	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
4	9.24	9.15	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
5	9.15	9.06	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
6	9.06	8.97	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
7	8.97	8.88	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
8	8.88	8.78	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
9	8.78	8.69	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
10	8.69	8.60	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011

TOT		0.93			4920.58	5179.04
AVG	0.01147		0.95	5.63			5.35
CUM		0.93				

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	9.428	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
2	9.336	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
3	9.244	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
4	9.152	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
5	9.060	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
6	8.968	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
7	8.876	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
8	8.784	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
9	8.692	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
10	8.600	8.20	0.97	0.13	0.07	0.00	0.76	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
20 DEG C RATE				0.10		0.00		0.54	0.00		0.00	0.00	0.00	0.00			0.00	5.71		
AVG 20 DEG C RATE			0.87		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
1	9.428	25.40	0.00	20.40	5.40	8.00	2.38	2.38	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.71
2	9.336	25.40	0.00	20.40	5.40	7.82	2.41	2.41	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.61
3	9.244	25.40	0.00	20.40	5.40	7.66	2.43	2.43	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.51
4	9.152	25.40	0.00	20.40	5.40	7.51	2.46	2.46	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.42
5	9.060	25.40	0.00	20.40	5.40	7.37	2.49	2.49	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.33
6	8.968	25.40	0.00	20.40	5.40	7.25	2.51	2.51	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.24
7	8.876	25.40	0.00	20.40	5.40	7.13	2.54	2.54	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.15
8	8.784	25.40	0.00	20.40	5.40	7.03	2.57	2.57	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.06
9	8.692	25.40	0.00	20.40	5.40	6.94	2.59	2.59	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.98
10	8.600	25.40	0.00	20.40	5.40	6.86	2.61	2.61	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.90

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L
** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 2   RKM 8.6-UT LDB   02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
11	UPR RCH	0.06137	25.40	0.00	20.40	5.40	6.86	2.61	2.61	0.00	0.00	0.00	0.00	11.90	0.00	4.90

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
11	8.60	8.50	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
12	8.50	8.40	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
13	8.40	8.30	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
14	8.30	8.20	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
15	8.20	8.10	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
16	8.10	8.00	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
17	8.00	7.90	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
18	7.90	7.80	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
19	7.80	7.70	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
20	7.70	7.60	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
TOT						1.38			7292.96	6629.39					
AVG					0.00841		1.10	6.63			7.29				
CUM						2.30									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
11	8.500	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
12	8.400	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
13	8.300	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
14	8.200	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
15	8.100	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
16	8.000	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
17	7.900	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
18	7.800	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
19	7.700	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
20	7.600	8.20	0.79	0.13	0.07	0.00	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
20 DEG C RATE				0.10		0.00		0.34	0.00		0.00	0.00	0.00	0.00			0.00	5.61		
AVG 20 DEG C RATE			0.71		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
11	8.500	25.40	0.00	20.40	5.40	6.77	2.65	2.65	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.78
12	8.400	25.40	0.00	20.40	5.40	6.68	2.69	2.69	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.67
13	8.300	25.40	0.00	20.40	5.40	6.61	2.72	2.72	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.57
14	8.200	25.40	0.00	20.40	5.40	6.55	2.75	2.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.46
15	8.100	25.40	0.00	20.40	5.40	6.50	2.79	2.79	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.36
16	8.000	25.40	0.00	20.40	5.40	6.45	2.82	2.82	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.27
17	7.900	25.40	0.00	20.40	5.40	6.41	2.85	2.85	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.17
18	7.800	25.40	0.00	20.40	5.40	6.38	2.88	2.88	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.08
19	7.700	25.40	0.00	20.40	5.40	6.35	2.91	2.91	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.00
20	7.600	25.40	0.00	20.40	5.40	6.33	2.94	2.94	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.91

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 3   UT LDB-SITE 4   02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
21	UPR RCH	0.06137	25.40	0.00	20.40	5.40	6.33	2.94	2.94	0.00	0.00	0.00	0.00	11.90	0.00	3.91

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
21	7.60	7.51	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
22	7.51	7.41	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
23	7.41	7.32	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
24	7.32	7.22	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
25	7.22	7.13	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
26	7.13	7.03	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
27	7.03	6.94	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
28	6.94	6.84	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
29	6.84	6.75	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
30	6.75	6.65	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
TOT						1.75			9253.07	8674.23					
AVG					0.00630		1.07	9.13			9.74				
CUM						4.05									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
21	7.505	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
22	7.410	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
23	7.315	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
24	7.220	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
25	7.125	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
26	7.030	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
27	6.935	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
28	6.840	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
29	6.745	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
30	6.650	8.20	0.78	0.13	0.07	0.00	0.46	0.46	0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		0.33	0.00		0.00	0.00	0.00	0.00			0.00	5.51		
AVG 20 DEG C RATE			0.71		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
21	7.505	25.40	0.00	20.40	5.40	6.36	3.00	3.00	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.86
22	7.410	25.40	0.00	20.40	5.40	6.39	3.05	3.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.80
23	7.315	25.40	0.00	20.40	5.40	6.41	3.11	3.11	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.75
24	7.220	25.40	0.00	20.40	5.40	6.43	3.16	3.16	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.70
25	7.125	25.40	0.00	20.40	5.40	6.45	3.22	3.22	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.65
26	7.030	25.40	0.00	20.40	5.40	6.47	3.27	3.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.60
27	6.935	25.40	0.00	20.40	5.40	6.48	3.32	3.32	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.56
28	6.840	25.40	0.00	20.40	5.40	6.49	3.36	3.36	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.51
29	6.745	25.40	0.00	20.40	5.40	6.50	3.41	3.41	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.47
30	6.650	25.40	0.00	20.40	5.40	6.51	3.45	3.45	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.42

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 4 RKM 6.65-E. OF TOPSY RD. 02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
31	UPR RCH	0.06137	25.40	0.00	20.40	5.40	6.51	3.45	3.45	0.00	0.00	0.00	0.00	11.90	0.00	3.42

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
31	6.65	6.52	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
32	6.52	6.39	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
33	6.39	6.26	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
34	6.26	6.13	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
35	6.13	6.00	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
TOT						1.19			6331.05	5935.00					
AVG					0.00630		1.07	9.13			9.74				
CUM						5.24									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
31	6.520	8.20	0.78	0.13	0.07	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
32	6.390	8.20	0.78	0.13	0.07	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
33	6.260	8.20	0.78	0.13	0.07	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
34	6.130	8.20	0.78	0.13	0.07	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
35	6.000	8.20	0.78	0.13	0.07	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		0.41	0.00		0.00	0.00	0.00	0.00			0.00	5.42		
AVG 20 DEG C RATE			0.71		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
31	6.520	25.40	0.00	20.40	5.40	6.50	3.50	3.50	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.36
32	6.390	25.40	0.00	20.40	5.40	6.49	3.54	3.54	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.30
33	6.260	25.40	0.00	20.40	5.40	6.49	3.58	3.58	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.24
34	6.130	25.40	0.00	20.40	5.40	6.48	3.62	3.62	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.19
35	6.000	25.40	0.00	20.40	5.40	6.48	3.66	3.66	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.13

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 5 EAST OF TOPSY RD.-RKM 5.2 02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
36	UPR RCH	0.06137	25.40	0.00	20.40	5.40	6.48	3.66	3.66	0.00	0.00	0.00	0.00	11.90	0.00	3.13

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
36	6.00	5.90	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
37	5.90	5.80	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
38	5.80	5.70	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
39	5.70	5.60	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
40	5.60	5.50	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
41	5.50	5.40	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
42	5.40	5.30	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
43	5.30	5.20	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
TOT						1.65			8734.11	9181.79					
AVG					0.00562		0.95	11.48			10.92				
CUM						6.89									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
36	5.900	8.20	0.87	0.13	0.07	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
37	5.800	8.20	0.87	0.13	0.07	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
38	5.700	8.20	0.87	0.13	0.07	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
39	5.600	8.20	0.87	0.13	0.07	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
40	5.500	8.20	0.87	0.13	0.07	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
41	5.400	8.20	0.87	0.13	0.07	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
42	5.300	8.20	0.87	0.13	0.07	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
43	5.200	8.20	0.87	0.13	0.07	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		0.59	0.00		0.00	0.00	0.00	0.00			0.00	5.33		
AVG 20 DEG C RATE			0.78		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES ***

ELEM	ENDING	TEMP	SALN	CM-I	CM-II	DO	BOD	EBOD	ORGN	NH3	NO3+2	TOTN	PHOS	CHL A	MACRO	COLI	NCM

NO.	DIST	DEG C	PPT	*	*	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	**	#/100mL	*
36	5.900	25.40	0.00	20.40	5.40	6.44	3.68	3.68	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.08
37	5.800	25.40	0.00	20.40	5.40	6.41	3.71	3.71	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.03
38	5.700	25.40	0.00	20.40	5.40	6.39	3.73	3.73	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.98
39	5.600	25.40	0.00	20.40	5.40	6.37	3.76	3.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.94
40	5.500	25.40	0.00	20.40	5.40	6.35	3.78	3.78	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.89
41	5.400	25.40	0.00	20.40	5.40	6.34	3.80	3.80	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.85
42	5.300	25.40	0.00	20.40	5.40	6.32	3.82	3.82	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.81
43	5.200	25.40	0.00	20.40	5.40	6.32	3.84	3.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.76

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 6 RKM 5.2-UT LDB 02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
44	UPR RCH	0.06137	25.40	0.00	20.40	5.40	6.32	3.84	3.84	0.00	0.00	0.00	0.00	11.90	0.00	2.76

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
44	5.20	5.10	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
45	5.10	5.00	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
46	5.00	4.90	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
47	4.90	4.80	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
48	4.80	4.70	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
49	4.70	4.60	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
50	4.60	4.50	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
51	4.50	4.40	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
52	4.40	4.30	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
53	4.30	4.20	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
TOT						2.29			12146.26	13477.24					
AVG					0.00505		0.90	13.48			12.15				
CUM						9.18									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT

		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
44	5.100	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
45	5.000	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
46	4.900	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
47	4.800	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
48	4.700	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
49	4.600	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
50	4.500	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
51	4.400	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
52	4.300	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
53	4.200	8.20	0.91	0.13	0.07	0.00	1.10	1.10	1.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		0.78	0.00		0.00	0.00	0.00	0.00			0.00	5.24		
AVG 20 DEG C RATE			0.82		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
44	5.100	25.40	0.00	20.40	5.40	6.26	3.84	3.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.71
45	5.000	25.40	0.00	20.40	5.40	6.21	3.84	3.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.65
46	4.900	25.40	0.00	20.40	5.40	6.17	3.84	3.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.60
47	4.800	25.40	0.00	20.40	5.40	6.14	3.84	3.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.55
48	4.700	25.40	0.00	20.40	5.40	6.12	3.84	3.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.50
49	4.600	25.40	0.00	20.40	5.40	6.10	3.84	3.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.46
50	4.500	25.40	0.00	20.40	5.40	6.08	3.83	3.83	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.41
51	4.400	25.40	0.00	20.40	5.40	6.07	3.83	3.83	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.37
52	4.300	25.40	0.00	20.40	5.40	6.06	3.83	3.83	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.32
53	4.200	25.40	0.00	20.40	5.40	6.06	3.83	3.83	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.28

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 7 UT LDB-SITE 3 02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
54	UPR RCH	0.06137	25.40	0.00	20.40	5.40	6.06	3.83	3.83	0.00	0.00	0.00	0.00	11.90	0.00	2.28

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
54	4.20	4.10	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
55	4.10	4.00	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
56	4.00	3.90	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
57	3.90	3.80	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
58	3.80	3.70	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
59	3.70	3.60	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
60	3.60	3.50	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
61	3.50	3.40	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
62	3.40	3.30	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
TOT						1.95			10348.15	12589.75					
AVG					0.00534		0.82	13.99			11.50				
CUM						11.13									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
54	4.100	8.20	1.00	0.17	0.08	0.00	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
55	4.000	8.20	1.00	0.17	0.08	0.00	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
56	3.900	8.20	1.00	0.17	0.08	0.00	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
57	3.800	8.20	1.00	0.17	0.08	0.00	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
58	3.700	8.20	1.00	0.17	0.08	0.00	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
59	3.600	8.20	1.00	0.17	0.08	0.00	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
60	3.500	8.20	1.00	0.17	0.08	0.00	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
61	3.400	8.20	1.00	0.17	0.08	0.00	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
62	3.300	8.20	1.00	0.17	0.08	0.00	1.12	1.12	1.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
20 DEG C RATE				0.13		0.00		0.80	0.00		0.00	0.00	0.00	0.00			0.00	5.15		
AVG 20 DEG C RATE			0.90		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
54	4.100	25.40	0.00	20.40	5.40	6.02	3.81	3.81	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.22
55	4.000	25.40	0.00	20.40	5.40	6.00	3.79	3.79	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.17
56	3.900	25.40	0.00	20.40	5.40	5.98	3.77	3.77	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.12
57	3.800	25.40	0.00	20.40	5.40	5.97	3.75	3.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.07
58	3.700	25.40	0.00	20.40	5.40	5.96	3.73	3.73	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.02
59	3.600	25.40	0.00	20.40	5.40	5.95	3.71	3.71	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.97
60	3.500	25.40	0.00	20.40	5.40	5.95	3.69	3.69	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.93
61	3.400	25.40	0.00	20.40	5.40	5.95	3.67	3.67	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.88

62	3.300	25.40	0.00	20.40	5.40	5.95	3.66	3.66	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.84

* CM-I = CHLORIDES MG/L　　CM-II = SULFATES MG/L　　NCM = NBOD MG/L

** g/cu m

FINAL REPORT　Marsh @ Welcome Rd.　　MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 8　SITE 3-LITTLE MARSH B.　　02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
63	UPR RCH	0.06137	25.40	0.00	20.40	5.40	5.95	3.66	3.66	0.00	0.00	0.00	0.00	11.90	0.00	1.84

*** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
63	3.30	3.20	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
64	3.20	3.10	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
65	3.10	3.00	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
66	3.00	2.90	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
67	2.90	2.80	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
TOT						1.08			5748.97	6994.31					
AVG					0.00534		0.82	13.99			11.50				
CUM						12.22									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
63	3.200	8.20	1.00	0.17	0.08	0.00	1.14	1.14	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
64	3.100	8.20	1.00	0.17	0.08	0.00	1.14	1.14	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
65	3.000	8.20	1.00	0.17	0.08	0.00	1.14	1.14	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
66	2.900	8.20	1.00	0.17	0.08	0.00	1.14	1.14	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
67	2.800	8.20	1.00	0.17	0.08	0.00	1.14	1.14	1.14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
20 DEG C RATE				0.13		0.00		0.81	0.00		0.00	0.00	0.00	0.00			0.00	5.06		
AVG 20 DEG C RATE			0.90		0.07					0.00									0.04	

* g/sq m/d　　** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
63	3.200	25.40	0.00	20.40	5.40	5.95	3.64	3.64	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.80
64	3.100	25.40	0.00	20.40	5.40	5.95	3.63	3.63	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.76
65	3.000	25.40	0.00	20.40	5.40	5.95	3.61	3.61	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.72
66	2.900	25.40	0.00	20.40	5.40	5.96	3.60	3.60	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.68
67	2.800	25.40	0.00	20.40	5.40	5.95	3.57	3.57	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.63

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 9   LITTLE MARSH B.-BEAVER DAM   02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
68	UPR RCH	0.06137	25.40	0.00	20.40	5.40	5.95	3.57	3.57	0.00	0.00	0.00	0.00	11.90	0.00	1.63

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
68	2.80	2.75	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
69	2.75	2.70	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
70	2.70	2.65	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
71	2.65	2.60	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
72	2.60	2.55	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
TOT						1.85			9796.94	6771.88					
AVG					0.00157		1.45	27.09			39.19				
CUM						14.06									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
68	2.750	8.20	0.54	0.17	0.08	0.00	1.07	1.07	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
69	2.700	8.20	0.54	0.17	0.08	0.00	1.07	1.07	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
70	2.650	8.20	0.54	0.17	0.08	0.00	1.07	1.07	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04

71	2.600	8.20	0.54	0.17	0.08	0.00	1.07	1.07	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
72	2.550	8.20	0.54	0.17	0.08	0.00	1.07	1.07	1.07	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
20 DEG C RATE				0.13		0.00		0.76	0.00		0.00	0.00	0.00	0.00			0.00	4.98		
AVG 20 DEG C RATE			0.48		0.07					0.00									0.04	

* g/sq m/d   ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
68	2.750	25.40	0.00	20.40	5.40	5.84	3.43	3.43	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.49
69	2.700	25.40	0.00	20.39	5.40	5.78	3.33	3.33	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.39
70	2.650	25.40	0.00	20.38	5.40	5.76	3.23	3.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.29
71	2.600	25.40	0.00	20.36	5.39	5.80	3.08	3.08	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.18
72	2.550	25.40	0.00	20.29	5.38	5.96	2.82	2.82	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.02

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 10   BEAVER DAM   02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
73	UPR RCH	0.06137	25.40	0.00	20.29	5.38	5.96	2.82	2.82	0.00	0.00	0.00	0.00	11.90	0.00	1.02

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
73	2.55	2.55	0.06137	0.00	0.00342	0.00	0.63	28.52	17.95	28.52	17.95	0.00	0.000	0.500	0.003
TOT						0.00			17.95	28.52					
AVG					0.00342		0.63	28.52			17.95				
CUM						14.07									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT

		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
73	2.549	7.47	608.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 DEG C RATE				0.00		0.00		0.00	0.00		0.00	0.00	0.00	0.00			0.00	4.90		
AVG 20 DEG C RATE			500.00		0.00					0.00									0.00	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
73	2.549	30.70	0.00	20.21	5.37	6.20	2.53	2.53	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.87

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L
** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.
REACH NO. 11   BEAVER DAM-RKM 2.0

MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
74	UPR RCH	0.06137	30.70	0.00	20.21	5.37	6.20	2.53	2.53	0.00	0.00	0.00	0.00	11.90	0.00	0.87

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
74	2.55	2.44	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
75	2.44	2.33	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
76	2.33	2.22	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
77	2.22	2.11	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
78	2.11	2.00	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
TOT						3.00			15892.31	14898.15					
AVG					0.00212		1.07	27.09			28.90				
CUM						17.06									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM ENDING SAT REAER CBOD CBOD ANBOD BKGD FULL CORR ORGN ORGN NH3 NH3 DENIT PO4 ALG MAC COLI NCM NCM

NO.	DIST	D.O. mg/L	RATE 1/da	DECAY 1/da	SETT 1/da	DECAY 1/da	SOD *	SOD *	SOD *	DECAY 1/da	SETT 1/da	DECAY 1/da	SRCE *	RATE 1/da	SRCE *	PROD **	PROD **	DECAY 1/da	DECAY 1/da	SETT 1/da
74	2.440	7.47	0.80	0.25	0.10	0.00	2.18	2.18	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
75	2.330	7.47	0.80	0.25	0.10	0.00	2.18	2.18	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
76	2.220	7.47	0.80	0.25	0.10	0.00	2.18	2.18	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
77	2.110	7.47	0.80	0.25	0.10	0.00	2.18	2.18	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
78	2.000	7.47	0.80	0.25	0.10	0.00	2.18	2.18	2.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
20 DEG C RATE				0.15		0.00		1.11	0.00		0.00	0.00	0.00	0.00			0.00	4.78		
AVG 20 DEG C RATE			0.66		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
74	2.440	30.70	0.00	20.19	5.36	5.94	2.44	2.44	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.82
75	2.330	30.70	0.00	20.13	5.35	5.58	2.30	2.30	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.75
76	2.220	30.70	0.00	20.07	5.34	5.34	2.19	2.19	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.68
77	2.110	30.70	0.00	19.98	5.32	5.18	2.09	2.09	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.62
78	2.000	30.70	0.00	19.87	5.30	5.12	2.02	2.02	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.56

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 12 RKM 2.0-UT LDB 02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
79	UPR RCH	0.06137	30.70	0.00	19.87	5.30	5.12	2.02	2.02	0.00	0.00	0.00	0.00	11.90	0.00	0.56

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
79	2.00	1.90	0.06137	0.00	0.00187	0.62	1.17	28.09	3277.06	2808.75	32.77	0.00	0.000	0.900	0.002
80	1.90	1.80	0.06137	0.00	0.00187	0.62	1.17	28.09	3277.06	2808.75	32.77	0.00	0.000	0.900	0.002
81	1.80	1.70	0.06137	0.00	0.00187	0.62	1.17	28.09	3277.06	2808.75	32.77	0.00	0.000	0.900	0.002
82	1.70	1.60	0.06137	0.00	0.00187	0.62	1.17	28.09	3277.06	2808.75	32.77	0.00	0.000	0.900	0.002

TOT				2.47			13108.24	11235.02					
AVG			0.00187		1.17	28.09			32.77				
CUM				19.54									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
79	1.900	7.47	0.73	0.25	0.10	0.00	1.69	1.69	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
80	1.800	7.47	0.73	0.25	0.10	0.00	1.69	1.69	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
81	1.700	7.47	0.73	0.25	0.10	0.00	1.69	1.69	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
82	1.600	7.47	0.73	0.25	0.10	0.00	1.69	1.69	1.69	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
20 DEG C RATE				0.15		0.00		0.86	0.00		0.00	0.00	0.00	0.00			0.00	4.67		
AVG 20 DEG C RATE			0.60		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
79	1.900	30.70	0.00	19.75	5.28	5.16	1.98	1.98	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.51
80	1.800	30.70	0.00	19.61	5.25	5.25	1.94	1.94	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.47
81	1.700	30.70	0.00	19.45	5.22	5.40	1.90	1.90	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.43
82	1.600	30.70	0.00	19.25	5.19	5.65	1.87	1.87	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.40

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 13 UT LDB-NATURAL DIV. TO CAL.R. 02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
83	UPR RCH	0.06137	30.70	0.00	19.25	5.19	5.65	1.87	1.87	0.00	0.00	0.00	0.00	11.90	0.00	0.40

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s

83	1.60	1.50	0.06137	0.00	0.00166	0.70	1.30	28.59	3707.03	2858.75	37.07	0.00	0.000	0.950	0.002
84	1.50	1.40	0.06137	0.00	0.00166	0.70	1.30	28.59	3707.03	2858.75	37.07	0.00	0.000	0.950	0.002
85	1.40	1.30	0.06137	0.00	0.00166	0.70	1.30	28.59	3707.03	2858.75	37.07	0.00	0.000	0.950	0.002
TOT						2.10			11121.10	8576.26					
AVG					0.00166		1.30	28.59			37.07				
CUM						21.63									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
83	1.500	7.47	2.16	0.25	0.10	0.00	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
84	1.400	7.47	2.16	0.25	0.10	0.00	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
85	1.300	7.47	2.16	0.25	0.10	0.00	1.59	1.59	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
20 DEG C RATE				0.15		0.00		0.81	0.00		0.00	0.00	0.00	0.00			0.00	4.57		
AVG 20 DEG C RATE			1.77		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
83	1.500	30.70	0.00	19.03	5.15	6.01	1.83	1.83	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.37
84	1.400	30.70	0.00	18.79	5.10	6.23	1.80	1.80	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.35
85	1.300	30.70	0.00	18.51	5.05	6.37	1.78	1.78	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.33

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 14 NAT. DIV. TO CAL.R.-RKM RKM 0.8 02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
86	UPR RCH	0.06137	30.70	0.00	18.51	5.05	6.37	1.78	1.78	0.00	0.00	0.00	0.00	11.90	0.00	0.33

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
86	1.30	1.20	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002
87	1.20	1.10	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002
88	1.10	1.00	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002
89	1.00	0.90	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002
90	0.90	0.80	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002
TOT						3.58			19004.79	14543.77					
AVG					0.00161		1.31	29.09			38.01				
CUM						25.22									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
86	1.200	7.47	2.14	0.25	0.10	0.00	1.77	1.77	1.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
87	1.100	7.47	2.14	0.25	0.10	0.00	1.77	1.77	1.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
88	1.000	7.47	2.14	0.25	0.10	0.00	1.77	1.77	1.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
89	0.900	7.47	2.14	0.25	0.10	0.00	1.77	1.77	1.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
90	0.800	7.47	2.14	0.25	0.10	0.00	1.77	1.77	1.77	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
20 DEG C RATE				0.15		0.00		0.90	0.00		0.00	0.00	0.00	0.00			0.00	4.46		
AVG 20 DEG C RATE			1.76		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
86	1.200	30.70	0.00	18.19	4.99	6.45	1.75	1.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.31
87	1.100	30.70	0.00	17.83	4.92	6.50	1.73	1.73	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.30
88	1.000	30.70	0.00	17.42	4.85	6.54	1.72	1.72	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.29
89	0.900	30.70	0.00	16.94	4.76	6.56	1.72	1.72	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.28
90	0.800	30.70	0.00	16.38	4.65	6.57	1.73	1.73	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.27

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L
** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
REACH NO. 15   UPPER OUTLET-LOWER OUTLET   02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
91	UPR RCH	0.06137	30.70	0.00	16.38	4.65	6.57	1.73	1.73	0.00	0.00	0.00	0.00	11.90	0.00	0.27

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
91	0.80	0.70	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
92	0.70	0.60	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
93	0.60	0.50	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
94	0.50	0.40	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
95	0.40	0.30	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
96	0.30	0.20	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
97	0.20	0.10	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
98	0.10	0.00	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
TOT						5.88			31167.05	23670.03					
AVG					0.00158		1.32	29.59			38.96				
CUM						31.10									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
91	0.700	7.47	2.13	0.25	0.10	0.00	1.98	1.98	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
92	0.600	7.47	2.13	0.25	0.10	0.00	1.98	1.98	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
93	0.500	7.47	2.13	0.25	0.10	0.00	1.98	1.98	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
94	0.400	7.47	2.13	0.25	0.10	0.00	1.98	1.98	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
95	0.300	7.47	2.13	0.25	0.10	0.00	1.98	1.98	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
96	0.200	7.47	2.13	0.25	0.10	0.00	1.98	1.98	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
97	0.100	7.47	2.13	0.25	0.10	0.00	1.98	1.98	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
98	0.000	7.47	2.13	0.25	0.10	0.00	1.98	1.98	1.98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
20 DEG C RATE				0.15		0.00		1.01	0.00		0.00	0.00	0.00	0.00			0.00	4.36		
AVG 20 DEG C RATE			1.75		0.08					0.00									0.04	

* g/sq m/d   ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
91	0.700	30.70	0.00	15.74	4.53	6.56	1.75	1.75	0.00	0.00	0.00	0.00	0.01	10.90	0.00	0.00	0.26

92	0.600	30.70	0.00	15.00	4.40	6.56	1.80	1.80	0.00	0.00	0.01	0.01	0.03	9.91	0.00	0.00	0.26
93	0.500	30.70	0.00	14.15	4.24	6.57	1.88	1.88	0.00	0.00	0.01	0.01	0.04	8.91	0.00	0.00	0.26
94	0.400	30.70	0.00	13.17	4.06	6.59	2.00	2.00	0.00	0.00	0.01	0.01	0.06	7.91	0.00	0.00	0.27
95	0.300	30.70	0.00	12.03	3.85	6.64	2.16	2.16	0.00	0.00	0.02	0.02	0.07	6.92	0.00	0.00	0.28
96	0.200	30.70	0.00	10.71	3.60	6.72	2.40	2.40	0.00	0.00	0.02	0.02	0.09	5.92	0.00	0.00	0.29
97	0.100	30.70	0.00	9.19	3.32	6.89	2.71	2.71	0.00	0.00	0.03	0.03	0.10	4.93	0.00	0.00	0.31
98	0.000	30.70	0.00	7.42	2.99	7.19	3.14	3.14	0.00	0.00	0.03	0.03	0.12	3.93	0.00	0.00	0.34

* CM-I = CHLORIDES
MG/L

CM-II = SULFATES
MG/L

NCM = NBOD
MG/L

** g/cu m

STREAM SUMMARY
Marsh @ Welcome Rd.

MARSH B.WATERSHED SUMMER PROJ.MODEL #2;MOS NOT APPLIED TO NAT. B
02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C

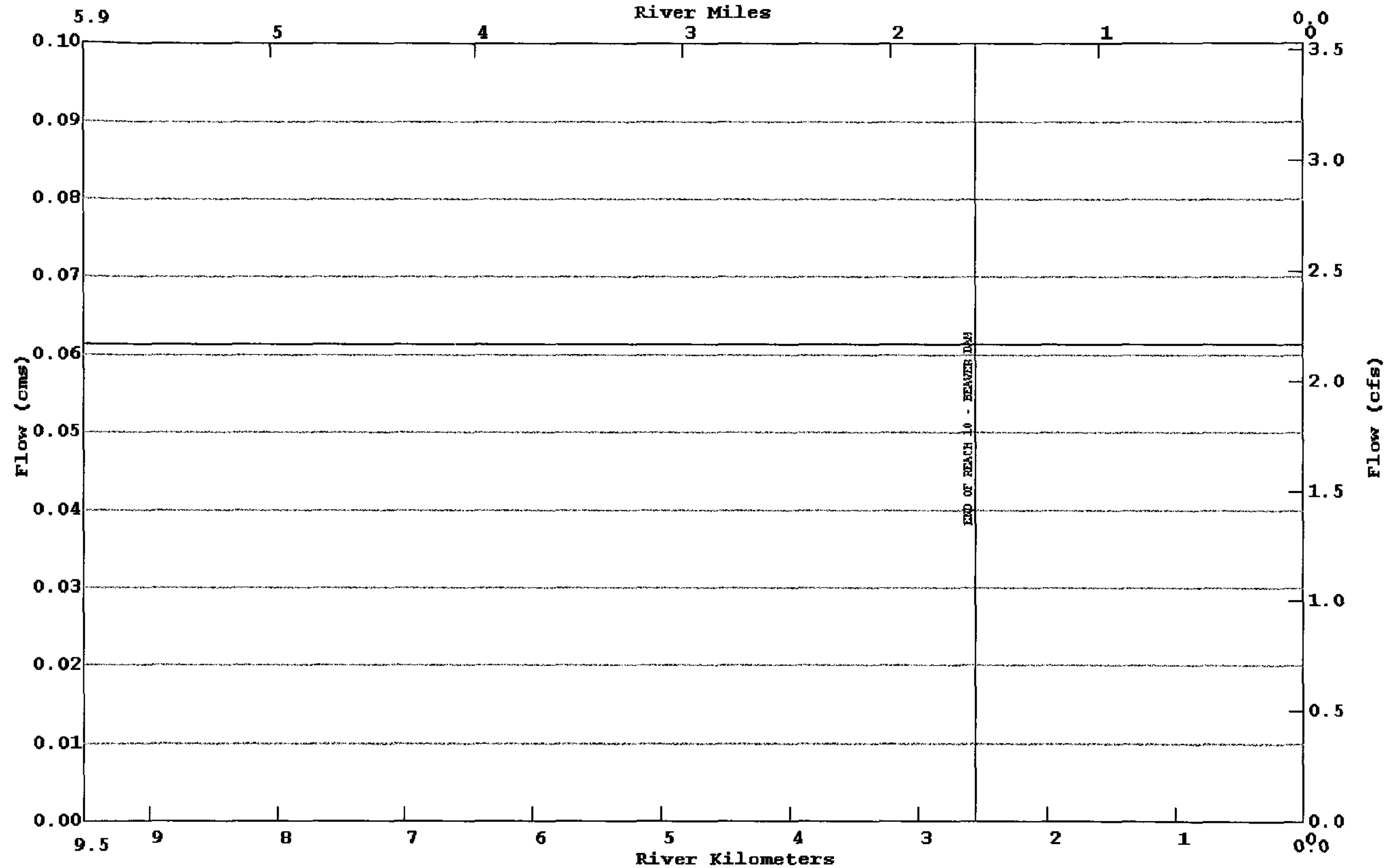
TRAVEL TIME = 31.10 DAYS

MAXIMUM EFFLUENT = 0.00 PERCENT

FLOW	=	0.06137	TO	0.06137	cms
DISPERSION	=	0.0000	TO	1.0000	sq m/s
VELOCITY	=	0.00157	TO	0.01147	m/s
DEPTH	=	0.63	TO	1.45	m
WIDTH	=	5.63	TO	29.59	m
BOD DECAY	=	0.00	TO	0.25	per day
NH3 DECAY	=	0.00	TO	0.00	per day
SDMNT OXYGEN DMND	=	0.00	TO	2.18	g/sq m/d
NH3 SOURCE	=	0.00	TO	0.00	g/sq m/d
REAERATION	=	0.54	TO	608.73	per day
BOD SETTLING	=	0.00	TO	0.10	per day
ORGN DECAY	=	0.00	TO	0.00	per day
ORGN SETTLING	=	0.00	TO	0.00	per day
TEMPERATURE	=	25.40	TO	30.70	deg C
DISSOLVED OXYGEN	=	5.12	TO	8.00	mg/L

.....EXECUTION COMPLETED

LA-QUAL Version 4.10 Run at 14:36 on 04/04/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100
02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C min= 0.06 max= 0.06
Marsh Bayou: Welcome Rd.-Calcasieu R.



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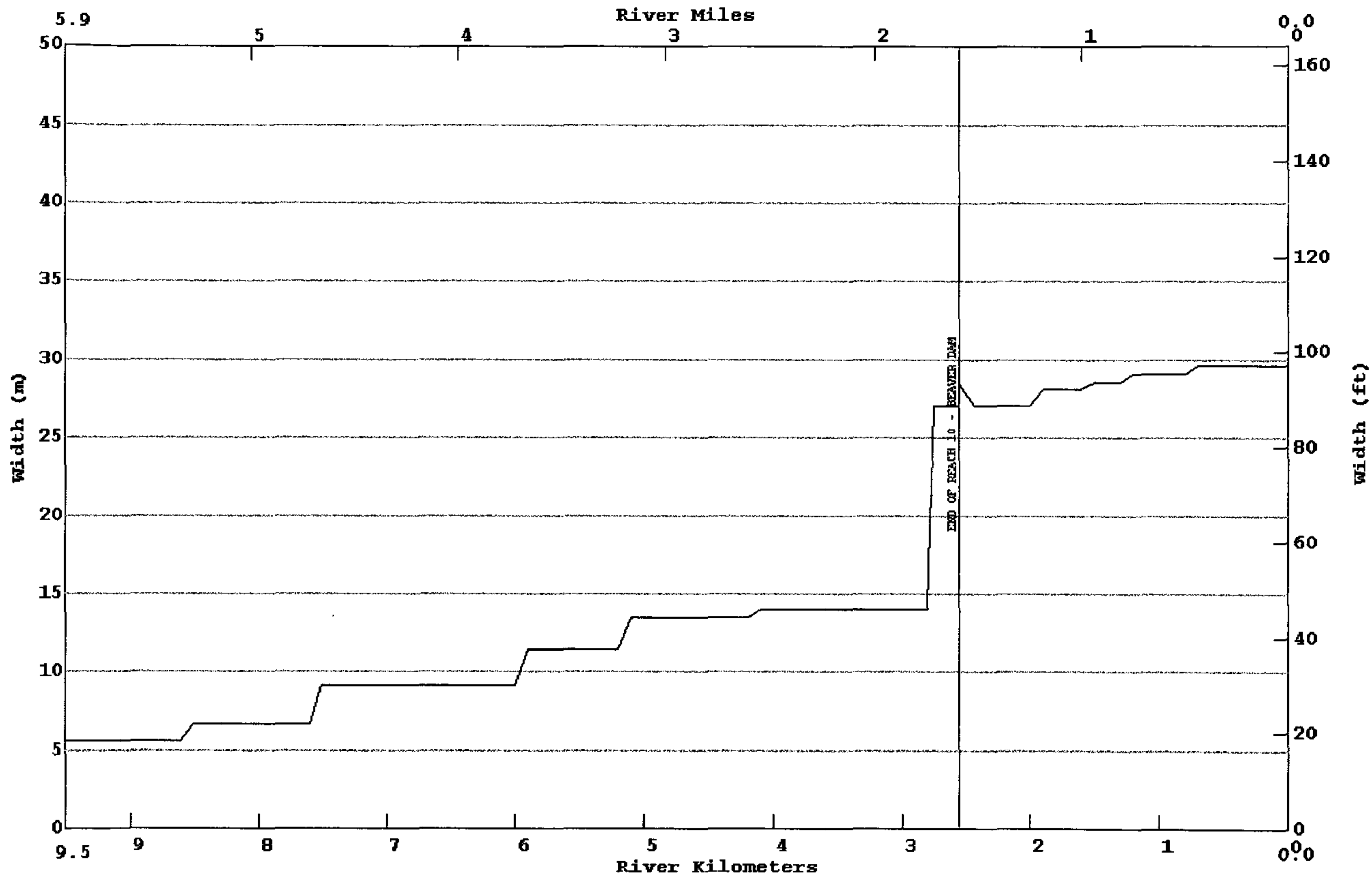
02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C min= 5.63 max= 29.59
Marsh Bayou: Welcome Rd.-Calcasieu R.



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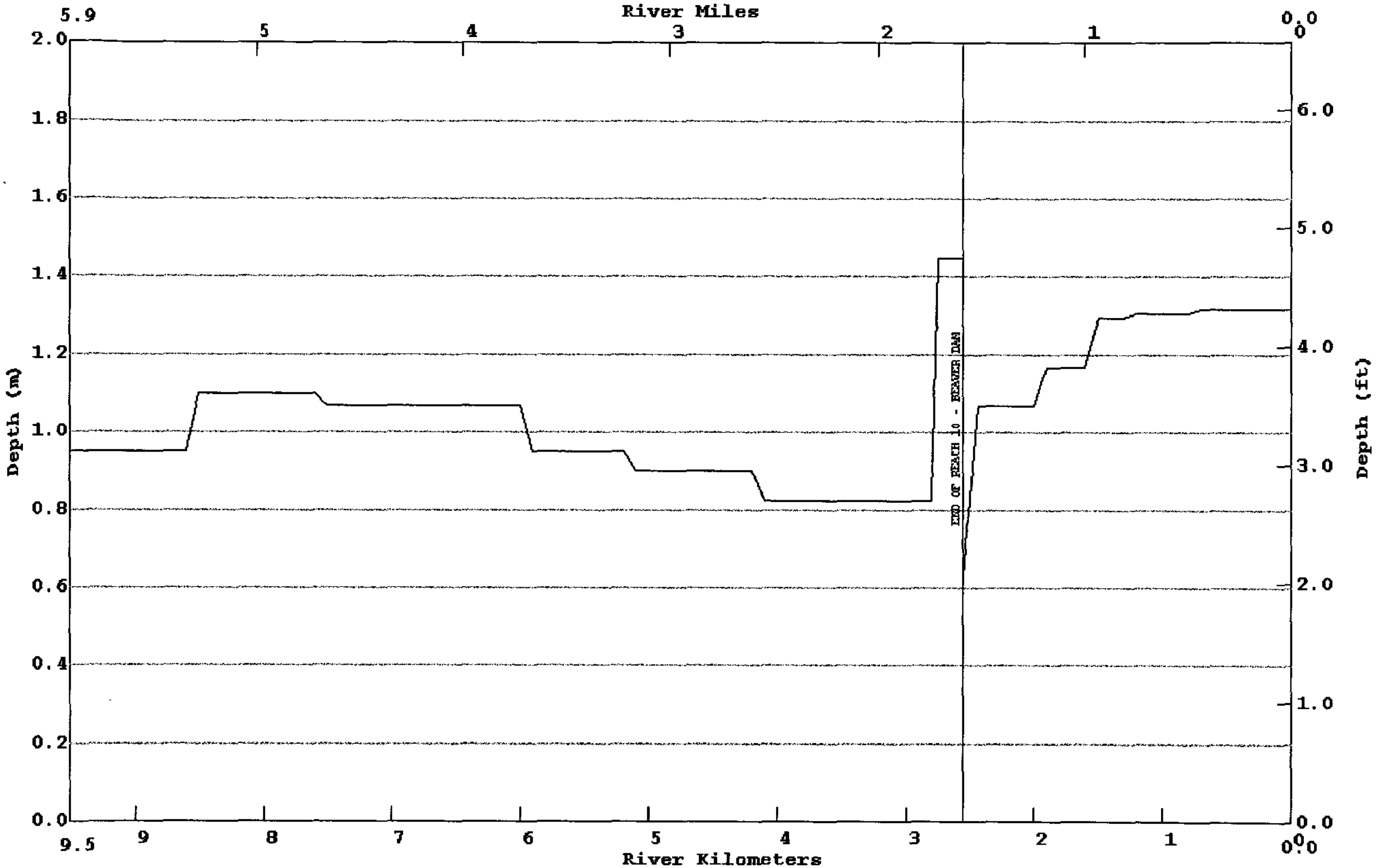
Marsh Bayou: Welcome Rd.-Calcasieu R.



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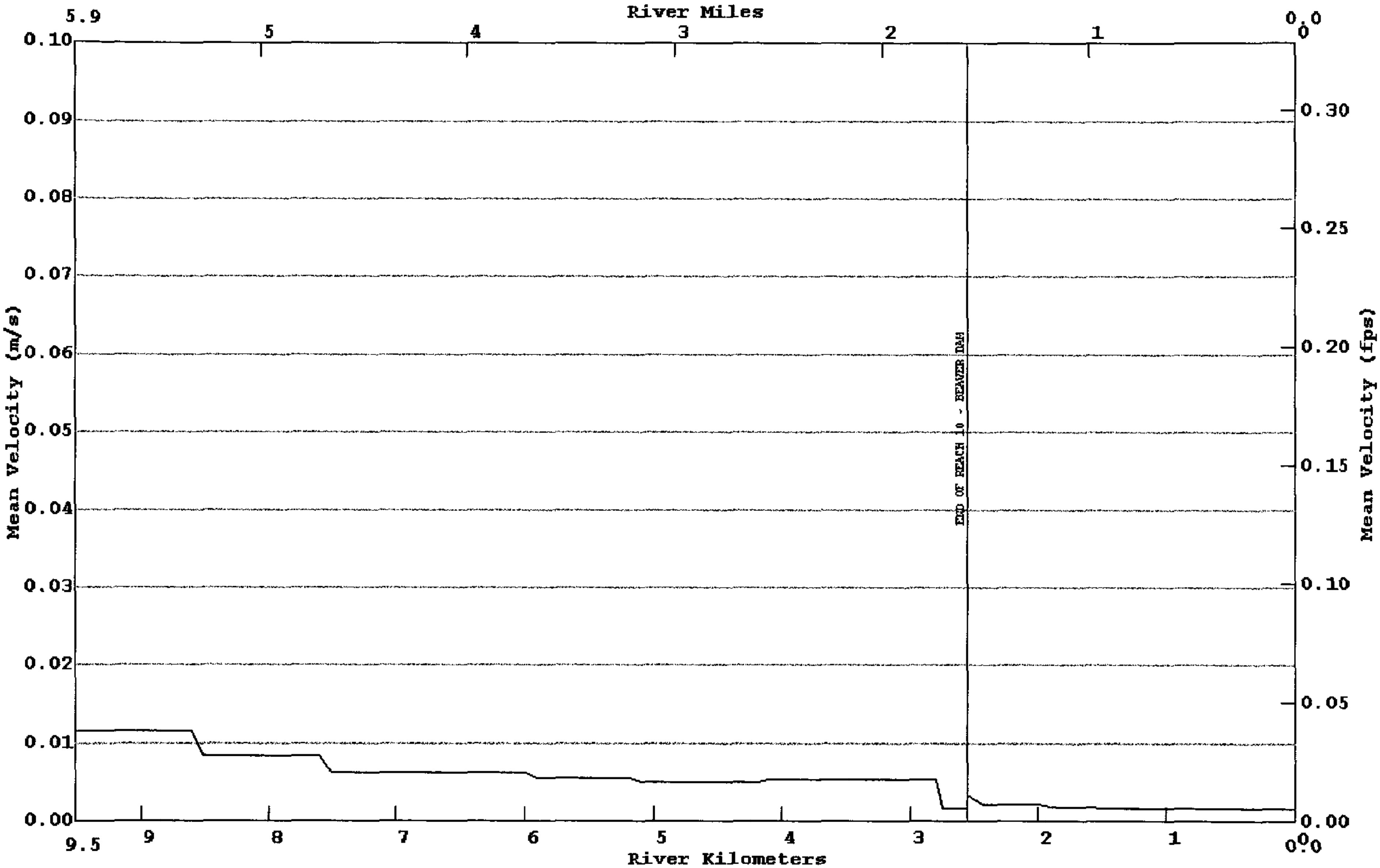
Marsh Bayou: Welcome Rd.-Calcasieu R.



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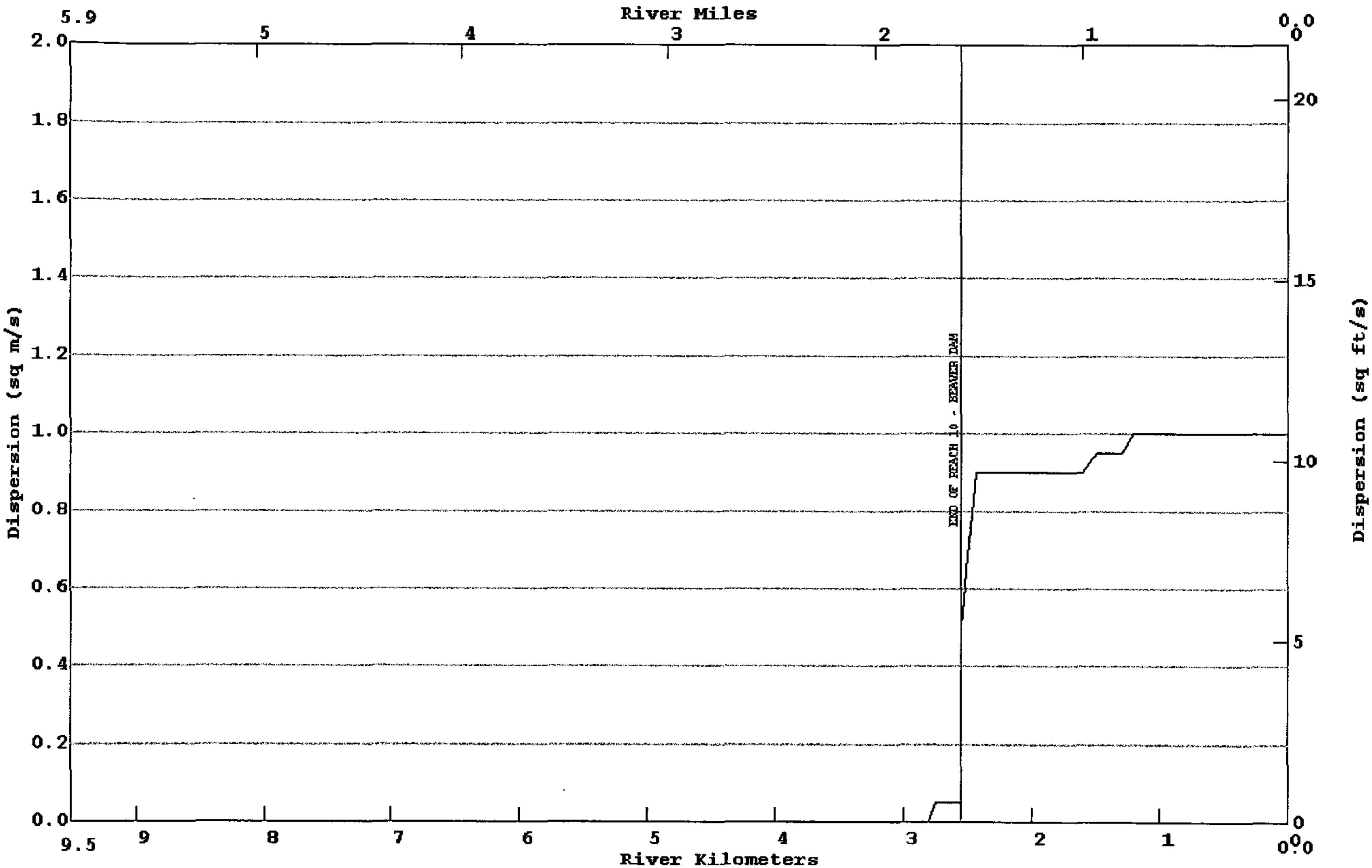
Marsh Bayou: Welcome Rd.-Calcasieu R.



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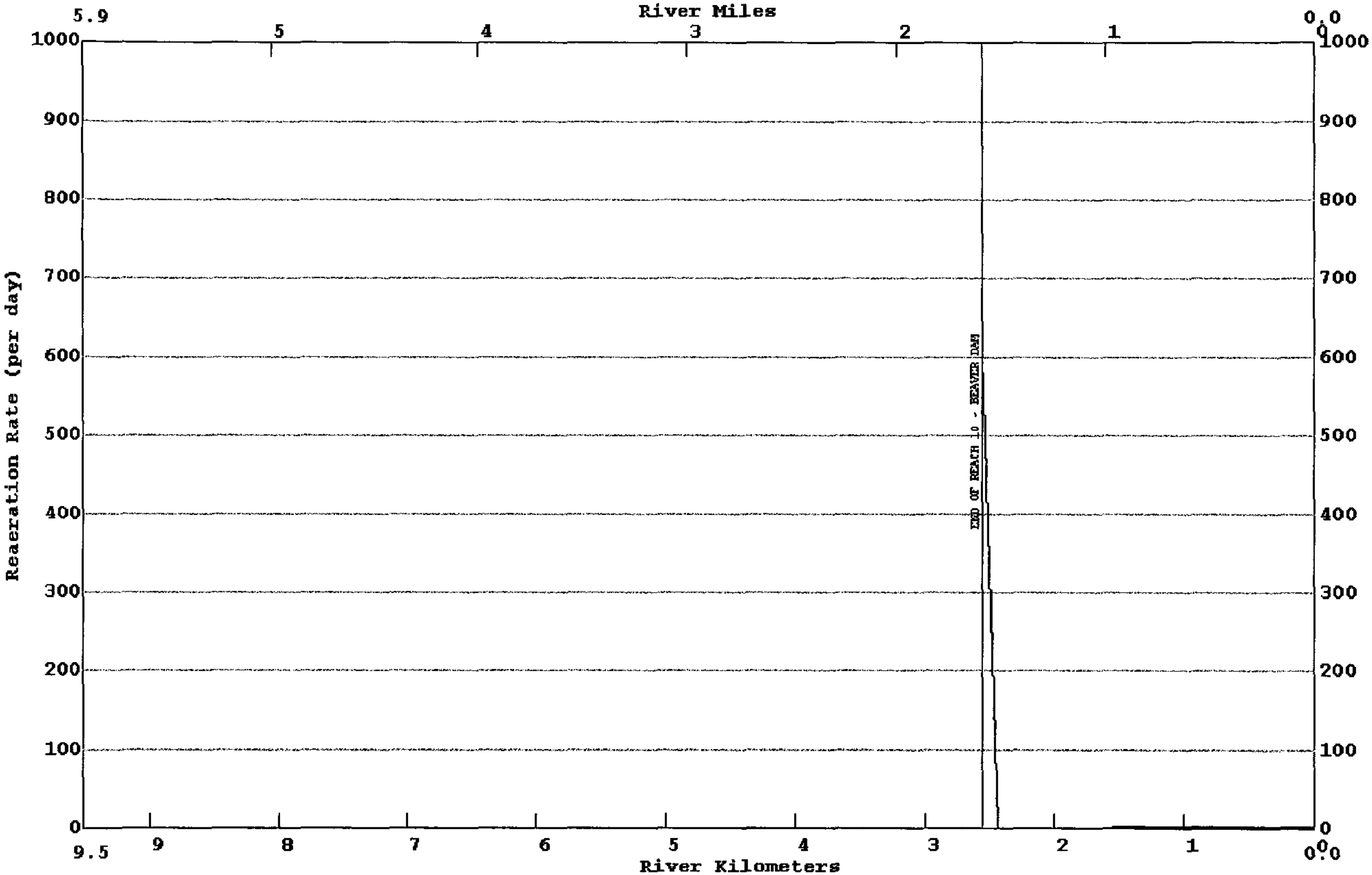
Marsh Bayou: Welcome Rd.-Calcasieu R.



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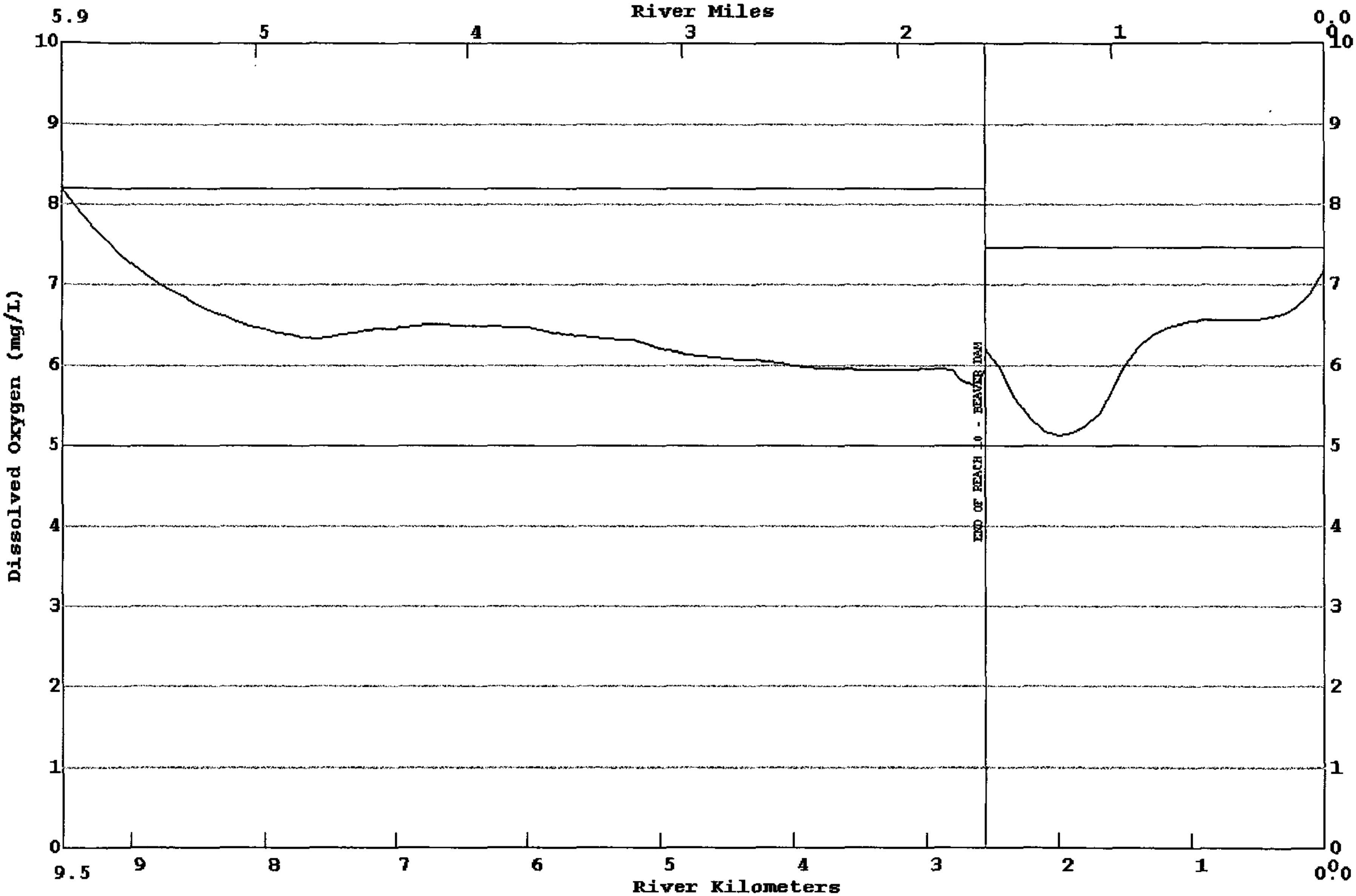
Marsh Bayou: Welcome Rd.-Calcasieu R.



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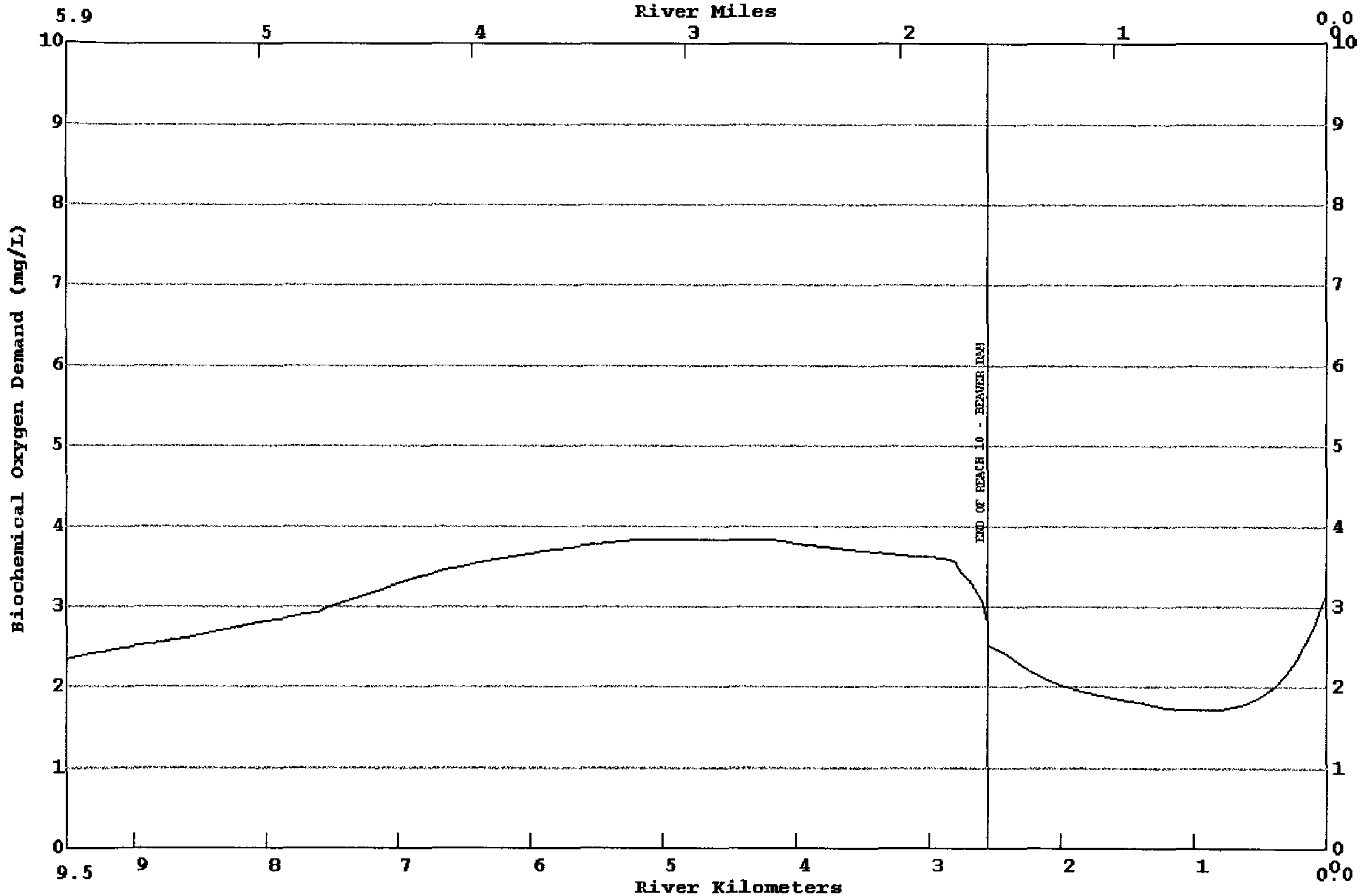
02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C min= 1.72 max= 3.84
Marsh Bayou: Welcome Rd.-Calcasieu R.



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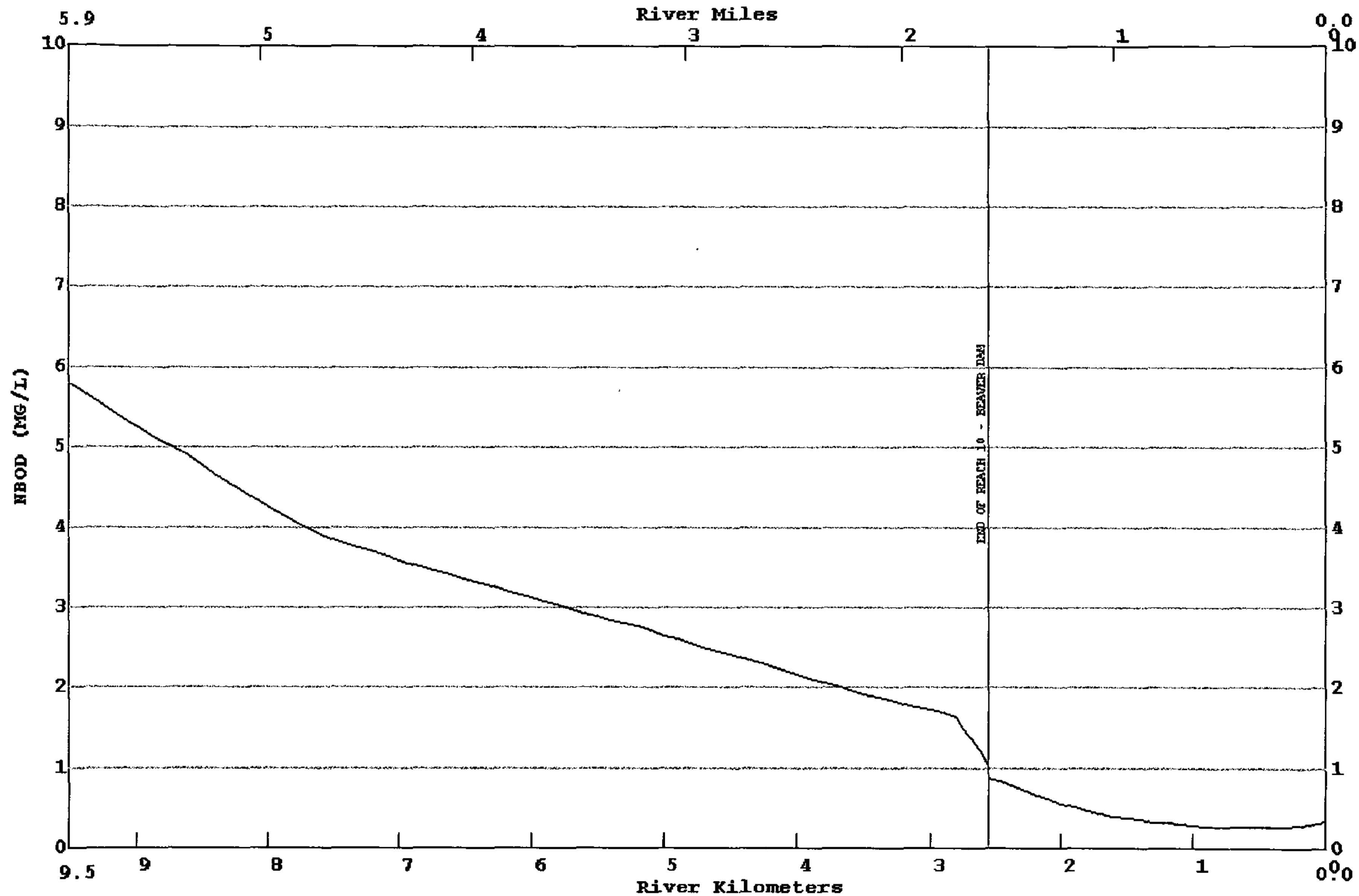
02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;20%RED.OF BCKGRND;W.C min= 0.26 max= 5.81
Marsh Bayou: Welcome Rd.-Calcasieu R.



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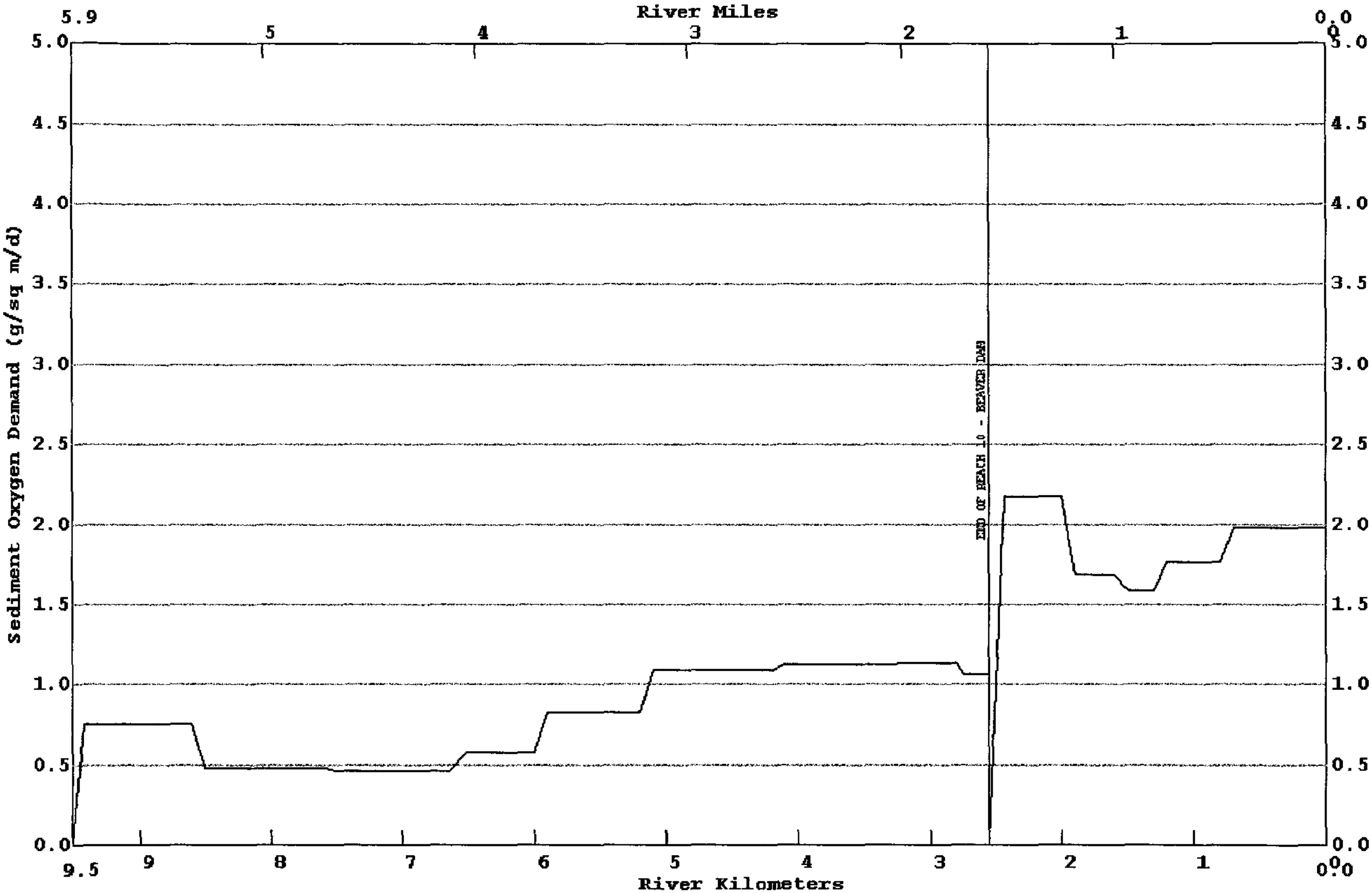
Marsh Bayou: Welcome Rd.-Calcasieu R.



Marsh Bayou Summer Water Quality Model Input Description

(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 9, Advective Hydraulic Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Width "a"	Unitless	4.450	Determined by Best Professional Judgement (BPJ) and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	4.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.400	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
2	Marsh Bayou, RKM 8.6-UT LDB	Width "a"	Unitless	4.450	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.550	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
3	Marsh Bayou, UT (LDB) to Site 4	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	9.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.650	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
6	Marsh Bayou, RKM 5.2-UT LDB	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	11.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration

		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.600	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
7	Marsh Bayou, UT (LDB)-Site 3	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.00020	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
8	Marsh Bayou, Site 3-Little Marsh Bayou	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.200	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.760	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
10	Marsh Bayou, Beaver Dam	Width "a"	Unitless	32.790	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.050	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.3047	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
11	Marsh Bayou, Beaver Dam-RKM 2.0	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
12	Marsh Bayou, RKM 2.0-UT LDB	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.800	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps

		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.930	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.940	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.950	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113

Marsh Bayou Summer Water Quality Model Input Description

(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 10, Dispersive Hydraulic Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
2	Marsh Bayou, RKM 8.6-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
3	Marsh Bayou, UT (LDB) to Site 4	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
6	Marsh Bayou, RKM 5.2-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
7	Marsh Bayou, UT (LDB)-Site 3	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

8	Marsh Bayou, Site 3-Little Marsh Bayou	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.05	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
10	Marsh Bayou, Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.50	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
11	Marsh Bayou, Beaver Dam-RKM 2.0	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
12	Marsh Bayou, RKM 2.0-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.95	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

Marsh Bayou Summer Water Quality Model Input Description
(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 11, INITIAL CONDITIONS

Reach #	NAME	Initial Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
2	Marsh Bayou, RKM 8.6-UT LDB	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
3	Marsh Bayou, UT (LDB) to Site 4	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839,
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		

5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
6	Marsh Bayou, RKM 5.2-UT LDB	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
7	Marsh Bayou, UT (LDB)-Site 3	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
8	Marsh Bayou, Site 3-Little Marsh Bayou	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		

		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
10	Marsh Bayou, Beaver Dam	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
11	Marsh Bayou, Beaver Dam-RKM 2.0	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
12	Marsh Bayou, RKM 2.0-UT LDB	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		

		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	*ug/l*	*11.900*	*Chlorophyll a value for Site 4*
		Macrophytes	g/m^3 or mg/ft^3		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		

Marsh Bayou Summer Water Quality Model Input Description
(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 12, Reaeration, Sediment Oxygen Demand and BOD Coeff.

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	0.54	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
2	*Marsh Bayou, RKM 8.6-UT* LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_{+C139} "C"	Unitless		
		Background SOD	g/m^2-day	0.34	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
3	Marsh Bayou, UT (LDB) to Site 4	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.33	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		

4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.41	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	0.59	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
6	Marsh Bayou, RKM 5.2-UT LDB	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.78	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
7	Marsh Bayou, UT (LDB)-Site 3	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		

		Background SOD	g/m^2-day	0.80	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.81	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	0.76	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
10	Marsh Bayou, Beaver Dam	K2 option	Unitless	1.00	$K_2 = a$
		K2 "A"	Unitless	500.00	Manually input reaeration value used for Reach 10 used to simulate the beaver dam. The value was determined by calibration.
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Aerobic BOD decay	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		BOD Settling rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11

		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.11	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
12	Marsh Bayou, RKM 2.0-UT LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	0.86	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	K2 option	Unitless	20.00	$K_2 = a/D$, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.81	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	K2 option	Unitless	20.00	$K_2 = a/D$, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)

		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.90	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	K_2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K_2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.01	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
6	Marsh Bayou, RKM 5.2-UT LDB	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
7	Marsh Bayou, UT (LDB)-Site 3	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
8	Marsh Bayou, Site 3-Little Marsh Bayou	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Coliform decay rate	1/day		

12	Marsh Bayou, RKM 2.0-UT LDB	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)

		Settled nonconservative material conversion to sediment oxygen demand			
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
10	Marsh Bayou, Beaver Dam	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Settled nonconservative material conversion to sediment oxygen demand			
11	Marsh Bayou, Beaver Dam-RKM 2.0	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

					and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	2.42	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Dissolved O_2	kg/day		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	BOD	kg/day	5.53	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.52	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Dissolved O_2	kg/day		

5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	BOD	kg/day	7.43	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.86	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Dissolved O_2	kg/day		
6	Marsh Bayou, RKM 5.2-UT LDB	BOD	kg/day	9.10	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.95	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Dissolved O_2	kg/day		
7	Marsh Bayou, UT (LDB)-Site 3	BOD	kg/day	8.58	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.51	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Dissolved O_2	kg/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	BOD	kg/day	4.74	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.79	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Dissolved O_2	kg/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	BOD	kg/day	5.64	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.03	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading

		Dissolved O_2	kg/day		
10	Marsh Bayou, Beaver Dam	BOD	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Dissolved O_2	kg/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	BOD	kg/day	6.94	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.39	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Dissolved O_2	kg/day		
12	Marsh Bayou, RKM 2.0-UT LDB	BOD	kg/day	7.88	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.39	~~Reduced value based upon the calibration value, a 100 percent~~ reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of ~~the benthic loading~~
		Dissolved O_2	kg/day		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	BOD	kg/day	6.43	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.37	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Dissolved O_2	kg/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	BOD	kg/day	9.58	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.55	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading

		Dissolved O_2	kg/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	BOD	kg/day	13.30	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.76	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20% reduction of the estimated natural background portion of the benthic loading
		Dissolved O_2	kg/day		

Marsh Bayou Summer Water Quality Model Input Description
(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 20, Headwater Data for Flow, Temperature, Salinity, and Conservatives					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input	#	1	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater name		Marsh Bayou @ Welcome Road	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater flow	cms	0.06137	Summer 7Q10 value for Marsh Bayou estimated by multiplying the average of the summer 7Q10/drainage area ratios for Bundick Crk. near Dry Crk. and Bundick Crk. near DeRidder by the drainage area of Marsh Bayou @ Welcome Rd.
		Temperature	°Celcius	25.4	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Conservative Matl. I	mg/l	20.4	Marsh Bayou Survey at Welcome Road (Site 5)
		Conservative Matl. II	mg/l	5.4	Marsh Bayou Survey at Welcome Road (Site 5)

Marsh Bayou Summer Water Quality Model Input Description (No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)					
DATA TYPE 21, Headwater Data for DO, BOD, and Nitrogen					
Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Dissolved O_2	mg/l	8.2	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		BOD	mg/l	2.35	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the load, and a 20% reduction of the estimated natural background load
		Org.- N	mg/l		
		NH_3-N	mg/l		
		NO_{2+3}-N	mg/l		

Marsh Bayou Summer Water Quality Model Input Description (No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)					
DATA TYPE 22, Headwater Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Phosphorus	mg/L		
		Chlorophyll a	ug/L	11.9	Marsh Bayou Survey at Welcome Road (Site 5)
		Coliform	#/100 mL		
		Nonconservative Material	mg/l	5.81	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the load, and a 20 percent reduction of the estimated natural background load

Marsh Bayou Summer Water Quality Model Input Description

(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 27, Lower Boundary Conditions

Reach #	NAME	Parameter	Units	Value	Source/Justification
	Calcasieu River	Temperature	°Celcius	30.70	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt	0.00	
		Conservative Matl. I	mg/l	6.40	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Conservative Matl. II	mg/l	2.80	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Dissolved O_2	mg/l	7.47	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		BOD	mg/l	3.42	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Org.- N	mg/l	0.22	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		NH_3-N	mg/l	0.00	
		NO_{2+3}-N	mg/l	0.03	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Phosphorus	mg/l	0.12	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Chlorophyl A	mg/l	3.93	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Coliform	mg/l		
		Nonconservative Material	mg/L	0.36	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)

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LA-QUAL Version 4.10
Louisiana Department of Environmental Quality

Input file is D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not applied to the natural
background\SUMMER\MARS_SUM_70_NOBCKGRNDMOS.txt
Output produced at 23:55 on 03/30/2001

$$$ DATA TYPE 1 (TITLES AND CONTROL CARDS) $$$

CARD TYPE        CONTROL TITLES

TITLE01          MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
TITLE02          02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER
CNTROL11   NO    SEQUENCING OUTPUT
CNTROL12  YES    METRIC UNITS
CNTROL13  YES    OXYGEN DEPENDENT RATES
ENDATA01

$$$ DATA TYPE 2 (MODEL OPTIONS) $$$

CARD TYPE        MODEL OPTION

MODOPT01   NO    TEMPERATURE
MODOPT02   NO    SALINITY
MODOPT03  YES    CONSERVATIVE MATERIAL  I = CHLORIDES                    IN MG/L
MODOPT04  YES    CONSERVATIVE MATERIAL II = SULFATES                     IN MG/L
MODOPT05  YES    DISSOLVED OXYGEN
MODOPT06  YES    BIOCHEMICAL OXYGEN DEMAND = UCBOD
MODOPT07   NO    NITROGEN
MODOPT08   NO    PHOSPHORUS
MODOPT09   NO    CHLOROPHYLL A
MODOPT10   NO    MACROPHYTES
MODOPT11   NO    COLIFORM
MODOPT12  YES    NONCONSERVATIVE MATERIAL = NBOD                         IN MG/L
ENDATA02

$$$ DATA TYPE 3 (PROGRAM CONSTANTS) $$$

CARD TYPE        DESCRIPTION OF CONSTANT                       VALUE

PROGRAM          HYDRAULIC CALCULATION METHOD      =         2.00000
PROGRAM          MAXIMUM ITERATION LIMIT           =       500.00000
PROGRAM          PLOT CONTROL VALUE                =         3.00000
PROGRAM          INTERMEDIATE REPORT TYPE          =         4.00000
PROGRAM          FINAL REPORT TYPE                 =         1.00000
PROGRAM          BOD OXYGEN UPTAKE RATE            =         1.00000
PROGRAM          NCM OXYGEN UPTAKE RATE            =         1.00000
PROGRAM          INHIBITION CONTROL VALUE          =         2.00000
PROGRAM          TIDE HEIGHT (METERS)              =         0.07600
PROGRAM          TIDAL PERIOD                      =        25.00000
PROGRAM          PERIOD OF TIDAL RISE              =        12.50000
PROGRAM          DISPERSION EQUATION               =         1.00000
PROGRAM          ALGAE OXYGEN PROD                 =         0.00000
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PROGRAM	OCEAN EXCHANGE RATIO	=	1.00000
PROGRAM	KL MINIMUM	=	0.70000
PROGRAM	K2 MAXIMUM	=	25.00000
PROGRAM	INHIBITION CONTROL VALUE	=	3.00000
PROGRAM	N INHIBITION EQUATION	=	2.00000
PROGRAM	OXYGEN DEPENDENCE THRESHOLD	=	2.00000
PROFRAM	SETTLING RATE UNITS	=	2.00000
PROGRAM	O ERROR CLOSURE LIMIT	=	0.75000
PROGRAM	O RELAXATION COEFFICIENT	=	0.25000
PROGRAM	O ITERATIONS PER CYCLE	=	0.00000
PROGRAM	EFFECTIVE BOD DUE TO ALGAE	=	0.00000

ENDATA03

$$$ DATA TYPE 4 (TEMPERATURE CORRECTION CONSTANTS FOR RATE COEFFICIENTS) $$$

CARD TYPE	RATE CODE	THETA VALUE
TEMP	BOD SETT	1.02400
TEMP	NCM DECA	1.07000
TEMP	NCM SETT	1.02400
TEMP	PO4 SRCE	1.06500
TEMP	NH3 SRCE	1.06500
TEMP	BENTHAL	1.06500
TEMP	NH3 DECA	1.07000
TEMP	ORGN SET	1.07000

ENDATA04

$$$ CONSTANTS TYPE 5 (TEMPERATURE DATA) $$$

CARD TYPE	DESCRIPTION OF CONSTANT	VALUE

ENDATA05

$$$ DATA TYPE 6 (ALGAE CONSTANTS) $$$

CARD TYPE	DESCRIPTION OF CONSTANT	VALUE

ENDATA06

$$$ DATA TYPE 7 (MACROPHYTE CONSTANTS) $$$

CARD TYPE	DESCRIPTION OF CONSTANT	VALUE

ENDATA07

$$$ DATA TYPE 8 (REACH IDENTIFICATION DATA) $$$

CARD TYPE	REACH	ID	NAME	BEGIN REACH km		END REACH km	ELEM LENGTH km	REACH LENGTH km	ELEMS PER RCH	BEGIN ELEM NUM	END ELEM NUM
REACH ID	1	MB	E. WELCOME RD.-RKM 8.6	9.52	TO	8.60	0.0920	0.92	10	1	10
REACH ID	2	MB	RKM 8.6-UT LDB	8.60	TO	7.60	0.1000	1.00	10	11	20
REACH ID	3	MB	UT LDB-SITE 4	7.60	TO	6.65	0.0950	0.95	10	21	30

REACH ID	4	MB	RKM 6.65-E. OF TOPSY RD.	6.65	TO	6.00	0.1300	0.65	5	31	35
REACH ID	5	MB	EAST OF TOPSY RD.-RKM 5.2	6.00	TO	5.20	0.1000	0.80	8	36	43
REACH ID	6	MB	RKM 5.2-UT LDB	5.20	TO	4.20	0.1000	1.00	10	44	53
REACH ID	7	MB	UT LDB-SITE 3	4.20	TO	3.30	0.1000	0.90	9	54	62
REACH ID	8	MB	SITE 3-LITTLE MARSH B.	3.30	TO	2.80	0.1000	0.50	5	63	67
REACH ID	9	MB	LITTLE MARSH B.-BEAVER DAM	2.80	TO	2.55	0.0500	0.25	5	68	72
REACH ID	10	MB	BEAVER DAM	2.55	TO	2.55	0.0010	0.00	1	73	73
REACH ID	11	MB	BEAVER DAM-RKM 2.0	2.55	TO	2.00	0.1100	0.55	5	74	78
REACH ID	12	MB	RKM 2.0-UT LDB	2.00	TO	1.60	0.1000	0.40	4	79	82
REACH ID	13	MB	UT LDB-NATURAL DIV. TO CAL.R.	1.60	TO	1.30	0.1000	0.30	3	83	85
REACH ID	14	MB	NAT. DIV. TO CAL.R.-RKM RKM 0.8	1.30	TO	0.80	0.1000	0.50	5	86	90
REACH ID	15	MB	UPPER OUTLET-LOWER OUTLET	0.80	TO	0.00	0.1000	0.80	8	91	98

ENDATA08

$$$ DATA TYPE 9 (ADVECTIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	WIDTH "A"	WIDTH "B"	WIDTH "C"	DEPTH "D"	DEPTH "E"	DEPTH "F"	SLOPE	MANNINGS "N"
HYDR-1	1	MB	4.450	0.360	4.000	2.100	0.480	0.400	0.00020	0.040
HYDR-1	2	MB	4.450	0.360	5.000	2.100	0.480	0.550	0.00020	0.040
HYDR-1	3	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	4	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	5	MB	5.400	0.360	9.500	1.150	0.480	0.650	0.00020	0.040
HYDR-1	6	MB	5.400	0.360	11.500	1.150	0.480	0.600	0.00020	0.040
HYDR-1	7	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	8	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	9	MB	16.500	0.500	23.000	1.200	0.200	0.760	0.00020	0.040
HYDR-1	10	MB	32.790	0.050	0.000	1.100	0.200	0.000	0.30470	0.040
HYDR-1	11	MB	16.500	0.500	23.000	1.400	0.480	0.700	0.00020	0.040
HYDR-1	12	MB	16.500	0.500	24.000	1.400	0.480	0.800	0.00020	0.040
HYDR-1	13	MB	16.500	0.500	24.500	1.400	0.480	0.930	0.00020	0.040
HYDR-1	14	MB	16.500	0.500	25.000	1.400	0.480	0.940	0.00020	0.040
HYDR-1	15	MB	16.500	0.500	25.500	1.400	0.480	0.950	0.00020	0.040

ENDATA09

$$$ DATA TYPE 10 (DISPERSIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	TIDAL RANGE	DISPERSION "A"	DISPERSION "B"	DISPERSION "C"	DISPERSION "D"
HYDR	1	MB	0.00	0.000	0.000	0.000	0.000
HYDR	2	MB	0.00	0.000	0.000	0.000	0.000
HYDR	3	MB	0.00	0.000	0.000	0.000	0.000
HYDR	4	MB	0.00	0.000	0.000	0.000	0.000
HYDR	5	MB	0.00	0.000	0.000	0.000	0.000
HYDR	6	MB	0.00	0.000	0.000	0.000	0.000
HYDR	7	MB	0.00	0.000	0.000	0.000	0.000
HYDR	8	MB	0.00	0.000	0.000	0.000	0.000
HYDR	9	MB	0.00	0.050	0.000	0.000	0.000
HYDR	10	MB	0.00	0.500	0.000	0.000	0.000
HYDR	11	MB	0.00	0.900	0.000	0.000	0.000
HYDR	12	MB	0.00	0.900	0.000	0.000	0.000

HYDR	13	MB	0.00	0.950	0.000	0.000	0.000
HYDR	14	MB	0.00	1.000	0.000	0.000	0.000
HYDR	15	MB	0.00	1.000	0.000	0.000	0.000
ENDATA10							

$$$ DATA TYPE 11 (INITIAL CONDITIONS) $$$

CARD TYPE	REACH	ID	TEMP	SALIN	DO	NH3	NO3+2	PHOS	CHL A	MACRO
INITIAL	1	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	2	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	3	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	4	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	5	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	6	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	7	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	8	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	9	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	10	MB	25.40	0.00	8.20	0.00	0.00	0.00	11.90	0.00
INITIAL	11	MB	30.70	0.00	7.47	0.00	0.00	0.00	11.90	0.00
INITIAL	12	MB	30.70	0.00	7.47	0.00	0.00	0.00	11.90	0.00
INITIAL	13	MB	30.70	0.00	7.47	0.00	0.00	0.00	11.90	0.00
INITIAL	14	MB	30.70	0.00	7.47	0.00	0.00	0.00	11.90	0.00
INITIAL	15	MB	30.70	0.00	7.47	0.00	0.00	0.00	11.90	0.00
ENDATA11										

$$$ DATA TYPE 12 (REAERATION, SEDIMENT OXYGEN DEMAND, BOD COEFFICIENTS) $$$

CARD TYPE	REACH	ID	K2 OPT	K2 "A"	K2 "B"	K2 "C"	BKGRND SOD	AEROB BOD DECAY	BOD SETT	BOD CONV TO SOD	ANAER BOD DECAY
COEF-1	1	MB	15 LOUISIANA	0.000	0.000	0.000	1.100	0.100	0.060	0.000	0.000
COEF-1	2	MB	15 LOUISIANA	0.000	0.000	0.000	0.690	0.100	0.060	0.000	0.000
COEF-1	3	MB	15 LOUISIANA	0.000	0.000	0.000	0.690	0.100	0.060	0.000	0.000
COEF-1	4	MB	15 LOUISIANA	0.000	0.000	0.000	0.850	0.100	0.060	0.000	0.000
COEF-1	5	MB	15 LOUISIANA	0.000	0.000	0.000	1.210	0.100	0.060	0.000	0.000
COEF-1	6	MB	15 LOUISIANA	0.000	0.000	0.000	1.580	0.100	0.060	0.000	0.000
COEF-1	7	MB	15 LOUISIANA	0.000	0.000	0.000	1.690	0.130	0.070	0.000	0.000
COEF-1	8	MB	15 LOUISIANA	0.000	0.000	0.000	1.640	0.130	0.070	0.000	0.000
COEF-1	9	MB	15 LOUISIANA	2.300	0.000	0.000	1.760	0.130	0.070	0.000	0.000
COEF-1	10	MB	1 K2=a	500.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEF-1	11	MB	15 LOUISIANA	0.000	0.000	0.000	2.100	0.150	0.080	0.000	0.000
COEF-1	12	MB	15 LOUISIANA	0.000	0.000	0.000	1.420	0.150	0.080	0.000	0.000
COEF-1	13	MB	20 K2=a/D	2.300	0.000	0.000	1.380	0.150	0.080	0.000	0.000
COEF-1	14	MB	20 K2=a/D	2.300	0.000	0.000	1.270	0.150	0.080	0.000	0.000
COEF-1	15	MB	20 K2=a/D	2.300	0.000	0.000	1.200	0.150	0.080	0.000	0.000
ENDATA12											

$$$ DATA TYPE 13 (NITROGEN AND PHOSPHORUS COEFFICIENTS) $$$

CARD TYPE	REACH	ID	ORG-N DECA	ORG-N SETT	ORGN CONV TO NH3 SRCE	NH3 DECA	NH3 SRCE	PHOS SRCE	DENIT RATE

ENDATA13

$$$ DATA TYPE 14 (ALGAE AND MACROPHYTE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	SECCHI DEPTH	ALGAE: CHL A	ALGAE SETT	ALG CONV TO SOD	ALGAE GROW	ALGAE RESP	MACRO GROW	MACRO RESP

ENDATA14

$$$ DATA TYPE 15 (COLIFORM AND NONCONSERVATIVE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	COLIFORM DIE-OFF	NCM DECAY	NCM SETT	NCM CONV TO SOD
COEF-4	1	MB	0.00	0.15	0.03	0.00
COEF-4	2	MB	0.00	0.15	0.03	0.00
COEF-4	3	MB	0.00	0.08	0.03	0.00
COEF-4	4	MB	0.00	0.08	0.03	0.00
COEF-4	5	MB	0.00	0.08	0.03	0.00
COEF-4	6	MB	0.00	0.08	0.03	0.00
COEF-4	7	MB	0.00	0.10	0.04	0.00
COEF-4	8	MB	0.00	0.10	0.04	0.00
COEF-4	9	MB	0.00	0.10	0.04	0.00
COEF-4	10	MB	0.00	0.00	0.00	0.00
COEF-4	11	MB	0.00	0.10	0.04	0.00
COEF-4	12	MB	0.00	0.10	0.04	0.00
COEF-4	13	MB	0.00	0.10	0.04	0.00
COEF-4	14	MB	0.00	0.08	0.04	0.00
COEF-4	15	MB	0.00	0.08	0.04	0.00

ENDATA15

$$$ DATA TYPE 16 (INCREMENTAL DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE	REACH	ID	OUTFLOW	INFLOW	TEMP	SALIN	CM-I	CM-II	IN/DIST	OUT/DIST

ENDATA16

$$$ DATA TYPE 17 (INCREMENTAL DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE	REACH	ID	DO	BOD	ORG-N	NH3	NO3+2

ENDATA17

$$$ DATA TYPE 18 (INCREMENTAL DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE	REACH	ID	PHOS	CHL A	COLI	NCM

ENDATA18

$$$ DATA TYPE 19 (NONPOINT SOURCE DATA) $$$

CARD TYPE	REACH	ID	BOD	ORG-N	COLI	NCM	DO

```
NONPOINT          1  MB       7.76       0.00       0.00       3.41       0.00
NONPOINT          2  MB      11.80       0.00       0.00       5.53       0.00
NONPOINT          3  MB      18.20       0.00       0.00       5.11       0.00
NONPOINT          4  MB      11.37       0.00       0.00       3.13       0.00
NONPOINT          5  MB      15.27       0.00       0.00       3.82       0.00
NONPOINT          6  MB      18.47       0.00       0.00       3.97       0.00
NONPOINT          7  MB      18.19       0.00       0.00       3.20       0.00
NONPOINT          8  MB       9.65       0.00       0.00       1.61       0.00
NONPOINT          9  MB      13.01       0.00       0.00       0.07       0.00
NONPOINT         10  MB       0.00       0.00       0.00       0.00       0.00
NONPOINT         11  MB      13.16       0.00       0.00       0.73       0.00
NONPOINT         12  MB      13.00       0.00       0.00       0.65       0.00
NONPOINT         13  MB      11.00       0.00       0.00       0.63       0.00
NONPOINT         14  MB      13.44       0.00       0.00       0.77       0.00
NONPOINT         15  MB      15.86       0.00       0.00       0.91       0.00
ENDATA19

$$$ DATA TYPE 20 (HEADWATER FOR FLOW, TEMPERATURE, SALINITY AND CONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                  UNIT         FLOW      TEMP     SALIN      CM-I      CM-II

HDWTR-1           1      Marsh @ Welcome Rd.     0       0.06137    25.400     0.000    20.400     5.400
ENDATA20

$$$ DATA TYPE 21 (HEADWATER DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE      ELEMENT   NAME                          DO        BOD     ORG-N        NH3     NO3+2

HDWTR-2           1      Marsh @ Welcome Rd.         8.20       6.41      0.00       0.00      0.00
ENDATA21

$$$ DATA TYPE 22 (HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                          PHOS      CHL A      COLI       NCM

HDWTR-3           1      Marsh @ Welcome Rd.           0.00      11.90      0.00       8.84
ENDATA22

$$$ DATA TYPE 23 (JUNCTION DATA) $$$

CARD TYPE    JUNCTION   UPSTRM     RIVER     NAME
              ELEMENT  ELEMENT     KILOM

ENDATA23

$$$ DATA TYPE 24 (WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE  ELEMENT    RKILO  NAME                            FLOW      TEMP       SAL      CM-I      CM-II

ENDATA24

$$$ DATA TYPE 25 (WASTELOAD DATA FOR DO, BOD, AND NITROGEN) $$$
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                                                                 % BOD                       %
CARD TYPE     ELEMENT   NAME                         DO      BOD      RMVL     ORG-N     NH3    NITRIF    NO3+2

ENDATA25

$$$ DATA TYPE 26 (WASTELOAD DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE     ELEMENT   NAME                       PHOS     CHL A     COLI      NCM

ENDATA26

$$$ DATA TYPE 27 (LOWER BOUNDARY CONDITIONS) $$$

CARD TYPE    CONSTITUENT                     CONCENTRATION

LOWER BC     TEMPERATURE                         =     30.700 deg C
LOWER BC     SALINITY                            =      0.000 ppt
LOWER BC     CONSERVATIVE MATERIAL  I            =      6.400 MG/L
LOWER BC     CONSERVATIVE MATERIAL II            =      2.800 MG/L
LOWER BC     DISSOLVED OXYGEN                    =      7.470 mg/L
LOWER BC     BIOCHEMICAL OXYGEN DEMAND           =      3.420 mg/L
LOWER BC     ORGANIC NITROGEN                    =      0.220 mg/L
LOWER BC     AMMONIA NITROGEN                    =      0.000 mg/L
LOWER BC     NITRATE+NITRITE NITROGEN            =      0.030 mg/L
LOWER BC     PHOSPHORUS                          =      0.120 mg/L
LOWER BC     CHLOROPHYLL A                       =      3.930 µg/L
LOWER BC     COLIFORM                            =      0.000 #/100 mL
LOWER BC     NONCONSERVATIVE MATERIAL            =      0.360 MG/L
ENDATA27

$$$ DATA TYPE 28 (RESERVED FOR FUTURE DATA INPUT) $$$

 CARD TYPE

ENDATA28

$$$ DATA TYPE 29 (SENSITIVITY ANALYSIS DATA) $$$

CARD TYPE       PARAMETER     COL 1     COL 2     COL 3     COL 4     COL 5     COL 6     COL 7     COL 8

ENDATA29

$$$ DATA TYPE 30 (PLOT CONTROL CARDS) $$$


NUMBER OF PLOTS =   5
NUMBER OF REACHES IN PLOT 1 =    4
PLOT RCH  1  2  3  4
NUMBER OF REACHES IN PLOT 2 =    4
PLOT RCH  5  6  7  8
NUMBER OF REACHES IN PLOT 3 =    4
PLOT RCH  9 10 11 12
NUMBER OF REACHES IN PLOT 4 =    3
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PLOT RCH 13 14 15
NUMBER OF REACHES IN PLOT 5 =  15
PLOT RCH  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
ENDATA30

$$$ DATA TYPE 31 (OVERLAY PLOT DATA) $$$

OVERLAY 1  marshsumpresentation.ovl       Marsh Bayou: Welcome Rd.-RKM 6.0
OVERLAY 2  marshsumpresentation.ovl       Marsh Bayou: RKM 6.0-RKM 2.8
OVERLAY 3  marshsumpresentation.ovl       Marsh Bayou: RKM 2.8-UT LDB (RKM 1.6)
OVERLAY 4  marshsumpresentation.ovl       Marsh Bayou: UT LDB(RKM 1.6)-CAL. R.
OVERLAY 5  marshsumpresentation.ovl       Marsh Bayou: Welcome Rd.-Calcasieu R.
ENDATA31

     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   1 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11
     .....GRAPHICS DATA FOR PLOT 2 WRITTEN TO UNIT 12
     .....GRAPHICS DATA FOR PLOT 3 WRITTEN TO UNIT 13
     .....GRAPHICS DATA FOR PLOT 4 WRITTEN TO UNIT 14
     .....GRAPHICS DATA FOR PLOT 5 WRITTEN TO UNIT 15
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CAPSULE SUMMARY
Marsh @ Welcome Rd.

DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD
HDWTR	0.06137	25.40	0.00	8.20	6.41	0.00	0.00	11.90					
9.43	0.06137	25.40	0.00	7.83	6.44	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
9.34	0.06137	25.40	0.00	7.49	6.47	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
9.24	0.06137	25.40	0.00	7.19	6.50	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
9.15	0.06137	25.40	0.00	6.91	6.52	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
9.06	0.06137	25.40	0.00	6.65	6.55	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
8.97	0.06137	25.40	0.00	6.42	6.58	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
8.88	0.06137	25.40	0.00	6.21	6.60	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
8.78	0.06137	25.40	0.00	6.02	6.63	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
8.69	0.06137	25.40	0.00	5.85	6.65	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
8.60	0.06137	25.40	0.00	5.69	6.68	0.00	0.00	11.90	0.97	0.13	0.07	0.00	1.55
8.50	0.06137	25.40	0.00	5.52	6.72	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97
8.40	0.06137	25.40	0.00	5.37	6.76	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97
8.30	0.06137	25.40	0.00	5.24	6.80	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97
8.20	0.06137	25.40	0.00	5.12	6.84	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97
8.10	0.06137	25.40	0.00	5.02	6.87	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97
8.00	0.06137	25.40	0.00	4.93	6.91	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97

7.90	0.06137	25.40	0.00	4.86	6.94	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97
7.80	0.06137	25.40	0.00	4.79	6.98	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97
7.70	0.06137	25.40	0.00	4.73	7.01	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97
7.60	0.06137	25.40	0.00	4.68	7.04	0.00	0.00	11.90	0.79	0.13	0.07	0.00	0.97
7.51	0.06137	25.40	0.00	4.72	7.14	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
7.41	0.06137	25.40	0.00	4.74	7.24	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
7.32	0.06137	25.40	0.00	4.77	7.33	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
7.22	0.06137	25.40	0.00	4.79	7.42	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
7.13	0.06137	25.40	0.00	4.81	7.50	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
7.03	0.06137	25.40	0.00	4.82	7.59	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
6.94	0.06137	25.40	0.00	4.83	7.67	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
6.84	0.06137	25.40	0.00	4.85	7.75	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
6.75	0.06137	25.40	0.00	4.85	7.82	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
6.65	0.06137	25.40	0.00	4.86	7.89	0.00	0.00	11.90	0.78	0.13	0.07	0.00	0.97
6.52	0.06137	25.40	0.00	4.83	7.95	0.00	0.00	11.90	0.78	0.13	0.07	0.00	1.19
6.39	0.06137	25.40	0.00	4.80	8.00	0.00	0.00	11.90	0.78	0.13	0.07	0.00	1.19
6.26	0.06137	25.40	0.00	4.78	8.06	0.00	0.00	11.90	0.78	0.13	0.07	0.00	1.19
6.13	0.06137	25.40	0.00	4.76	8.10	0.00	0.00	11.90	0.78	0.13	0.07	0.00	1.19
6.00	0.06137	25.40	0.00	4.74	8.15	0.00	0.00	11.90	0.78	0.13	0.07	0.00	1.19
5.90	0.06137	25.40	0.00	4.67	8.18	0.00	0.00	11.90	0.87	0.13	0.07	0.00	1.70
5.80	0.06137	25.40	0.00	4.60	8.21	0.00	0.00	11.90	0.87	0.13	0.07	0.00	1.70
5.70	0.06137	25.40	0.00	4.55	8.24	0.00	0.00	11.90	0.87	0.13	0.07	0.00	1.70
5.60	0.06137	25.40	0.00	4.50	8.26	0.00	0.00	11.90	0.87	0.13	0.07	0.00	1.70
5.50	0.06137	25.40	0.00	4.47	8.29	0.00	0.00	11.90	0.87	0.13	0.07	0.00	1.70
5.40	0.06137	25.40	0.00	4.43	8.31	0.00	0.00	11.90	0.87	0.13	0.07	0.00	1.70
5.30	0.06137	25.40	0.00	4.41	8.33	0.00	0.00	11.90	0.87	0.13	0.07	0.00	1.70
5.20	0.06137	25.40	0.00	4.39	8.36	0.00	0.00	11.90	0.87	0.13	0.07	0.00	1.70
5.10	0.06137	25.40	0.00	4.27	8.33	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
5.00	0.06137	25.40	0.00	4.17	8.30	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
4.90	0.06137	25.40	0.00	4.10	8.28	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
4.80	0.06137	25.40	0.00	4.04	8.26	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
4.70	0.06137	25.40	0.00	3.99	8.23	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
4.60	0.06137	25.40	0.00	3.95	8.21	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
4.50	0.06137	25.40	0.00	3.92	8.19	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
4.40	0.06137	25.40	0.00	3.90	8.17	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
4.30	0.06137	25.40	0.00	3.88	8.16	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
4.20	0.06137	25.40	0.00	3.87	8.14	0.00	0.00	11.90	0.91	0.13	0.07	0.00	2.22
4.10	0.06137	25.40	0.00	3.79	8.09	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.37
4.00	0.06137	25.40	0.00	3.72	8.04	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.37
3.90	0.06137	25.40	0.00	3.67	7.99	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.37
3.80	0.06137	25.40	0.00	3.63	7.95	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.37
3.70	0.06137	25.40	0.00	3.60	7.91	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.37
3.60	0.06137	25.40	0.00	3.58	7.87	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.37
3.50	0.06137	25.40	0.00	3.56	7.83	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.37
3.40	0.06137	25.40	0.00	3.55	7.80	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.37
3.30	0.06137	25.40	0.00	3.55	7.77	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.37
3.20	0.06137	25.40	0.00	3.56	7.72	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.30
3.10	0.06137	25.40	0.00	3.58	7.67	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.30
3.00	0.06137	25.40	0.00	3.60	7.63	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.30
2.90	0.06137	25.40	0.00	3.61	7.59	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.30
2.80	0.06137	25.40	0.00	3.59	7.52	0.00	0.00	11.90	1.00	0.17	0.08	0.00	2.30
2.75	0.06137	25.40	0.00	3.29	7.27	0.00	0.00	11.90	0.54	0.17	0.08	0.00	2.47
2.70	0.06137	25.40	0.00	3.15	7.10	0.00	0.00	11.90	0.54	0.17	0.08	0.00	2.47

2.65	0.06137	25.40	0.00	3.09	6.90	0.00	0.00	11.90	0.54	0.17	0.08	0.00	2.47
2.60	0.06137	25.40	0.00	3.22	6.59	0.00	0.00	11.90	0.54	0.17	0.08	0.00	2.47
2.55	0.06137	25.40	0.00	3.82	5.99	0.00	0.00	11.90	0.54	0.17	0.08	0.00	2.47
2.55	0.06137	30.70	0.00	4.72	5.30	0.00	0.00	11.90	608.73	0.00	0.00	0.00	0.00
2.44	0.06137	30.70	0.00	4.25	5.08	0.00	0.00	11.90	0.80	0.25	0.10	0.00	4.12
2.33	0.06137	30.70	0.00	3.65	4.75	0.00	0.00	11.90	0.80	0.25	0.10	0.00	4.12
2.22	0.06137	30.70	0.00	3.25	4.46	0.00	0.00	11.90	0.80	0.25	0.10	0.00	4.12
2.11	0.06137	30.70	0.00	3.03	4.21	0.00	0.00	11.90	0.80	0.25	0.10	0.00	4.12
2.00	0.06137	30.70	0.00	2.99	3.99	0.00	0.00	11.90	0.80	0.25	0.10	0.00	4.12
1.90	0.06137	30.70	0.00	3.16	3.82	0.00	0.00	11.90	0.73	0.25	0.10	0.00	2.79
1.80	0.06137	30.70	0.00	3.39	3.67	0.00	0.00	11.90	0.73	0.25	0.10	0.00	2.79
1.70	0.06137	30.70	0.00	3.73	3.54	0.00	0.00	11.90	0.73	0.25	0.10	0.00	2.79
1.60	0.06137	30.70	0.00	4.23	3.41	0.00	0.00	11.90	0.73	0.25	0.10	0.00	2.79
1.50	0.06137	30.70	0.00	4.90	3.28	0.00	0.00	11.90	2.16	0.25	0.10	0.00	2.71
1.40	0.06137	30.70	0.00	5.32	3.17	0.00	0.00	11.90	2.16	0.25	0.10	0.00	2.71
1.30	0.06137	30.70	0.00	5.61	3.04	0.00	0.00	11.90	2.16	0.25	0.10	0.00	2.71
1.20	0.06137	30.70	0.00	5.82	2.91	0.00	0.00	11.90	2.14	0.25	0.10	0.00	2.49
1.10	0.06137	30.70	0.00	5.96	2.80	0.00	0.00	11.90	2.14	0.25	0.10	0.00	2.49
1.00	0.06137	30.70	0.00	6.06	2.70	0.00	0.00	11.90	2.14	0.25	0.10	0.00	2.49
0.90	0.06137	30.70	0.00	6.13	2.62	0.00	0.00	11.90	2.14	0.25	0.10	0.00	2.49
0.80	0.06137	30.70	0.00	6.19	2.54	0.00	0.00	11.90	2.14	0.25	0.10	0.00	2.49
0.70	0.06137	30.70	0.00	6.24	2.47	0.00	0.00	10.90	2.13	0.25	0.10	0.00	2.35
0.60	0.06137	30.70	0.00	6.29	2.44	0.00	0.00	9.91	2.13	0.25	0.10	0.00	2.35
0.50	0.06137	30.70	0.00	6.33	2.44	0.00	0.00	8.91	2.13	0.25	0.10	0.00	2.35
0.40	0.06137	30.70	0.00	6.38	2.47	0.00	0.00	7.91	2.13	0.25	0.10	0.00	2.35
0.30	0.06137	30.70	0.00	6.45	2.55	0.00	0.00	6.92	2.13	0.25	0.10	0.00	2.35
0.20	0.06137	30.70	0.00	6.57	2.69	0.00	0.00	5.92	2.13	0.25	0.10	0.00	2.35
0.10	0.06137	30.70	0.00	6.78	2.91	0.00	0.00	4.93	2.13	0.25	0.10	0.00	2.35
0.00	0.06137	30.70	0.00	7.14	3.21	0.00	0.00	3.93	2.13	0.25	0.10	0.00	2.35

□

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH		DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
			HDWTR	0.061	25.4	0.0	8.2	6.4	0.0	0.0	11.9											
1	MB	1	9.43	0.061	25.4	0.0	7.8	6.4	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
2	MB	1	9.34	0.061	25.4	0.0	7.5	6.5	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
3	MB	1	9.24	0.061	25.4	0.0	7.2	6.5	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
4	MB	1	9.15	0.061	25.4	0.0	6.9	6.5	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
5	MB	1	9.06	0.061	25.4	0.0	6.7	6.6	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
6	MB	1	8.97	0.061	25.4	0.0	6.4	6.6	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
7	MB	1	8.88	0.061	25.4	0.0	6.2	6.6	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
8	MB	1	8.78	0.061	25.4	0.0	6.0	6.6	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
9	MB	1	8.69	0.061	25.4	0.0	5.8	6.7	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
10	MB	1	8.60	0.061	25.4	0.0	5.7	6.7	0.0	0.0	11.9	0.0	0.95	5.6	0.011	0.011	8.2	0.966	0.13	0.07	0.00	1.55
11	MB	2	8.50	0.061	25.4	0.0	5.5	6.7	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97
12	MB	2	8.40	0.061	25.4	0.0	5.4	6.8	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97
13	MB	2	8.30	0.061	25.4	0.0	5.2	6.8	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97
14	MB	2	8.20	0.061	25.4	0.0	5.1	6.8	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97
15	MB	2	8.10	0.061	25.4	0.0	5.0	6.9	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97
16	MB	2	8.00	0.061	25.4	0.0	4.9	6.9	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97
17	MB	2	7.90	0.061	25.4	0.0	4.9	6.9	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97

18	MB	2	7.80	0.061	25.4	0.0	4.8	7.0	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97
19	MB	2	7.70	0.061	25.4	0.0	4.7	7.0	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97
20	MB	2	7.60	0.061	25.4	0.0	4.7	7.0	0.0	0.0	11.9	0.0	1.10	6.6	0.008	0.008	8.2	0.790	0.13	0.07	0.00	0.97
21	MB	3	7.51	0.061	25.4	0.0	4.7	7.1	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
22	MB	3	7.41	0.061	25.4	0.0	4.7	7.2	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
23	MB	3	7.32	0.061	25.4	0.0	4.8	7.3	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
24	MB	3	7.22	0.061	25.4	0.0	4.8	7.4	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
25	MB	3	7.13	0.061	25.4	0.0	4.8	7.5	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
26	MB	3	7.03	0.061	25.4	0.0	4.8	7.6	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
27	MB	3	6.94	0.061	25.4	0.0	4.8	7.7	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
28	MB	3	6.84	0.061	25.4	0.0	4.8	7.7	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
29	MB	3	6.75	0.061	25.4	0.0	4.9	7.8	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
30	MB	3	6.65	0.061	25.4	0.0	4.9	7.9	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	0.97
31	MB	4	6.52	0.061	25.4	0.0	4.8	8.0	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	1.19
32	MB	4	6.39	0.061	25.4	0.0	4.8	8.0	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	1.19
33	MB	4	6.26	0.061	25.4	0.0	4.8	8.1	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	1.19
34	MB	4	6.13	0.061	25.4	0.0	4.8	8.1	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	1.19
35	MB	4	6.00	0.061	25.4	0.0	4.7	8.2	0.0	0.0	11.9	0.0	1.07	9.1	0.006	0.006	8.2	0.784	0.13	0.07	0.00	1.19
36	MB	5	5.90	0.061	25.4	0.0	4.7	8.2	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	1.70
37	MB	5	5.80	0.061	25.4	0.0	4.6	8.2	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	1.70
38	MB	5	5.70	0.061	25.4	0.0	4.5	8.2	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	1.70
39	MB	5	5.60	0.061	25.4	0.0	4.5	8.3	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	1.70
40	MB	5	5.50	0.061	25.4	0.0	4.5	8.3	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	1.70
41	MB	5	5.40	0.061	25.4	0.0	4.4	8.3	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	1.70
42	MB	5	5.30	0.061	25.4	0.0	4.4	8.3	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	1.70
43	MB	5	5.20	0.061	25.4	0.0	4.4	8.4	0.0	0.0	11.9	0.0	0.95	11.5	0.006	0.006	8.2	0.867	0.13	0.07	0.00	1.70
44	MB	6	5.10	0.061	25.4	0.0	4.3	8.3	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
45	MB	6	5.00	0.061	25.4	0.0	4.2	8.3	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
46	MB	6	4.90	0.061	25.4	0.0	4.1	8.3	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
47	MB	6	4.80	0.061	25.4	0.0	4.0	8.3	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
48	MB	6	4.70	0.061	25.4	0.0	4.0	8.2	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
49	MB	6	4.60	0.061	25.4	0.0	4.0	8.2	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
50	MB	6	4.50	0.061	25.4	0.0	3.9	8.2	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
51	MB	6	4.40	0.061	25.4	0.0	3.9	8.2	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
52	MB	6	4.30	0.061	25.4	0.0	3.9	8.2	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
53	MB	6	4.20	0.061	25.4	0.0	3.9	8.1	0.0	0.0	11.9	0.0	0.90	13.5	0.005	0.005	8.2	0.905	0.13	0.07	0.00	2.22
54	MB	7	4.10	0.061	25.4	0.0	3.8	8.1	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.37
55	MB	7	4.00	0.061	25.4	0.0	3.7	8.0	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.37
56	MB	7	3.90	0.061	25.4	0.0	3.7	8.0	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.37
57	MB	7	3.80	0.061	25.4	0.0	3.6	8.0	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.37
58	MB	7	3.70	0.061	25.4	0.0	3.6	7.9	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.37
59	MB	7	3.60	0.061	25.4	0.0	3.6	7.9	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.37
60	MB	7	3.50	0.061	25.4	0.0	3.6	7.8	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.37
61	MB	7	3.40	0.061	25.4	0.0	3.6	7.8	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.37
62	MB	7	3.30	0.061	25.4	0.0	3.6	7.8	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.37
63	MB	8	3.20	0.061	25.4	0.0	3.6	7.7	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.30
64	MB	8	3.10	0.061	25.4	0.0	3.6	7.7	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.30
65	MB	8	3.00	0.061	25.4	0.0	3.6	7.6	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.30
66	MB	8	2.90	0.061	25.4	0.0	3.6	7.6	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.30
67	MB	8	2.80	0.061	25.4	0.0	3.6	7.5	0.0	0.0	11.9	0.0	0.82	14.0	0.005	0.005	8.2	0.998	0.17	0.08	0.00	2.30
68	MB	9	2.75	0.061	25.4	0.0	3.3	7.3	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	2.47
69	MB	9	2.70	0.061	25.4	0.0	3.1	7.1	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	2.47
70	MB	9	2.65	0.061	25.4	0.0	3.1	6.9	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	2.47

IOR	REACH	DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
71	MB 9	2.60	0.061	25.4	0.0	3.2	6.6	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	2.47
72	MB 9	2.55	0.061	25.4	0.0	3.8	6.0	0.0	0.0	11.9	0.1	1.45	27.1	0.002	0.002	8.2	0.536	0.17	0.08	0.00	2.47
73	MB 10	2.55	0.061	30.7	0.0	4.7	5.3	0.0	0.0	11.9	0.5	0.63	28.5	0.003	0.003	7.560	8.726	0.00	0.00	0.00	0.00

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH	DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
74	MB 11	2.44	0.061	30.7	0.0	4.3	5.1	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	4.12
75	MB 11	2.33	0.061	30.7	0.0	3.7	4.7	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	4.12
76	MB 11	2.22	0.061	30.7	0.0	3.2	4.5	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	4.12
77	MB 11	2.11	0.061	30.7	0.0	3.0	4.2	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	4.12
78	MB 11	2.00	0.061	30.7	0.0	3.0	4.0	0.0	0.0	11.9	0.9	1.07	27.1	0.002	0.002	7.5	0.799	0.25	0.10	0.00	4.12
79	MB 12	1.90	0.061	30.7	0.0	3.2	3.8	0.0	0.0	11.9	0.9	1.17	28.1	0.002	0.002	7.5	0.730	0.25	0.10	0.00	2.79
80	MB 12	1.80	0.061	30.7	0.0	3.4	3.7	0.0	0.0	11.9	0.9	1.17	28.1	0.002	0.002	7.5	0.730	0.25	0.10	0.00	2.79
81	MB 12	1.70	0.061	30.7	0.0	3.7	3.5	0.0	0.0	11.9	0.9	1.17	28.1	0.002	0.002	7.5	0.730	0.25	0.10	0.00	2.79
82	MB 12	1.60	0.061	30.7	0.0	4.2	3.4	0.0	0.0	11.9	0.9	1.17	28.1	0.002	0.002	7.5	0.730	0.25	0.10	0.00	2.79
83	MB 13	1.50	0.061	30.7	0.0	4.9	3.3	0.0	0.0	11.9	0.9	1.30	28.6	0.002	0.002	7.5	2.159	0.25	0.10	0.00	2.71
84	MB 13	1.40	0.061	30.7	0.0	5.3	3.2	0.0	0.0	11.9	0.9	1.30	28.6	0.002	0.002	7.5	2.159	0.25	0.10	0.00	2.71
85	MB 13	1.30	0.061	30.7	0.0	5.6	3.0	0.0	0.0	11.9	0.9	1.30	28.6	0.002	0.002	7.5	2.159	0.25	0.10	0.00	2.71
86	MB 14	1.20	0.061	30.7	0.0	5.8	2.9	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	2.49
87	MB 14	1.10	0.061	30.7	0.0	6.0	2.8	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	2.49
88	MB 14	1.00	0.061	30.7	0.0	6.1	2.7	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	2.49
89	MB 14	0.90	0.061	30.7	0.0	6.1	2.6	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	2.49
90	MB 14	0.80	0.061	30.7	0.0	6.2	2.5	0.0	0.0	11.9	1.0	1.31	29.1	0.002	0.002	7.5	2.143	0.25	0.10	0.00	2.49
91	MB 15	0.70	0.061	30.7	0.0	6.2	2.5	0.0	0.0	10.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	2.35
92	MB 15	0.60	0.061	30.7	0.0	6.3	2.4	0.0	0.0	9.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	2.35
93	MB 15	0.50	0.061	30.7	0.0	6.3	2.4	0.0	0.0	8.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	2.35
94	MB 15	0.40	0.061	30.7	0.0	6.4	2.5	0.0	0.0	7.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	2.35
95	MB 15	0.30	0.061	30.7	0.0	6.4	2.6	0.0	0.0	6.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	2.35
96	MB 15	0.20	0.061	30.7	0.0	6.6	2.7	0.0	0.0	5.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	2.35
97	MB 15	0.10	0.061	30.7	0.0	6.8	2.9	0.0	0.0	4.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	2.35
98	MB 15	0.00	0.061	30.7	0.0	7.1	3.2	0.0	0.0	3.9	1.0	1.32	29.6	0.002	0.002	7.5	2.127	0.25	0.10	0.00	2.35

FINAL REPORT   Marsh @ Welcome Rd.
REACH NO. 1   E. WELCOME RD.-RKM 8.6

MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

*** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
1	HDWTR	0.06137	25.40	0.00	20.40	5.40	8.20	6.41	6.41	0.00	0.00	0.00	0.00	11.90	0.00	8.84

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s

1	9.52	9.43	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
2	9.43	9.34	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
3	9.34	9.24	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
4	9.24	9.15	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
5	9.15	9.06	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
6	9.06	8.97	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
7	8.97	8.88	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
8	8.88	8.78	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
9	8.78	8.69	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
10	8.69	8.60	0.06137	0.00	0.01147	0.09	0.95	5.63	492.06	517.90	5.35	0.00	0.000	0.000	0.011
TOT						0.93			4920.58	5179.04					
AVG					0.01147		0.95	5.63			5.35				
CUM						0.93									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	9.428	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
2	9.336	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
3	9.244	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
4	9.152	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
5	9.060	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
6	8.968	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
7	8.876	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
8	8.784	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
9	8.692	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
10	8.600	8.20	0.97	0.13	0.07	0.00	1.55	1.55	1.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
20 DEG C RATE				0.10		0.00		1.10	0.00		0.00	0.00	0.00	0.00			0.00	8.70		
AVG 20 DEG C RATE			0.87		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
1	9.428	25.40	0.00	20.40	5.40	7.83	6.44	6.44	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.70
2	9.336	25.40	0.00	20.40	5.40	7.49	6.47	6.47	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.57
3	9.244	25.40	0.00	20.40	5.40	7.19	6.50	6.50	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.44
4	9.152	25.40	0.00	20.40	5.40	6.91	6.52	6.52	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.31
5	9.060	25.40	0.00	20.40	5.40	6.65	6.55	6.55	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.18
6	8.968	25.40	0.00	20.40	5.40	6.42	6.58	6.58	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.06
7	8.876	25.40	0.00	20.40	5.40	6.21	6.60	6.60	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.94
8	8.784	25.40	0.00	20.40	5.40	6.02	6.63	6.63	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.82
9	8.692	25.40	0.00	20.40	5.40	5.85	6.65	6.65	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.71
10	8.600	25.40	0.00	20.40	5.40	5.69	6.68	6.68	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.59

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 2 RKM 8.6-UT LDB 02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
11	UPR RCH	0.06137	25.40	0.00	20.40	5.40	5.69	6.68	6.68	0.00	0.00	0.00	0.00	11.90	0.00	7.59

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
11	8.60	8.50	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
12	8.50	8.40	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
13	8.40	8.30	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
14	8.30	8.20	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
15	8.20	8.10	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
16	8.10	8.00	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
17	8.00	7.90	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
18	7.90	7.80	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
19	7.80	7.70	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
20	7.70	7.60	0.06137	0.00	0.00841	0.14	1.10	6.63	729.30	662.94	7.29	0.00	0.000	0.000	0.008
TOT						1.38			7292.96	6629.39					
AVG					0.00841		1.10	6.63			7.29				
CUM						2.30									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
11	8.500	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
12	8.400	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
13	8.300	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
14	8.200	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
15	8.100	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
16	8.000	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
17	7.900	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
18	7.800	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
19	7.700	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
20	7.600	8.20	0.79	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.21	0.03
20 DEG C RATE				0.10		0.00		0.69	0.00		0.00	0.00	0.00	0.00			0.00	8.57		
AVG 20 DEG C RATE			0.71		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
11	8.500	25.40	0.00	20.40	5.40	5.52	6.72	6.72	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.44
12	8.400	25.40	0.00	20.40	5.40	5.37	6.76	6.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.30
13	8.300	25.40	0.00	20.40	5.40	5.24	6.80	6.80	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.15
14	8.200	25.40	0.00	20.40	5.40	5.12	6.84	6.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.02
15	8.100	25.40	0.00	20.40	5.40	5.02	6.87	6.87	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.88
16	8.000	25.40	0.00	20.40	5.40	4.93	6.91	6.91	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.76
17	7.900	25.40	0.00	20.40	5.40	4.86	6.94	6.94	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.63
18	7.800	25.40	0.00	20.40	5.40	4.79	6.98	6.98	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.51
19	7.700	25.40	0.00	20.40	5.40	4.73	7.01	7.01	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.40
20	7.600	25.40	0.00	20.40	5.40	4.68	7.04	7.04	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.28

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L
** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 3   UT LDB-SITE 4   02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

*** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
21	UPR RCH	0.06137	25.40	0.00	20.40	5.40	4.68	7.04	7.04	0.00	0.00	0.00	0.00	11.90	0.00	6.28

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
21	7.60	7.51	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
22	7.51	7.41	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
23	7.41	7.32	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
24	7.32	7.22	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
25	7.22	7.13	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
26	7.13	7.03	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
27	7.03	6.94	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
28	6.94	6.84	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
29	6.84	6.75	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
30	6.75	6.65	0.06137	0.00	0.00630	0.17	1.07	9.13	925.31	867.42	9.74	0.00	0.000	0.000	0.006
TOT						1.75			9253.07	8674.23					
AVG					0.00630		1.07	9.13			9.74				
CUM						4.05									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
21	7.505	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
22	7.410	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03

23	7.315	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
24	7.220	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
25	7.125	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
26	7.030	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
27	6.935	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
28	6.840	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
29	6.745	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
30	6.650	8.20	0.78	0.13	0.07	0.00	0.97	0.97	0.97	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		0.69	0.00		0.00	0.00	0.00	0.00			0.00	8.44		
AVG 20 DEG C RATE			0.71		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
21	7.505	25.40	0.00	20.40	5.40	4.72	7.14	7.14	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.22
22	7.410	25.40	0.00	20.40	5.40	4.74	7.24	7.24	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.15
23	7.315	25.40	0.00	20.40	5.40	4.77	7.33	7.33	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.09
24	7.220	25.40	0.00	20.40	5.40	4.79	7.42	7.42	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.03
25	7.125	25.40	0.00	20.40	5.40	4.81	7.50	7.50	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.97
26	7.030	25.40	0.00	20.40	5.40	4.82	7.59	7.59	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.91
27	6.935	25.40	0.00	20.40	5.40	4.83	7.67	7.67	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.86
28	6.840	25.40	0.00	20.40	5.40	4.85	7.75	7.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.80
29	6.745	25.40	0.00	20.40	5.40	4.85	7.82	7.82	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.75
30	6.650	25.40	0.00	20.40	5.40	4.86	7.89	7.89	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.70

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 4 RKM 6.65-E. OF TOPSY RD. 02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *

31	UPR RCH	0.06137	25.40	0.00	20.40	5.40	4.86	7.89	7.89	0.00	0.00	0.00	0.00	11.90	0.00	5.70

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
31	6.65	6.52	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
32	6.52	6.39	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
33	6.39	6.26	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
34	6.26	6.13	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
35	6.13	6.00	0.06137	0.00	0.00630	0.24	1.07	9.13	1266.21	1187.00	9.74	0.00	0.000	0.000	0.006
TOT						1.19			6331.05	5935.00					
AVG					0.00630		1.07	9.13			9.74				
CUM						5.24									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
31	6.520	8.20	0.78	0.13	0.07	0.00	1.19	1.19	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
32	6.390	8.20	0.78	0.13	0.07	0.00	1.19	1.19	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
33	6.260	8.20	0.78	0.13	0.07	0.00	1.19	1.19	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
34	6.130	8.20	0.78	0.13	0.07	0.00	1.19	1.19	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
35	6.000	8.20	0.78	0.13	0.07	0.00	1.19	1.19	1.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		0.85	0.00		0.00	0.00	0.00	0.00			0.00	8.31		
AVG 20 DEG C RATE			0.71		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
31	6.520	25.40	0.00	20.40	5.40	4.83	7.95	7.95	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.61
32	6.390	25.40	0.00	20.40	5.40	4.80	8.00	8.00	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.54

33	6.260	25.40	0.00	20.40	5.40	4.78	8.06	8.06	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.46
34	6.130	25.40	0.00	20.40	5.40	4.76	8.10	8.10	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.38
35	6.000	25.40	0.00	20.40	5.40	4.74	8.15	8.15	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.31

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE

REACH NO. 5   EAST OF TOPSY RD.-RKM 5.2   02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
36	UPR RCH	0.06137	25.40	0.00	20.40	5.40	4.74	8.15	8.15	0.00	0.00	0.00	0.00	11.90	0.00	5.31

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
36	6.00	5.90	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
37	5.90	5.80	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
38	5.80	5.70	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
39	5.70	5.60	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
40	5.60	5.50	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
41	5.50	5.40	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
42	5.40	5.30	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
43	5.30	5.20	0.06137	0.00	0.00562	0.21	0.95	11.48	1091.76	1147.72	10.92	0.00	0.000	0.000	0.006
TOT						1.65			8734.11	9181.79					
AVG					0.00562		0.95	11.48			10.92				
CUM						6.89									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
36	5.900	8.20	0.87	0.13	0.07	0.00	1.70	1.70	1.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
37	5.800	8.20	0.87	0.13	0.07	0.00	1.70	1.70	1.70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	

```
0.03
 38    5.700  8.20    0.87    0.13  0.07    0.00  1.70  1.70  1.70    0.00  0.00    0.00  0.00    0.00  0.00  0.00  0.00    0.00    0.11
0.03
 39    5.600  8.20    0.87    0.13  0.07    0.00  1.70  1.70  1.70    0.00  0.00    0.00  0.00    0.00  0.00  0.00  0.00    0.00    0.11
0.03
 40    5.500  8.20    0.87    0.13  0.07    0.00  1.70  1.70  1.70    0.00  0.00    0.00  0.00    0.00  0.00  0.00  0.00    0.00    0.11
0.03
 41    5.400  8.20    0.87    0.13  0.07    0.00  1.70  1.70  1.70    0.00  0.00    0.00  0.00    0.00  0.00  0.00  0.00    0.00    0.11
0.03
 42    5.300  8.20    0.87    0.13  0.07    0.00  1.70  1.70  1.70    0.00  0.00    0.00  0.00    0.00  0.00  0.00  0.00    0.00    0.11
0.03
 43    5.200  8.20    0.87    0.13  0.07    0.00  1.70  1.70  1.70    0.00  0.00    0.00  0.00    0.00  0.00  0.00  0.00    0.00    0.11
0.03

 20 DEG C RATE                0.10          0.00        1.21  0.00          0.00  0.00    0.00  0.00                0.00   8.18
 AVG 20 DEG C RATE    0.78          0.06                            0.00                                                       0.03

 * g/sq m/d           ** mg/L/day
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** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
36	5.900	25.40	0.00	20.40	5.40	4.67	8.18	8.18	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.24
37	5.800	25.40	0.00	20.40	5.40	4.60	8.21	8.21	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.17
38	5.700	25.40	0.00	20.40	5.40	4.55	8.24	8.24	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.11
39	5.600	25.40	0.00	20.40	5.40	4.50	8.26	8.26	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.04
40	5.500	25.40	0.00	20.40	5.40	4.47	8.29	8.29	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.98
41	5.400	25.40	0.00	20.40	5.40	4.43	8.31	8.31	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.92
42	5.300	25.40	0.00	20.40	5.40	4.41	8.33	8.33	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.86
43	5.200	25.40	0.00	20.40	5.40	4.39	8.36	8.36	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.80

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd.
REACH NO. 6 RKM 5.2-UT LDB

MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
44	UPR RCH	0.06137	25.40	0.00	20.40	5.40	4.39	8.36	8.36	0.00	0.00	0.00	0.00	11.90	0.00	4.80

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
44	5.20	5.10	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
45	5.10	5.00	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
46	5.00	4.90	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
47	4.90	4.80	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
48	4.80	4.70	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
49	4.70	4.60	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
50	4.60	4.50	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
51	4.50	4.40	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
52	4.40	4.30	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
53	4.30	4.20	0.06137	0.00	0.00505	0.23	0.90	13.48	1214.63	1347.72	12.15	0.00	0.000	0.000	0.005
TOT						2.29			12146.26	13477.24					
AVG					0.00505		0.90	13.48			12.15				
CUM						9.18									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
44	5.100	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
45	5.000	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
46	4.900	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
47	4.800	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
48	4.700	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
49	4.600	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
50	4.500	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
51	4.400	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
52	4.300	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
53	4.200	8.20	0.91	0.13	0.07	0.00	2.22	2.22	2.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		1.58	0.00		0.00	0.00	0.00	0.00			0.00	8.06		
AVG 20 DEG C RATE			0.82		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
44	5.100	25.40	0.00	20.40	5.40	4.27	8.33	8.33	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.71
45	5.000	25.40	0.00	20.40	5.40	4.17	8.30	8.30	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.63
46	4.900	25.40	0.00	20.40	5.40	4.10	8.28	8.28	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.55
47	4.800	25.40	0.00	20.40	5.40	4.04	8.26	8.26	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.47
48	4.700	25.40	0.00	20.40	5.40	3.99	8.23	8.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.40
49	4.600	25.40	0.00	20.40	5.40	3.95	8.21	8.21	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.32
50	4.500	25.40	0.00	20.40	5.40	3.92	8.19	8.19	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.25
51	4.400	25.40	0.00	20.40	5.40	3.90	8.17	8.17	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.18
52	4.300	25.40	0.00	20.40	5.40	3.88	8.16	8.16	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.12
53	4.200	25.40	0.00	20.40	5.40	3.87	8.14	8.14	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.05

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 7 UT LDB-SITE 3 02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
54	UPR RCH	0.06137	25.40	0.00	20.40	5.40	3.87	8.14	8.14	0.00	0.00	0.00	0.00	11.90	0.00	4.05

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
54	4.20	4.10	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
55	4.10	4.00	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
56	4.00	3.90	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
57	3.90	3.80	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
58	3.80	3.70	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
59	3.70	3.60	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
60	3.60	3.50	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
61	3.50	3.40	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
62	3.40	3.30	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
TOT						1.95			10348.15	12589.75					

AVG	0.00534		0.82	13.99	11.50
CUM		11.13			

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
54	4.100	8.20	1.00	0.17	0.08	0.00	2.37	2.37	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
55	4.000	8.20	1.00	0.17	0.08	0.00	2.37	2.37	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
56	3.900	8.20	1.00	0.17	0.08	0.00	2.37	2.37	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
57	3.800	8.20	1.00	0.17	0.08	0.00	2.37	2.37	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
58	3.700	8.20	1.00	0.17	0.08	0.00	2.37	2.37	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
59	3.600	8.20	1.00	0.17	0.08	0.00	2.37	2.37	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
60	3.500	8.20	1.00	0.17	0.08	0.00	2.37	2.37	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
61	3.400	8.20	1.00	0.17	0.08	0.00	2.37	2.37	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
62	3.300	8.20	1.00	0.17	0.08	0.00	2.37	2.37	2.37	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
20 DEG C RATE				0.13		0.00		1.69	0.00		0.00	0.00	0.00	0.00			0.00	7.94		
AVG 20 DEG C RATE			0.90		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
54	4.100	25.40	0.00	20.40	5.40	3.79	8.09	8.09	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.96
55	4.000	25.40	0.00	20.40	5.40	3.72	8.04	8.04	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.88
56	3.900	25.40	0.00	20.40	5.40	3.67	7.99	7.99	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.79
57	3.800	25.40	0.00	20.40	5.40	3.63	7.95	7.95	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.71
58	3.700	25.40	0.00	20.40	5.40	3.60	7.91	7.91	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.63
59	3.600	25.40	0.00	20.40	5.40	3.58	7.87	7.87	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.56
60	3.500	25.40	0.00	20.40	5.40	3.56	7.83	7.83	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.49
61	3.400	25.40	0.00	20.40	5.40	3.55	7.80	7.80	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.42
62	3.300	25.40	0.00	20.40	5.40	3.55	7.77	7.77	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.35

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L
** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 8   SITE 3-LITTLE MARSH B.   02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
63	UPR RCH	0.06137	25.40	0.00	20.40	5.40	3.55	7.77	7.77	0.00	0.00	0.00	0.00	11.90	0.00	3.35

*** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
63	3.30	3.20	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
64	3.20	3.10	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
65	3.10	3.00	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
66	3.00	2.90	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
67	2.90	2.80	0.06137	0.00	0.00534	0.22	0.82	13.99	1149.79	1398.86	11.50	0.00	0.000	0.000	0.005
TOT						1.08			5748.97	6994.31					
AVG					0.00534		0.82	13.99			11.50				
CUM						12.22									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
63	3.200	8.20	1.00	0.17	0.08	0.00	2.30	2.30	2.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
64	3.100	8.20	1.00	0.17	0.08	0.00	2.30	2.30	2.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
65	3.000	8.20	1.00	0.17	0.08	0.00	2.30	2.30	2.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
66	2.900	8.20	1.00	0.17	0.08	0.00	2.30	2.30	2.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
67	2.800	8.20	1.00	0.17	0.08	0.00	2.30	2.30	2.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04

20 DEG C RATE		0.13		0.00	1.64	0.00		0.00	0.00	0.00	0.00	0.00	7.82	
AVG 20 DEG C RATE	0.90		0.07				0.00							0.04

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
63	3.200	25.40	0.00	20.40	5.40	3.56	7.72	7.72	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.28
64	3.100	25.40	0.00	20.40	5.40	3.58	7.67	7.67	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.21
65	3.000	25.40	0.00	20.40	5.40	3.60	7.63	7.63	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.15
66	2.900	25.40	0.00	20.40	5.40	3.61	7.59	7.59	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.09
67	2.800	25.40	0.00	20.40	5.40	3.59	7.52	7.52	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.99

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 9 LITTLE MARSH B.-BEAVER DAM 02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
68	UPR RCH	0.06137	25.40	0.00	20.40	5.40	3.59	7.52	7.52	0.00	0.00	0.00	0.00	11.90	0.00	2.99

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
68	2.80	2.75	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
69	2.75	2.70	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
70	2.70	2.65	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
71	2.65	2.60	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
72	2.60	2.55	0.06137	0.00	0.00157	0.37	1.45	27.09	1959.39	1354.38	39.19	0.00	0.000	0.050	0.002
TOT						1.85			9796.94	6771.88					
AVG					0.00157		1.45	27.09			39.19				
CUM						14.06									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT
		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
68	2.750	8.20	0.54	0.17	0.08	0.00	2.47	2.47	2.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
69	2.700	8.20	0.54	0.17	0.08	0.00	2.47	2.47	2.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
70	2.650	8.20	0.54	0.17	0.08	0.00	2.47	2.47	2.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
71	2.600	8.20	0.54	0.17	0.08	0.00	2.47	2.47	2.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
72	2.550	8.20	0.54	0.17	0.08	0.00	2.47	2.47	2.47	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.14	0.04
20 DEG C RATE				0.13		0.00		1.76	0.00		0.00	0.00	0.00	0.00			0.00	7.71		
AVG 20 DEG C RATE			0.48		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
68	2.750	25.40	0.00	20.40	5.40	3.29	7.27	7.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.73
69	2.700	25.40	0.00	20.39	5.40	3.15	7.10	7.10	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.56
70	2.650	25.40	0.00	20.38	5.40	3.09	6.90	6.90	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.38
71	2.600	25.40	0.00	20.36	5.39	3.22	6.59	6.59	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.17
72	2.550	25.40	0.00	20.29	5.38	3.82	5.99	5.99	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.87

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 10 BEAVER DAM 02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
73	UPR RCH	0.06137	25.40	0.00	20.29	5.38	3.82	5.99	5.99	0.00	0.00	0.00	0.00	11.90	0.00	1.87

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
73	2.55	2.55	0.06137	0.00	0.00342	0.00	0.63	28.52	17.95	28.52	17.95	0.00	0.000	0.500	0.003
TOT						0.00			17.95	28.52					
AVG					0.00342		0.63	28.52			17.95				
CUM						14.07									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT
		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
73	2.549	7.47	608.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 DEG C RATE				0.00		0.00		0.00	0.00		0.00	0.00	0.00	0.00			0.00	7.59		
AVG 20 DEG C RATE			500.00		0.00					0.00									0.00	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
73	2.549	30.70	0.00	20.21	5.37	4.72	5.30	5.30	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.59

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd.
REACH NO. 11 BEAVER DAM-RKM 2.0

MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
74	UPR RCH	0.06137	30.70	0.00	20.21	5.37	4.72	5.30	5.30	0.00	0.00	0.00	0.00	11.90	0.00	1.59

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
74	2.55	2.44	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
75	2.44	2.33	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
76	2.33	2.22	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
77	2.22	2.11	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
78	2.11	2.00	0.06137	0.00	0.00212	0.60	1.07	27.09	3178.46	2979.63	28.90	0.00	0.000	0.900	0.002
TOT						3.00			15892.31	14898.15					
AVG					0.00212		1.07	27.09			28.90				
CUM						17.06									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
74	2.440	7.47	0.80	0.25	0.10	0.00	4.12	4.12	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
75	2.330	7.47	0.80	0.25	0.10	0.00	4.12	4.12	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
76	2.220	7.47	0.80	0.25	0.10	0.00	4.12	4.12	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
77	2.110	7.47	0.80	0.25	0.10	0.00	4.12	4.12	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
78	2.000	7.47	0.80	0.25	0.10	0.00	4.12	4.12	4.12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
20 DEG C RATE				0.15		0.00		2.10	0.00		0.00	0.00	0.00	0.00			0.00	7.44		
AVG 20 DEG C RATE			0.66		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
74	2.440	30.70	0.00	20.19	5.36	4.25	5.08	5.08	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.51
75	2.330	30.70	0.00	20.13	5.35	3.65	4.75	4.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.37
76	2.220	30.70	0.00	20.07	5.34	3.25	4.46	4.46	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.24

77	2.110	30.70	0.00	19.98	5.32	3.03	4.21	4.21	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.13
78	2.000	30.70	0.00	19.87	5.30	2.99	3.99	3.99	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.02

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 12   RKM 2.0-UT LDB   02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

*** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
79	UPR RCH	0.06137	30.70	0.00	19.87	5.30	2.99	3.99	3.99	0.00	0.00	0.00	0.00	11.90	0.00	1.02

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
79	2.00	1.90	0.06137	0.00	0.00187	0.62	1.17	28.09	3277.06	2808.75	32.77	0.00	0.000	0.900	0.002
80	1.90	1.80	0.06137	0.00	0.00187	0.62	1.17	28.09	3277.06	2808.75	32.77	0.00	0.000	0.900	0.002
81	1.80	1.70	0.06137	0.00	0.00187	0.62	1.17	28.09	3277.06	2808.75	32.77	0.00	0.000	0.900	0.002
82	1.70	1.60	0.06137	0.00	0.00187	0.62	1.17	28.09	3277.06	2808.75	32.77	0.00	0.000	0.900	0.002
TOT						2.47			13108.24	11235.02					
AVG					0.00187		1.17	28.09			32.77				
CUM						19.54									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
79	1.900	7.47	0.73	0.25	0.10	0.00	2.79	2.79	2.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
80	1.800	7.47	0.73	0.25	0.10	0.00	2.79	2.79	2.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
81	1.700	7.47	0.73	0.25	0.10	0.00	2.79	2.79	2.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
82	1.600	7.47	0.73	0.25	0.10	0.00	2.79	2.79	2.79	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05

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20 DEG C RATE                   0.15          0.00          1.42    0.00             0.00   0.00     0.00   0.00                   0.00    7.30
AVG 20 DEG C RATE       0.60          0.08                                   0.00                                                                 0.04
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* g/sq m/d   ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
79	1.900	30.70	0.00	19.75	5.28	3.16	3.82	3.82	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.93
80	1.800	30.70	0.00	19.61	5.25	3.39	3.67	3.67	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.85
81	1.700	30.70	0.00	19.45	5.22	3.73	3.54	3.54	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.78
82	1.600	30.70	0.00	19.25	5.19	4.23	3.41	3.41	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.72

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L
** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 13   UT LDB-NATURAL DIV. TO CAL.R.   02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
83	UPR RCH	0.06137	30.70	0.00	19.25	5.19	4.23	3.41	3.41	0.00	0.00	0.00	0.00	11.90	0.00	0.72

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
83	1.60	1.50	0.06137	0.00	0.00166	0.70	1.30	28.59	3707.03	2858.75	37.07	0.00	0.000	0.950	0.002
84	1.50	1.40	0.06137	0.00	0.00166	0.70	1.30	28.59	3707.03	2858.75	37.07	0.00	0.000	0.950	0.002
85	1.40	1.30	0.06137	0.00	0.00166	0.70	1.30	28.59	3707.03	2858.75	37.07	0.00	0.000	0.950	0.002
TOT						2.10			11121.10	8576.26					
AVG					0.00166		1.30	28.59			37.07				
CUM						21.63									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM ENDING SAT REAER CBOD CBOD ANBOD BKGD FULL CORR ORGN ORGN NH3 NH3 DENIT PO4 ALG MAC COLI NCM
NCM

NO.	DIST	D.O.	RATE	DECAY	SETT	DECAY	SOD	SOD	SOD	DECAY	SETT	DECAY	SRCE	RATE	SRCE	PROD	PROD	DECAY	DECAY	SETT
		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
83	1.500	7.47	2.16	0.25	0.10	0.00	2.71	2.71	2.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
84	1.400	7.47	2.16	0.25	0.10	0.00	2.71	2.71	2.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
85	1.300	7.47	2.16	0.25	0.10	0.00	2.71	2.71	2.71	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.20	0.05
20 DEG C RATE				0.15		0.00		1.38	0.00		0.00	0.00		0.00			0.00	7.15		
AVG 20 DEG C RATE			1.77		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
83	1.500	30.70	0.00	19.03	5.15	4.90	3.28	3.28	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.66
84	1.400	30.70	0.00	18.79	5.10	5.32	3.17	3.17	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.62
85	1.300	30.70	0.00	18.51	5.05	5.61	3.04	3.04	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.58

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
REACH NO. 14 NAT. DIV. TO CAL.R.-RKM RKM 0.8 02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
86	UPR RCH	0.06137	30.70	0.00	18.51	5.05	5.61	3.04	3.04	0.00	0.00	0.00	0.00	11.90	0.00	0.58

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
86	1.30	1.20	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002
87	1.20	1.10	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002
88	1.10	1.00	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002

89	1.00	0.90	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002
90	0.90	0.80	0.06137	0.00	0.00161	0.72	1.31	29.09	3800.96	2908.75	38.01	0.00	0.000	1.000	0.002
TOT						3.58			19004.79	14543.77					
AVG					0.00161		1.31	29.09			38.01				
CUM						25.22									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
86	1.200	7.47	2.14	0.25	0.10	0.00	2.49	2.49	2.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
87	1.100	7.47	2.14	0.25	0.10	0.00	2.49	2.49	2.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
88	1.000	7.47	2.14	0.25	0.10	0.00	2.49	2.49	2.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
89	0.900	7.47	2.14	0.25	0.10	0.00	2.49	2.49	2.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
90	0.800	7.47	2.14	0.25	0.10	0.00	2.49	2.49	2.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
20 DEG C RATE				0.15		0.00		1.27	0.00		0.00	0.00	0.00	0.00			0.00	7.02		
AVG 20 DEG C RATE			1.76		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
86	1.200	30.70	0.00	18.19	4.99	5.82	2.91	2.91	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.54
87	1.100	30.70	0.00	17.83	4.92	5.96	2.80	2.80	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.51
88	1.000	30.70	0.00	17.42	4.85	6.06	2.70	2.70	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.48
89	0.900	30.70	0.00	16.94	4.76	6.13	2.62	2.62	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.45
90	0.800	30.70	0.00	16.38	4.65	6.19	2.54	2.54	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.43

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
91	UPR RCH	0.06137	30.70	0.00	16.38	4.65	6.19	2.54	2.54	0.00	0.00	0.00	0.00	11.90	0.00	0.43

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
91	0.80	0.70	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
92	0.70	0.60	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
93	0.60	0.50	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
94	0.50	0.40	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
95	0.40	0.30	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
96	0.30	0.20	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
97	0.20	0.10	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
98	0.10	0.00	0.06137	0.00	0.00158	0.73	1.32	29.59	3895.88	2958.75	38.96	0.00	0.000	1.000	0.002
TOT						5.88			31167.05	23670.03					
AVG					0.00158		1.32	29.59			38.96				
CUM						31.10									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
91	0.700	7.47	2.13	0.25	0.10	0.00	2.35	2.35	2.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
92	0.600	7.47	2.13	0.25	0.10	0.00	2.35	2.35	2.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
93	0.500	7.47	2.13	0.25	0.10	0.00	2.35	2.35	2.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
94	0.400	7.47	2.13	0.25	0.10	0.00	2.35	2.35	2.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
95	0.300	7.47	2.13	0.25	0.10	0.00	2.35	2.35	2.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
96	0.200	7.47	2.13	0.25	0.10	0.00	2.35	2.35	2.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
97	0.100	7.47	2.13	0.25	0.10	0.00	2.35	2.35	2.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.05
98	0.000	7.47	2.13	0.25	0.10	0.00	2.35	2.35	2.35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	

0.05

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20 DEG C RATE                 0.15          0.00         1.20   0.00           0.00  0.00    0.00  0.00                0.00   6.88
AVG 20 DEG C RATE     1.75          0.08                              0.00                                                        0.04
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* g/sq m/d   ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
91	0.700	30.70	0.00	15.74	4.53	6.24	2.47	2.47	0.00	0.00	0.00	0.00	0.01	10.90	0.00	0.00	0.40
92	0.600	30.70	0.00	15.00	4.40	6.29	2.44	2.44	0.00	0.00	0.01	0.01	0.03	9.91	0.00	0.00	0.39
93	0.500	30.70	0.00	14.15	4.24	6.33	2.44	2.44	0.00	0.00	0.01	0.01	0.04	8.91	0.00	0.00	0.37
94	0.400	30.70	0.00	13.17	4.06	6.38	2.47	2.47	0.00	0.00	0.01	0.01	0.06	7.91	0.00	0.00	0.36
95	0.300	30.70	0.00	12.03	3.85	6.45	2.55	2.55	0.00	0.00	0.02	0.02	0.07	6.92	0.00	0.00	0.35
96	0.200	30.70	0.00	10.71	3.60	6.57	2.69	2.69	0.00	0.00	0.02	0.02	0.09	5.92	0.00	0.00	0.35
97	0.100	30.70	0.00	9.19	3.32	6.78	2.91	2.91	0.00	0.00	0.03	0.03	0.10	4.93	0.00	0.00	0.35
98	0.000	30.70	0.00	7.42	2.99	7.14	3.21	3.21	0.00	0.00	0.03	0.03	0.12	3.93	0.00	0.00	0.35

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

STREAM SUMMARY
Marsh @ Welcome Rd.

MARSH BAYOU WATERSHED SUMMER PROJECTION MODEL #2; MOS NOT APPLIE
02/20/01;SUMMER PROJ;70% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER

TRAVEL TIME = 31.10 DAYS

MAXIMUM EFFLUENT = 0.00 PERCENT

FLOW	=	0.06137	TO	0.06137	cms
DISPERSION	=	0.0000	TO	1.0000	sq m/s
VELOCITY	=	0.00157	TO	0.01147	m/s
DEPTH	=	0.63	TO	1.45	m
WIDTH	=	5.63	TO	29.59	m
BOD DECAY	=	0.00	TO	0.25	per day
NH3 DECAY	=	0.00	TO	0.00	per day
SDMNT OXYGEN DMND	=	0.00	TO	4.12	g/sq m/d
NH3 SOURCE	=	0.00	TO	0.00	g/sq m/d
REAERATION	=	0.54	TO	608.73	per day
BOD SETTLING	=	0.00	TO	0.10	per day
ORGN DECAY	=	0.00	TO	0.00	per day
ORGN SETTLING	=	0.00	TO	0.00	per day
TEMPERATURE	=	25.40	TO	30.70	deg C
DISSOLVED OXYGEN	=	2.99	TO	7.83	mg/L

.....EXECUTION COMPLETED

LA-QUAL Version 4.10 Run at 00:19 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
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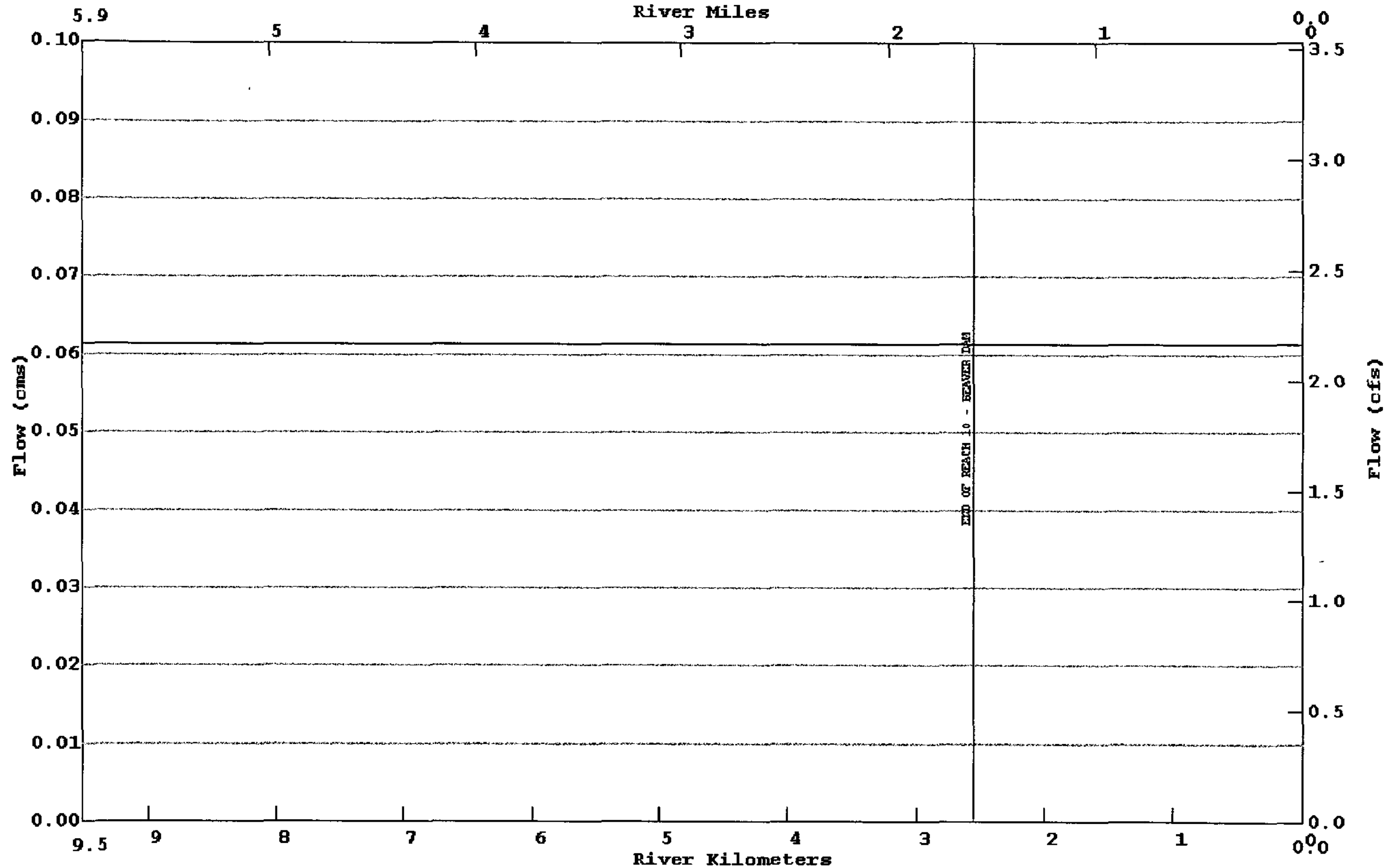
Marsh Bayou: Welcome Rd.-Calcasieu R.



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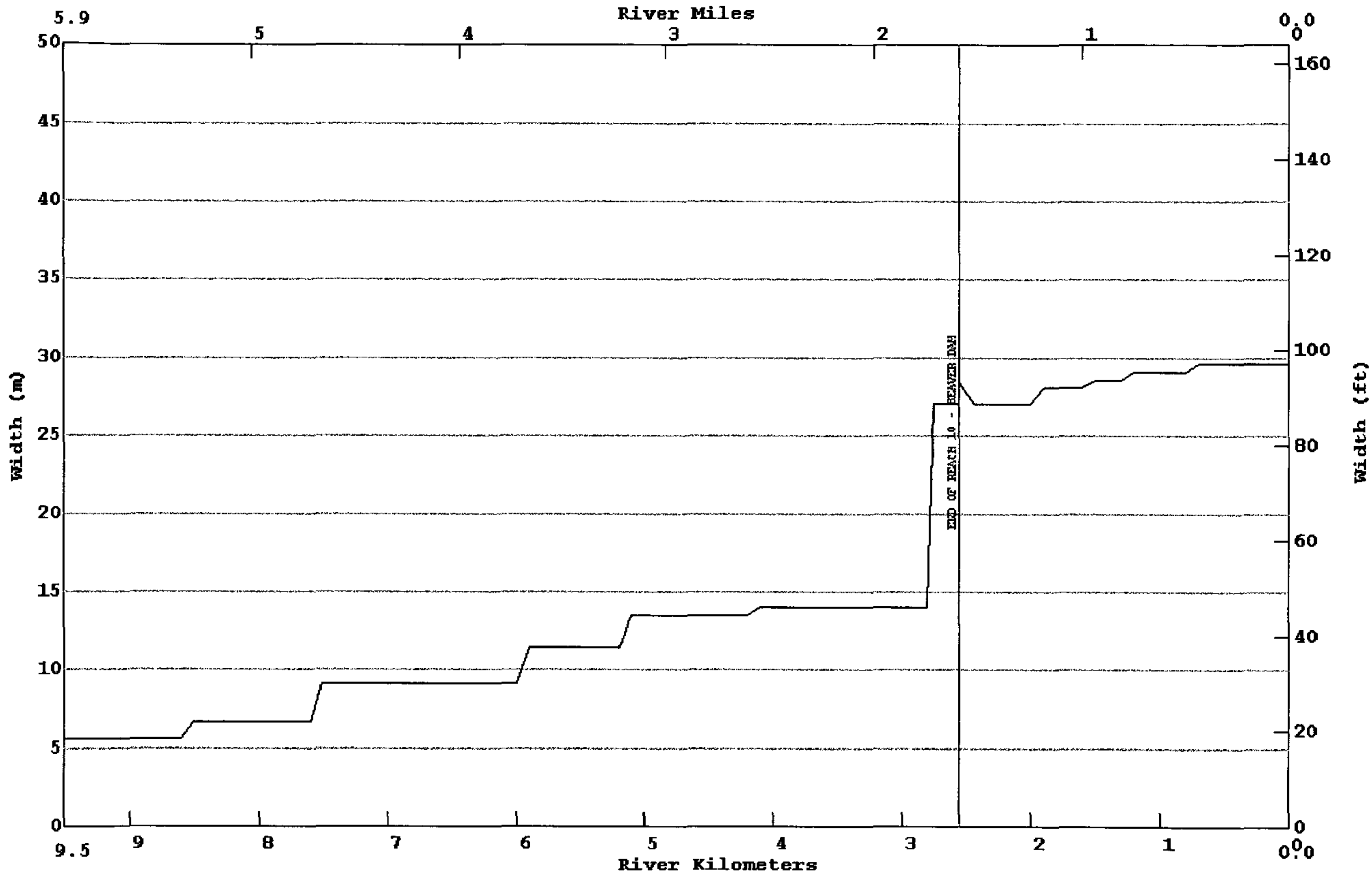
Marsh Bayou: Welcome Rd.-Calcasieu R.



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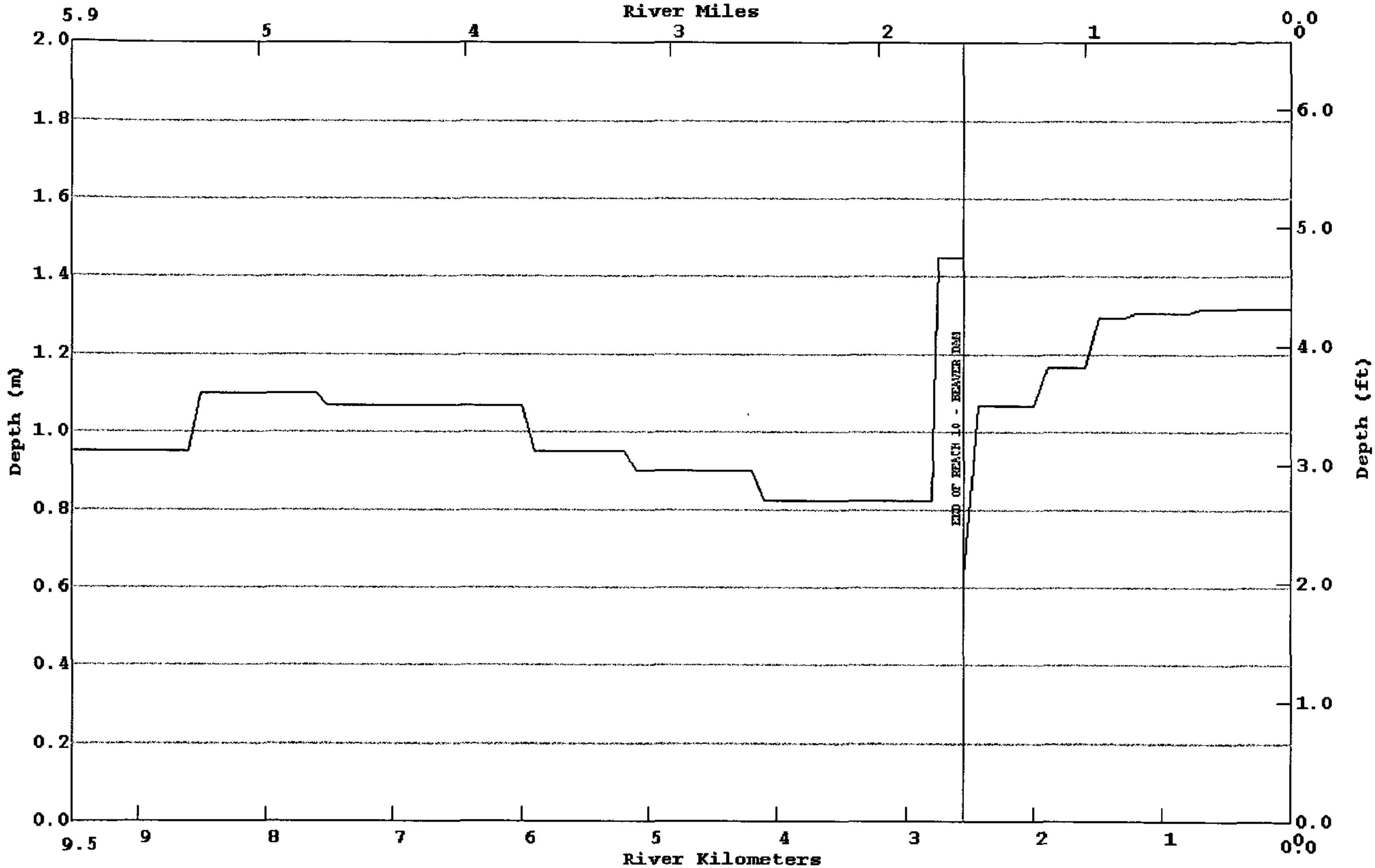
Marsh Bayou: Welcome Rd.-Calcasieu R.



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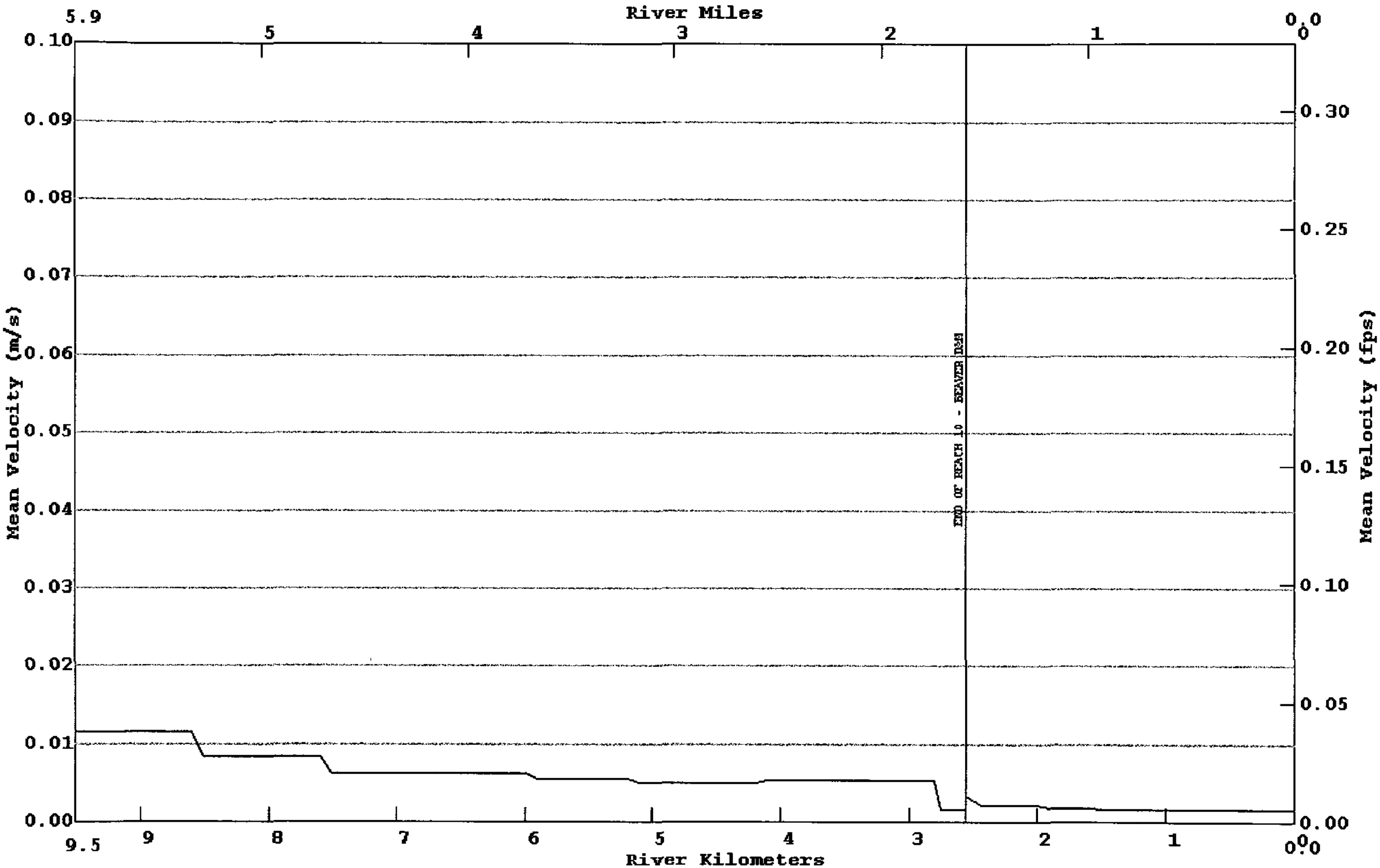
Marsh Bayou: Welcome Rd.-Calcasieu R.



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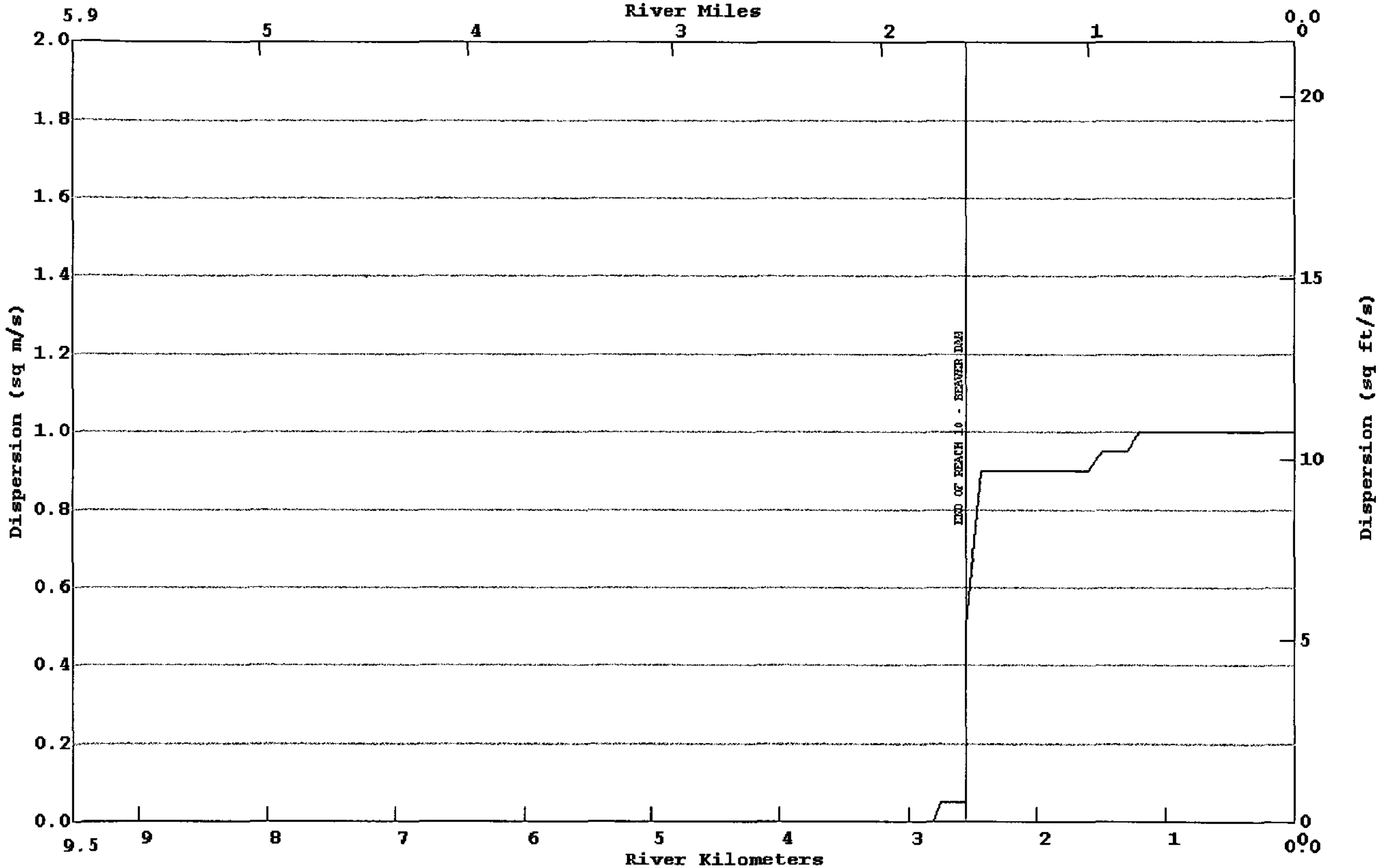
Marsh Bayou: Welcome Rd.-Calcasieu R.



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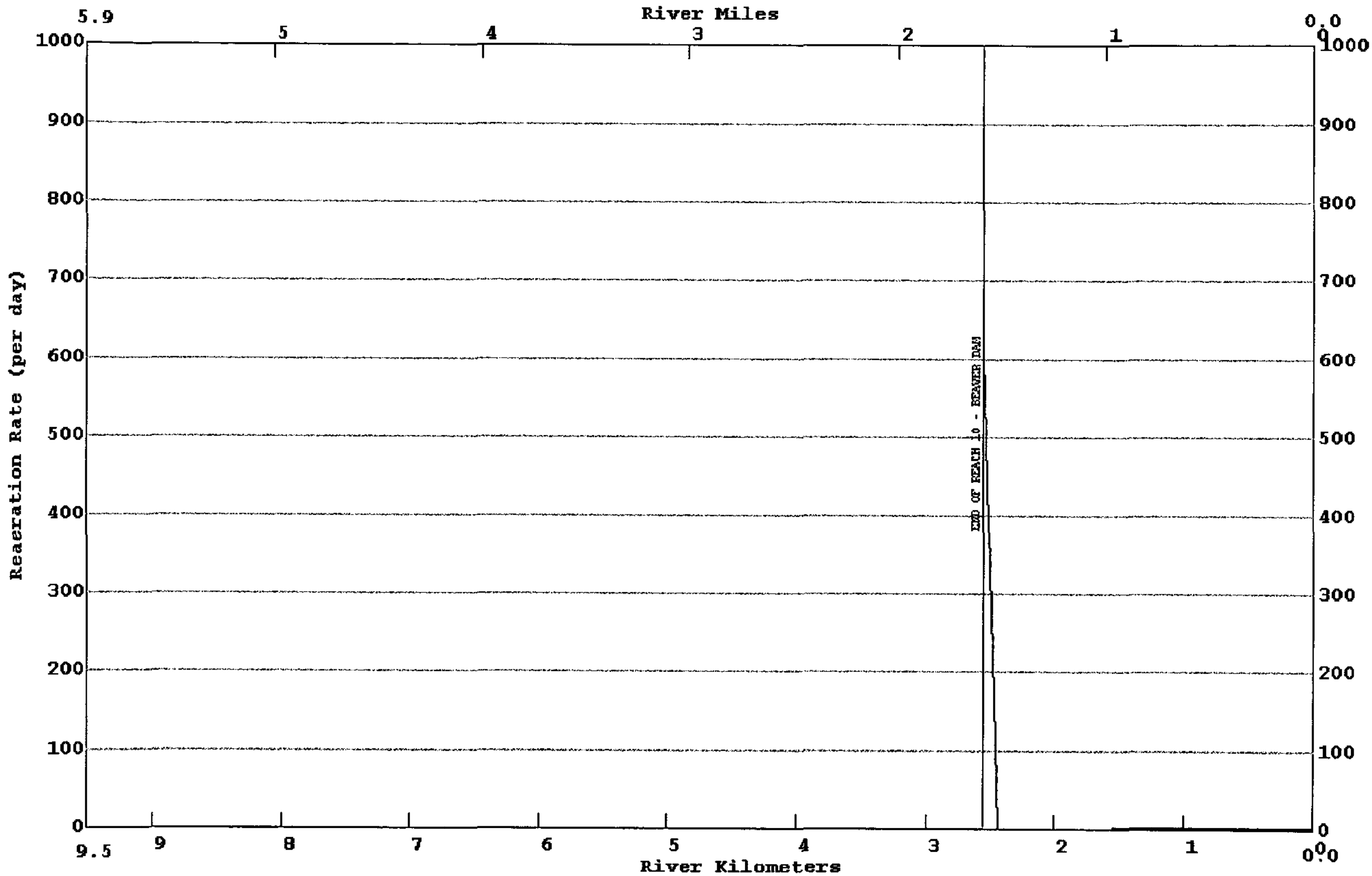
Marsh Bayou: Welcome Rd.-Calcasieu R.



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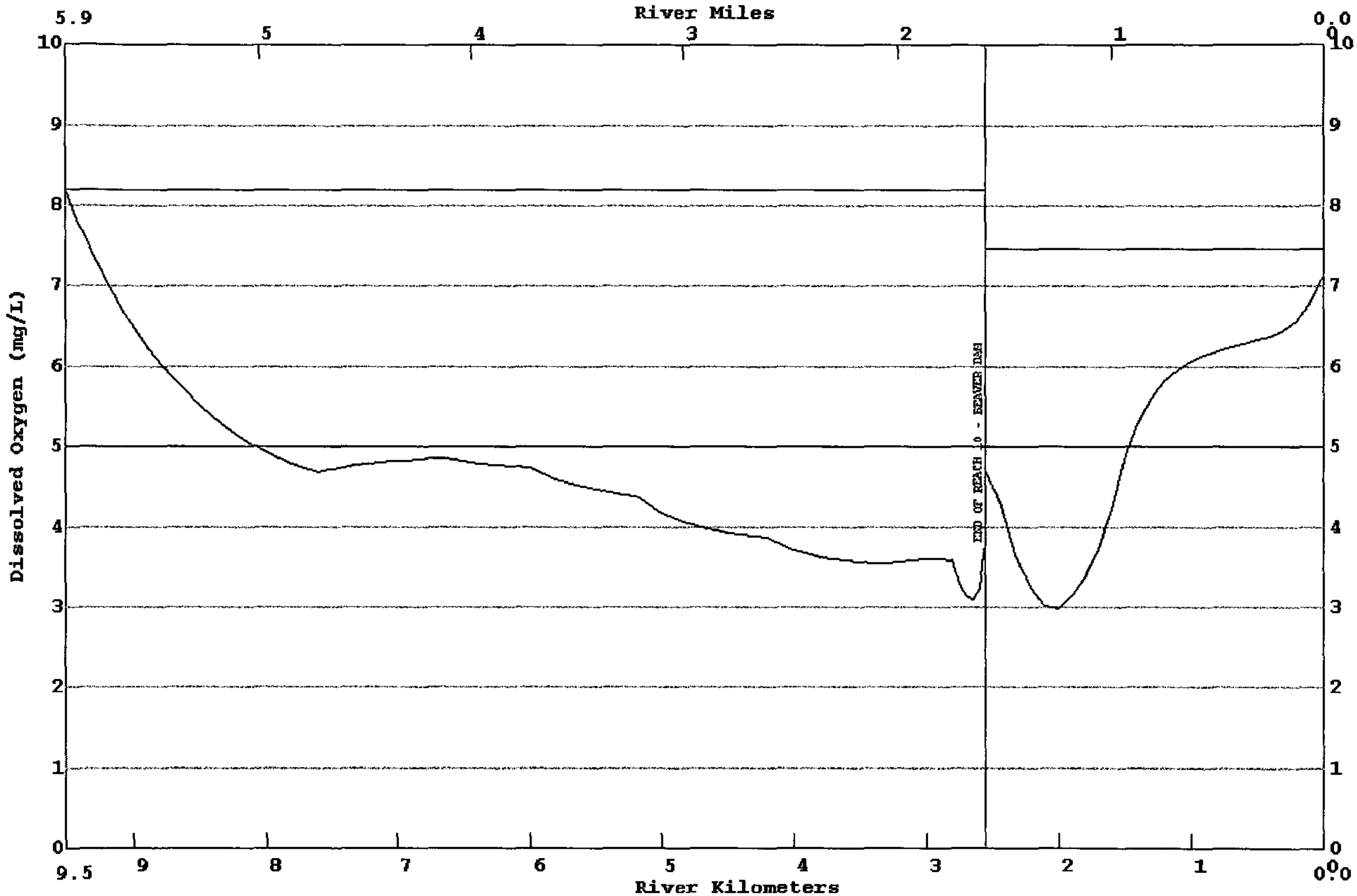
Marsh Bayou: Welcome Rd.-Calcasieu R.



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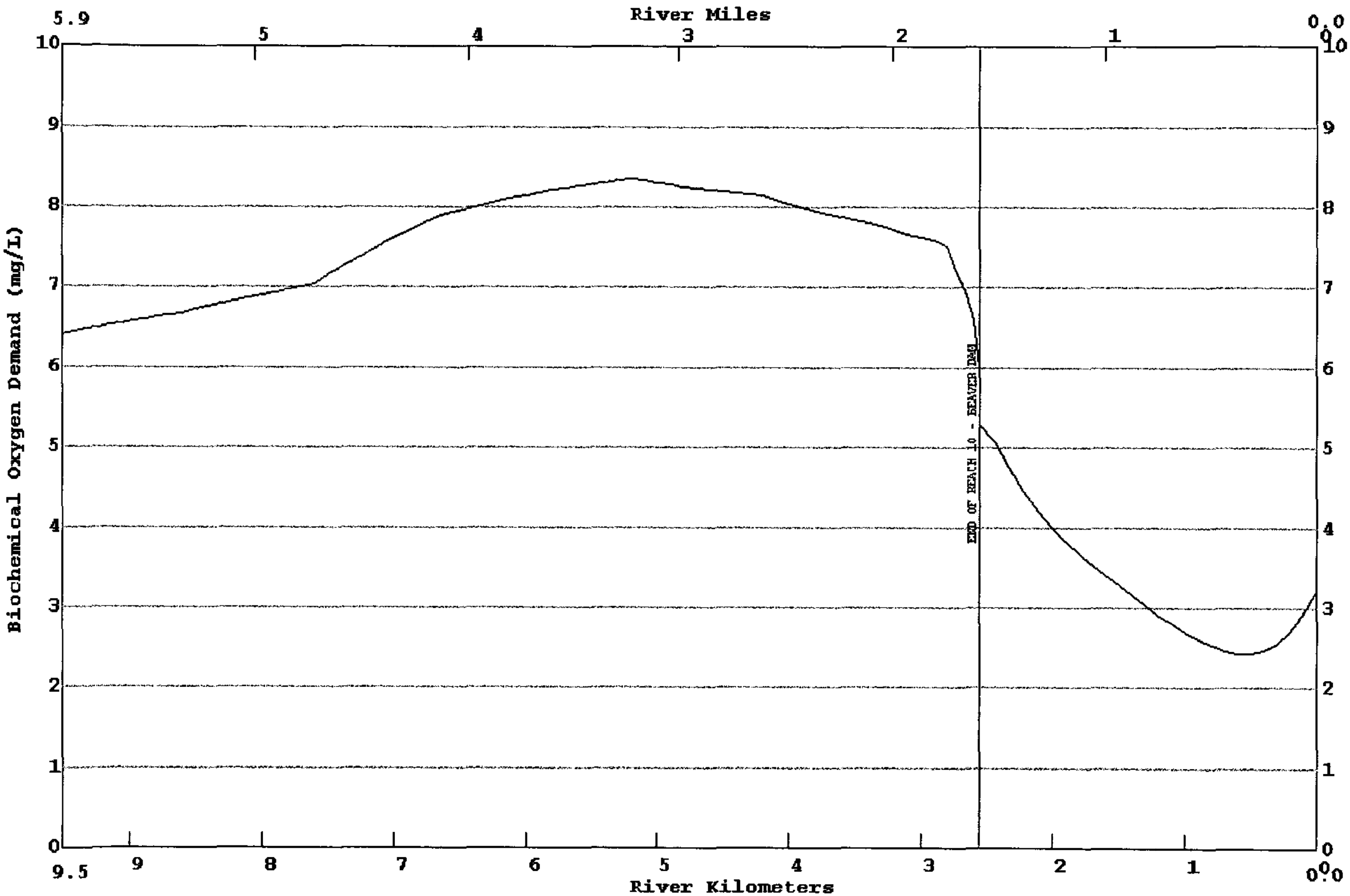
Marsh Bayou: Welcome Rd.-Calcasieu R.



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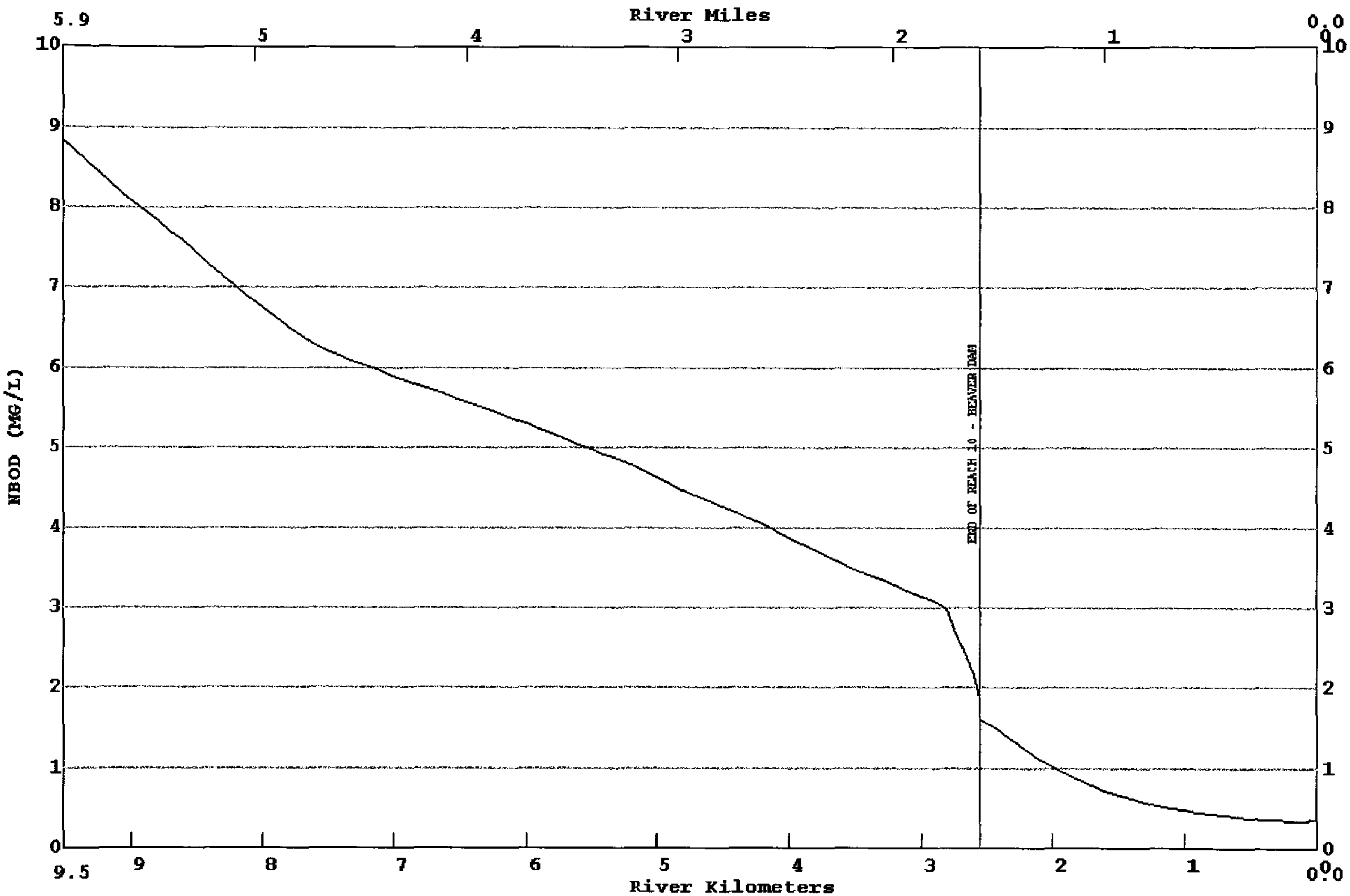

LA-QUAL Version 4.10 Run at 00:19 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
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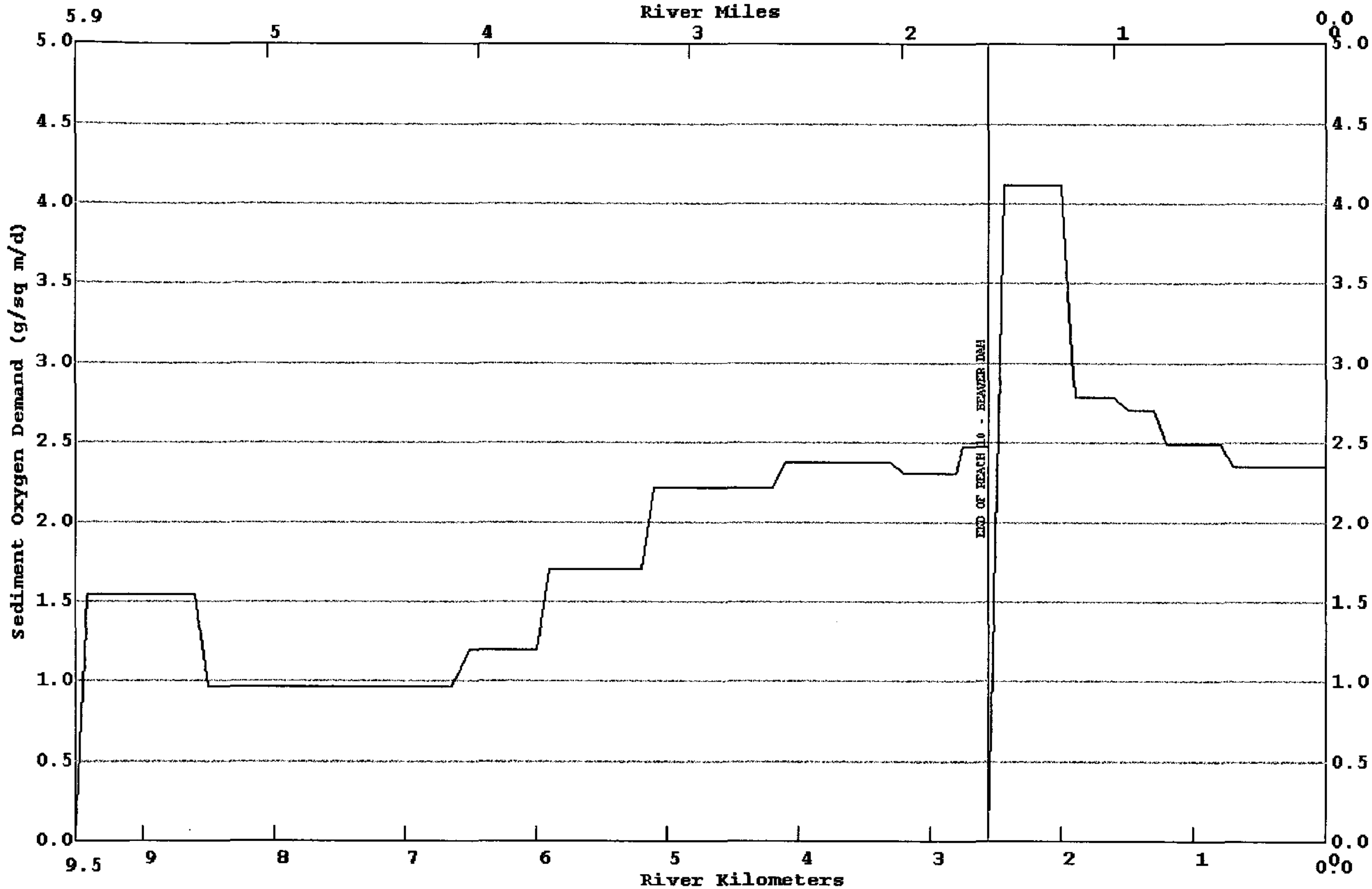
Marsh Bayou: Welcome Rd.-Calcasieu R.



Marsh Bayou Summer Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 9, Advective Hydraulic Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Width "a"	Unitless	4.450	Determined by Best Professional Judgement (BPJ) and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	4.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.400	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
2	Marsh Bayou, RKM 8.6-UT LDB	Width "a"	Unitless	4.450	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.550	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
3	Marsh Bayou, UT (LDB) to Site 4	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	9.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.650	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
6	Marsh Bayou, RKM 5.2-UT LDB	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	11.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration

		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.600	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
7	Marsh Bayou, UT (LDB)-Site 3	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.00020	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
8	Marsh Bayou, Site 3-Little Marsh Bayou	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.200	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.760	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
10	Marsh Bayou, Beaver Dam	Width "a"	Unitless	32.790	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.050	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.3047	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
11	Marsh Bayou, Beaver Dam-RKM 2.0	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
12	Marsh Bayou, RKM 2.0-UT LDB	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.800	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps

		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.930	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.940	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.950	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113

Marsh Bayou Summer Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 10, Dispersive Hydraulic Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
2	Marsh Bayou, RKM 8.6-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
3	Marsh Bayou, UT (LDB) to Site 4	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
6	Marsh Bayou, RKM 5.2-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
7	Marsh Bayou, UT (LDB)-Site 3	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

8	Marsh Bayou, Site 3-Little Marsh Bayou	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.05	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
10	Marsh Bayou, Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.50	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
11	Marsh Bayou, Beaver Dam-RKM 2.0	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
12	Marsh Bayou, RKM 2.0-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.95	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

Marsh Bayou Summer Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 11, INITIAL CONDITIONS					
Reach #	NAME	Initial Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
2	Marsh Bayou, RKM 8.6-UT LDB	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
3	Marsh Bayou, UT (LDB) to Site 4	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839,
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		

5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
6	Marsh Bayou, RKM 5.2-UT LDB	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
7	Marsh Bayou, UT (LDB)-Site 3	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
8	Marsh Bayou, Site 3-Little Marsh Bayou	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		

		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
10	Marsh Bayou, Beaver Dam	Temperature	°Celcius	25.400	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	8.200	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
11	Marsh Bayou, Beaver Dam-RKM 2.0	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
12	Marsh Bayou, RKM 2.0-UT LDB	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		

		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Temperature	°Celcius	30.700	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	7.470	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.900	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		

Marsh Bayou Summer Water Quality Model Input Description

70% Reduction of the Estima ter Quality Model Input Description

DATA TYPE 12, Reaeration, Sediment Oxygen Demand and BOD Coeff.

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.10	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
2	Marsh Bayou, RKM 8.6-UT LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_{+C139} "C"	Unitless		
		Background SOD	g/m^2-day	0.69	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
3	Marsh Bayou, UT (LDB) to Site 4	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.69	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		

		Background SOD	g/m^2-day	0.85	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.21	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
6	Marsh Bayou, RKM 5.2-UT LDB	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.58	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
7	Marsh Bayou, UT (LDB)-Site 3	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.69	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		

		Background SOD	g/m^2-day	1.64	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.76	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
10	Marsh Bayou, Beaver Dam	K2 option	Unitless	1.00	$K_2 = a$
		K2 "A"	Unitless	500.00	Manually input reaeration value used for Reach 10 used to simulate the beaver dam. The value was determined by calibration.
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Aerobic BOD decay	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		BOD Settling rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	2.10	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
12	Marsh Bayou, RKM 2.0-UT LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		

		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.42	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	K2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.38	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	K2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.27	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	K_2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K_2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.20	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		

		Anaerobic BOD decay	1/day			

Marsh Bayou Summer Water Quality Model Input Description

70% Reduction of the Estimated M ter Quality Model Input Description

DATA TYPE 15, Coliform and Nonconservative Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
2	Marsh Bayou, RKM 8.6-UT LDB	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
3	Marsh Bayou, UT (LDB) to Site 4	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
6	Marsh Bayou, RKM 5.2-UT LDB	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
7	Marsh Bayou, UT (LDB)-Site 3	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
8	Marsh Bayou, Site 3-Little Marsh Bayou	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
10	Marsh Bayou, Beaver Dam	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Settled nonconservative material conversion to sediment oxygen demand			
11	Marsh Bayou, Beaver Dam-RKM 2.0	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

12	Marsh Bayou, RKM 2.0-UT LDB	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)

		Settled nonconservative material conversion to sediment oxygen demand			
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

Marsh Bayou Summer Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 19, Nonpoint Source Data

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	BOD	kg/day	7.76	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	3.41	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
2	Marsh Bayou, RKM 8.6-UT LDB	BOD	kg/day	11.80	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	5.53	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
3	Marsh Bayou, UT (LDB) to Site 4	BOD	kg/day	18.20	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	5.11	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	BOD	kg/day	11.37	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	3.13	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	BOD	kg/day	15.27	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	3.82	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		

6	Marsh Bayou, RKM 5.2-UT LDB	BOD	kg/day	18.47	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	3.97	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
7	Marsh Bayou, UT (LDB)-Site 3	BOD	kg/day	18.19	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	3.20	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	BOD	kg/day	9.65	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.61	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	BOD	kg/day	13.01	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.07	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
10	Marsh Bayou, Beaver Dam	BOD	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Dissolved O_2	kg/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	BOD	kg/day	13.16	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		

		Nonconservative matl.	kg/day	0.73	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
12	Marsh Bayou, RKM 2.0-UT LDB	BOD	kg/day	13.00	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.65	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	BOD	kg/day	11.00	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.63	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	BOD	kg/day	13.44	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.77	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	BOD	kg/day	15.86	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.91	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		

Marsh Bayou Summer Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 20, Headwater Data for Flow, Temperature, Salinity, and Conservatives

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou @ Welcome Road	Element # of input	#	1	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater name		Marsh Bayou @ Welcome Road	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater flow	cms	0.06137	Summer 7Q10 value for Marsh Bayou estimated by multiplying the average of the summer 7Q10/drainage area ratios for Bundick Crk. near Dry Crk. and Bundick Crk. near DeRidder by the drainage area of Marsh Bayou @ Welcome Rd.
		Temperature	*°Celcius*	25.4	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Conservative Matl. I	*mg/l*	20.4	*Marsh Bayou Survey at Welcome Road (Site 5)*
		Conservative Matl. II	mg/l	5.4	Marsh Bayou Survey at Welcome Road (Site 5)

Marsh Bayou Summer Water Quality Model Input Description 70% Reduction of the Estimated Man-Made Loads					
DATA TYPE 21, Headwater Data for DO, BOD, and Nitrogen					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Dissolved O_2	mg/l	8.2	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		BOD	mg/l	6.41	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the load
		Org.- N	mg/l		
		NH_3-N	mg/l		
		NO_{2+3}-N	mg/l		

Marsh Bayou Summer Water Quality Model Input Description 70% Reduction of the Estimated Man-Made Loads					
DATA TYPE 22, Headwater Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Phosphorus	mg/L		
		Chlorophyll a	ug/L	11.9	Marsh Bayou Survey at Welcome Road (Site 5)
		Coliform	#/100 mL		
		Nonconservative Material	mg/l	8.84	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the load

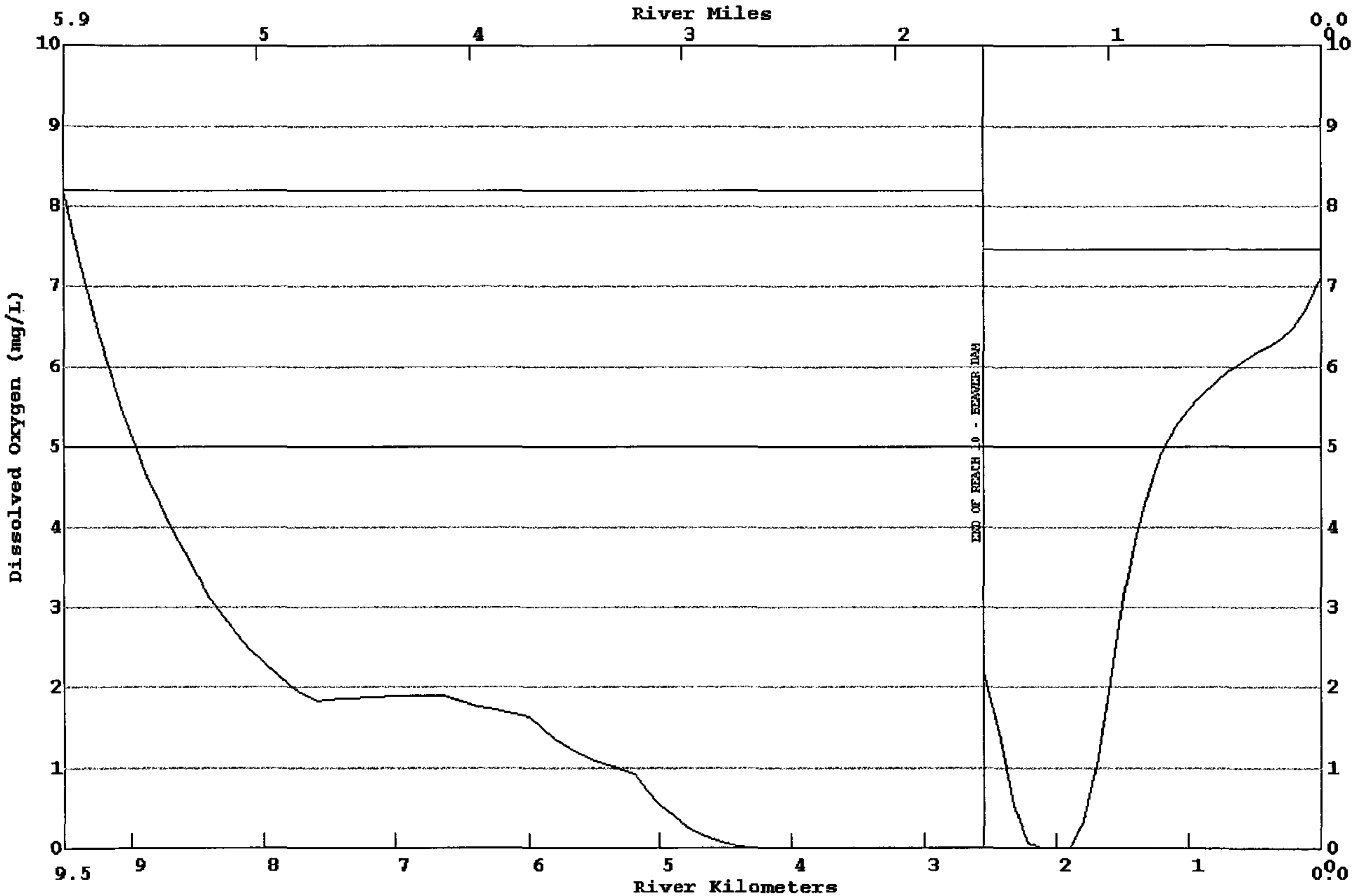
Marsh Bayou Summer Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

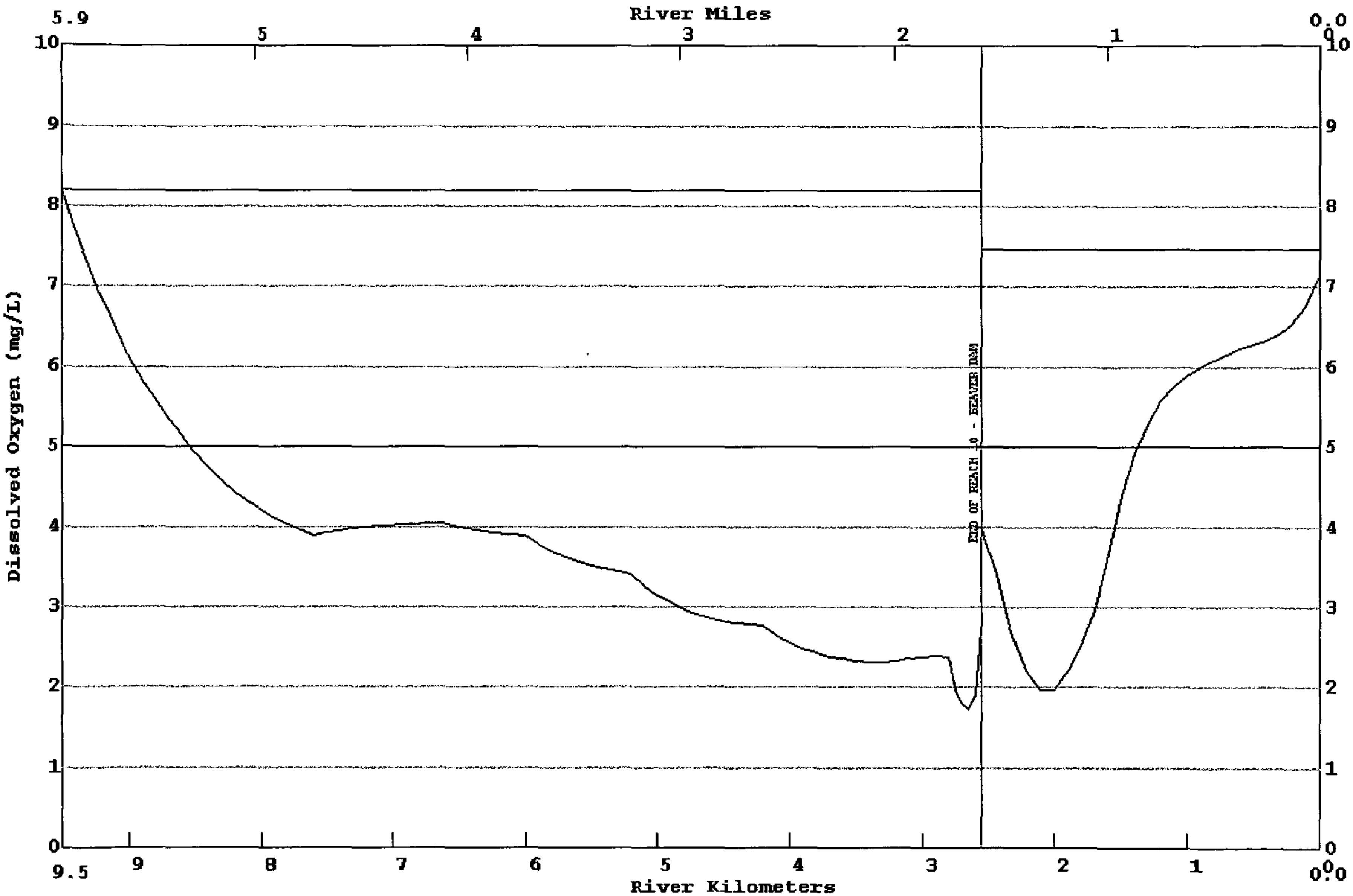
DATA TYPE 27, Lower Boundary Conditions

Reach #	NAME	Parameter	Units	Value	Source/Justification
	Calcasieu River	Temperature	°Celcius	30.70	Summer 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt	0.00	
		Conservative Matl. I	mg/l	6.40	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Conservative Matl. II	mg/l	2.80	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Dissolved O_2	mg/l	7.47	90 percent of the disssolved oxygen saturation concentration based upon the summer 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		BOD	mg/l	3.42	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Org.- N	mg/l	0.22	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		NH_3-N	mg/l	0.00	
		NO_{2+3}-N	mg/l	0.03	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Phosphorus	mg/l	0.12	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Chlorophyl A	mg/l	3.93	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Coliform	mg/l		
		Nonconservative Material	mg/L	0.36	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)

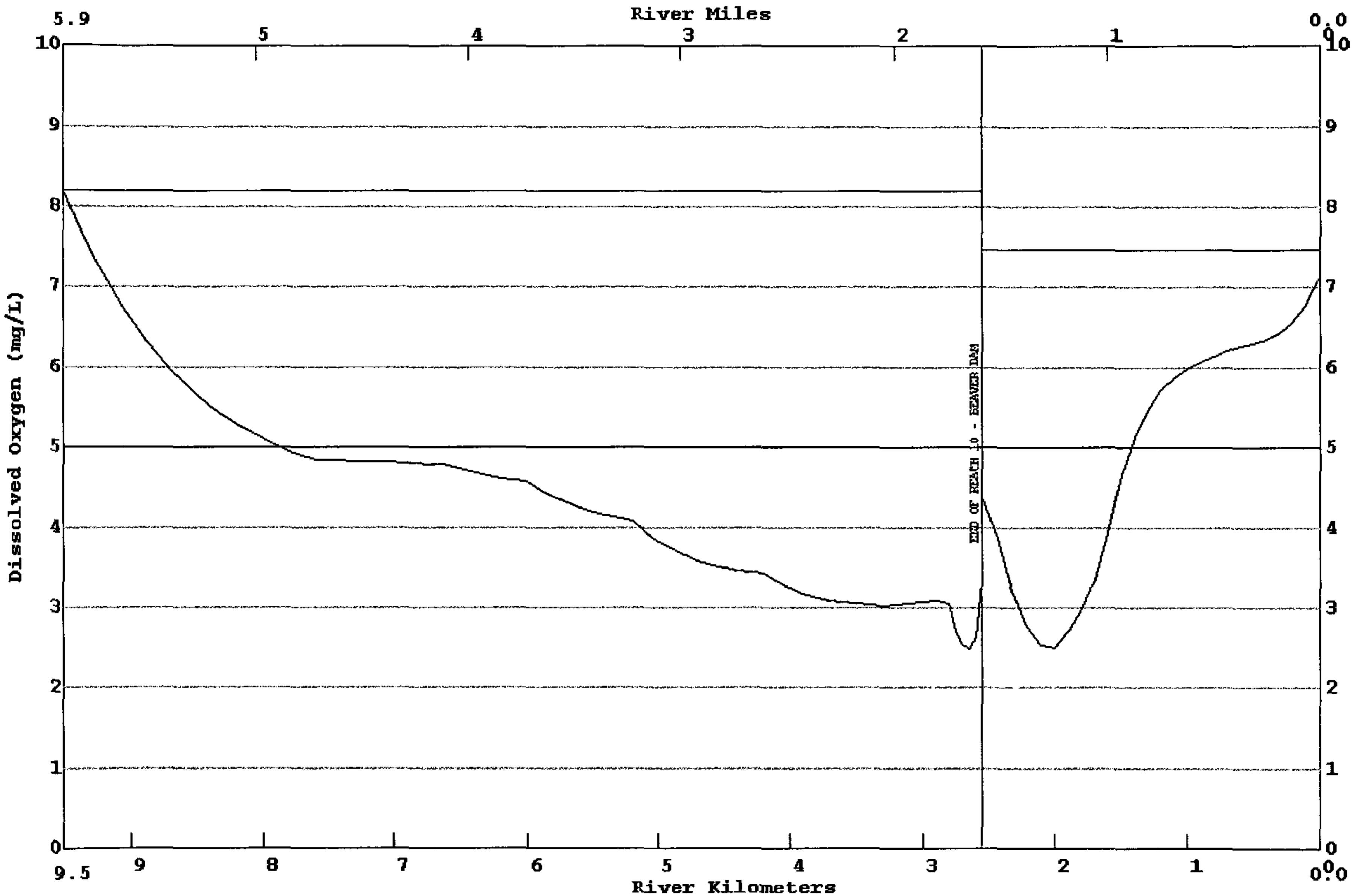
LA-QUAL Version 4.10 Run at 01:19 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/20/01;SUMMER PROJ;0% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER, min= 0.00 max= 8.20
Marsh Bayou: Welcome Rd.-Calcasieu R.



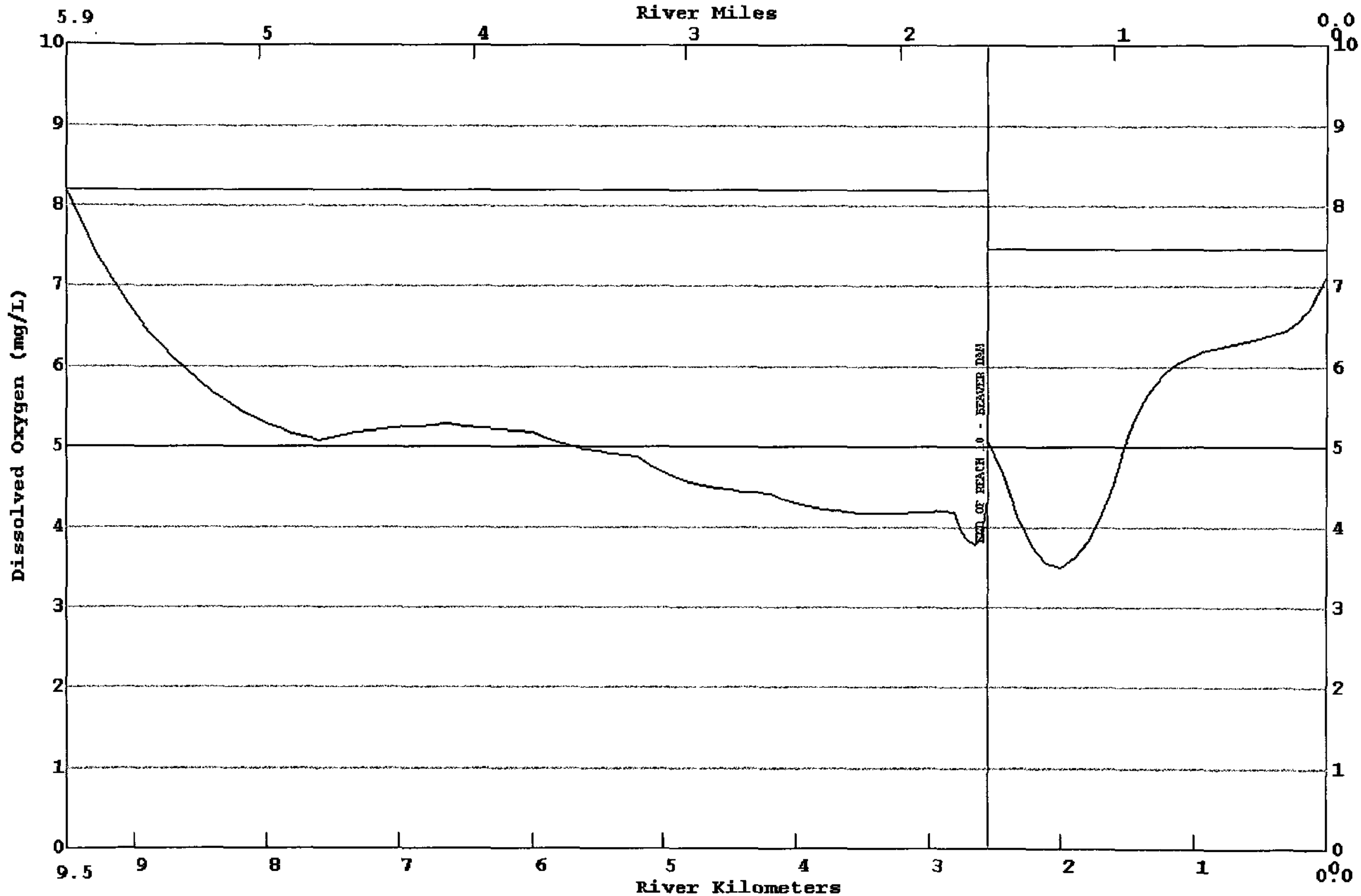
LA-QUAL Version 4.10 Run at 01:20 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/20/01;SUMMER PROJ;50% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER min= 1.72 max= 8.20
Marsh Bayou: Welcome Rd.-Calcasieu R.



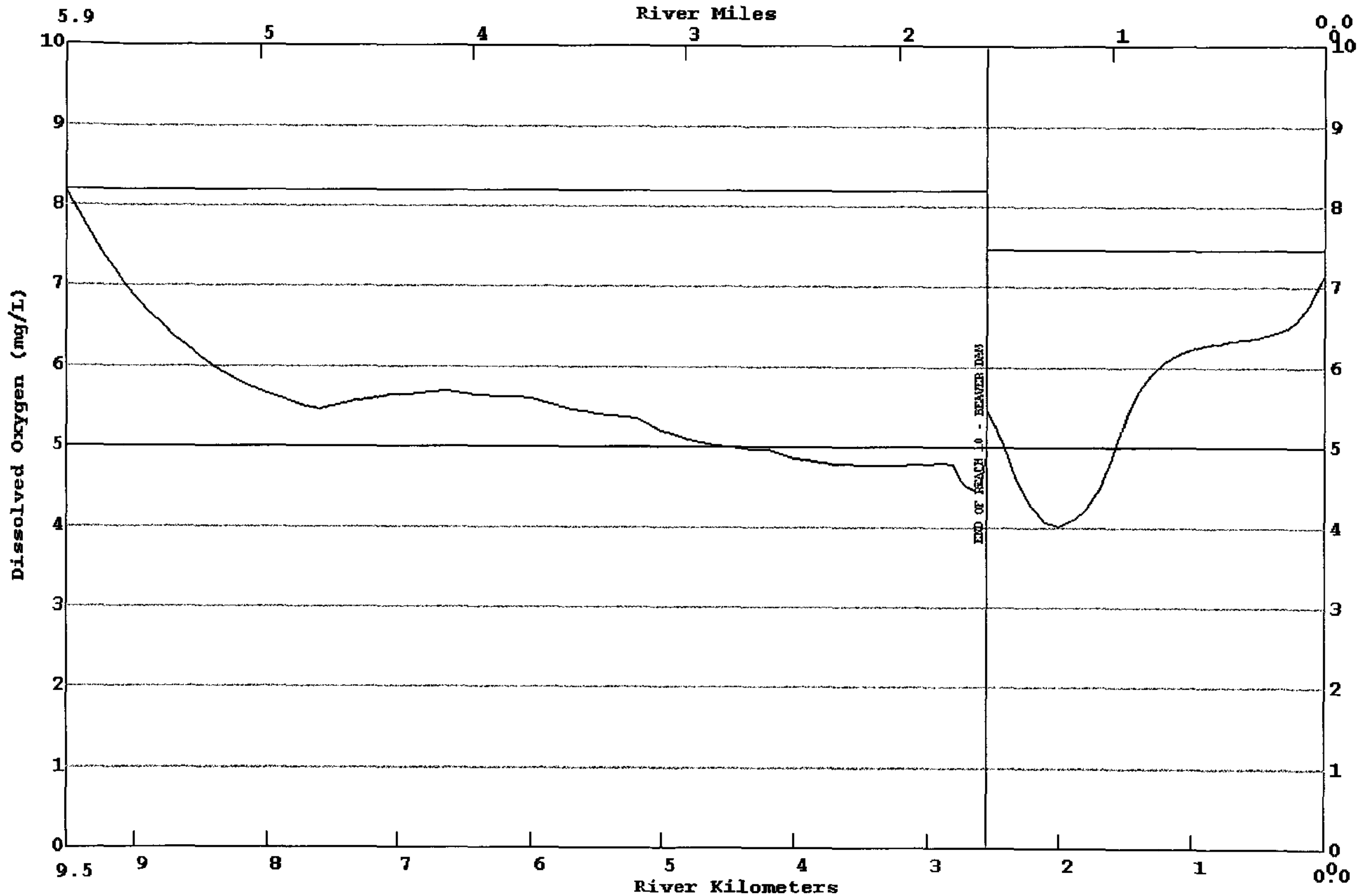
LA-QUAL Version 4.10 Run at 01:20 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/20/01;SUMMER PROJ;60% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER min= 2.48 max= 8.20
Marsh Bayou: Welcome Rd.-Calcasieu R.



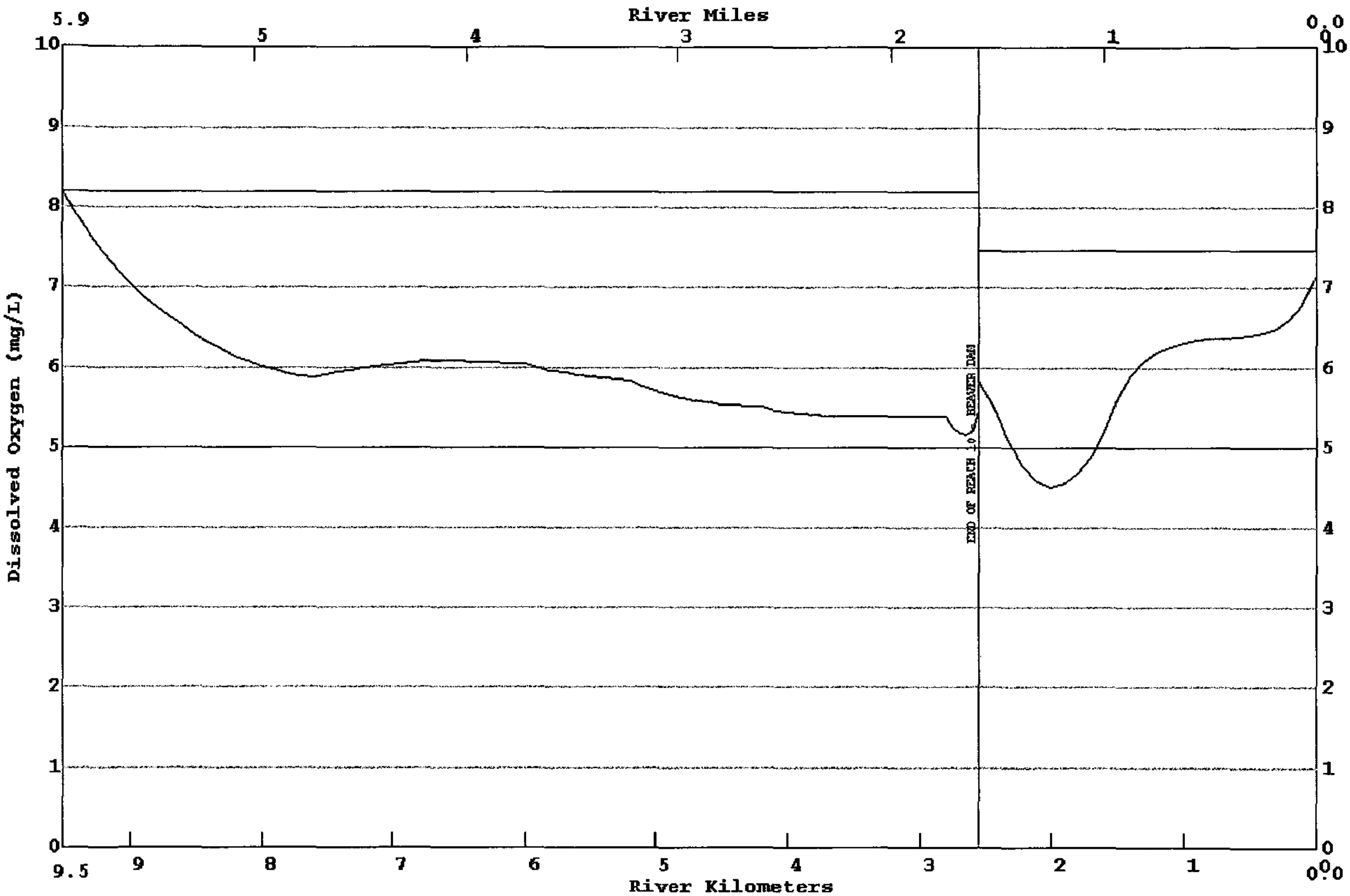
LA-QUAL Version 4.10 Run at 01:20 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap:
02/20/01;SUMMER PROJ;80% RED. OF MAN-MADE NNPNT LOAD;W.C. BERGER min= 3.50 max= 8.20
Marsh Bayou: Welcome Rd.-Calcasieu R.



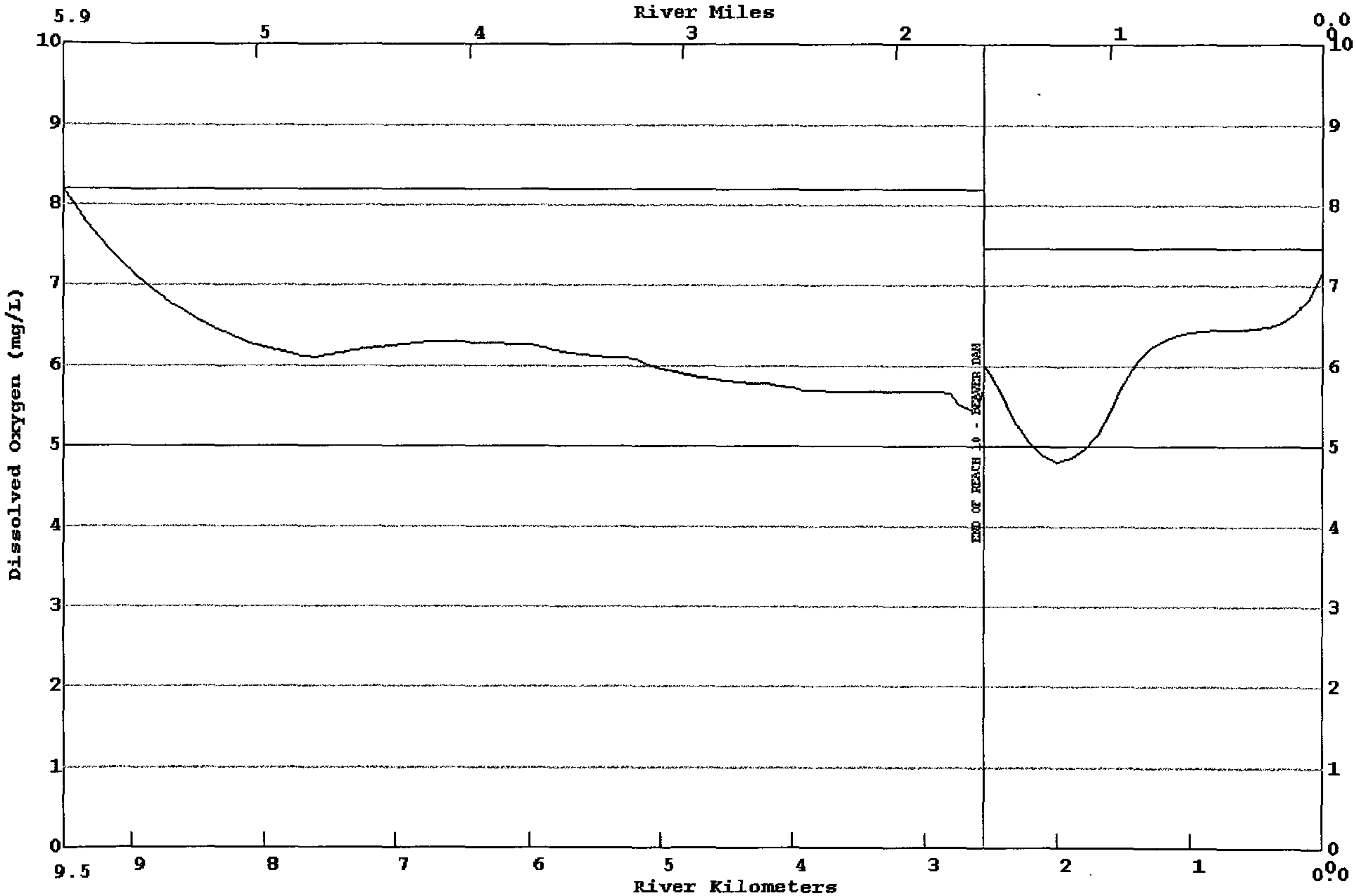
LA-QUAL Version 4.10 Run at 01:20 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap:
02/20/01;SUMMER PROJ;90% RED. OF MAN-MADE NNPNT LOAD; W.C. BERGE   min=   4.00   max=   8.20
Marsh Bayou: Welcome Rd.-Calcasieu R.



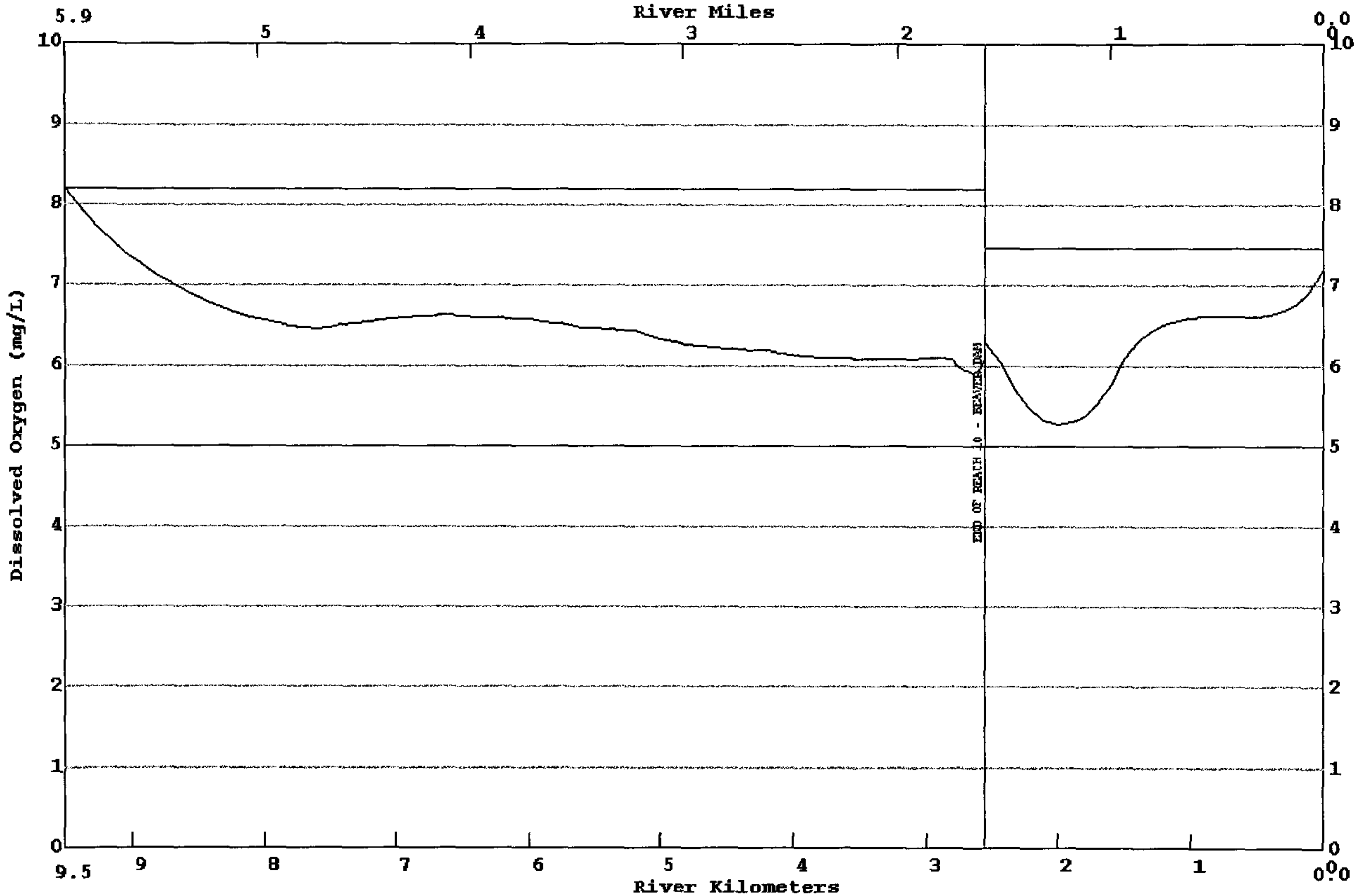
LA-QUAL Version 4.10 Run at 20:52 on 04/04/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap;
02/20/01;SUMMER PROJ;100% RED. OF MAN-MADE NNPNT LOAD; W.C. BERG min= 4.51 max= 8.20
Marsh Bayou: Welcome Rd.-Calcasieu R.



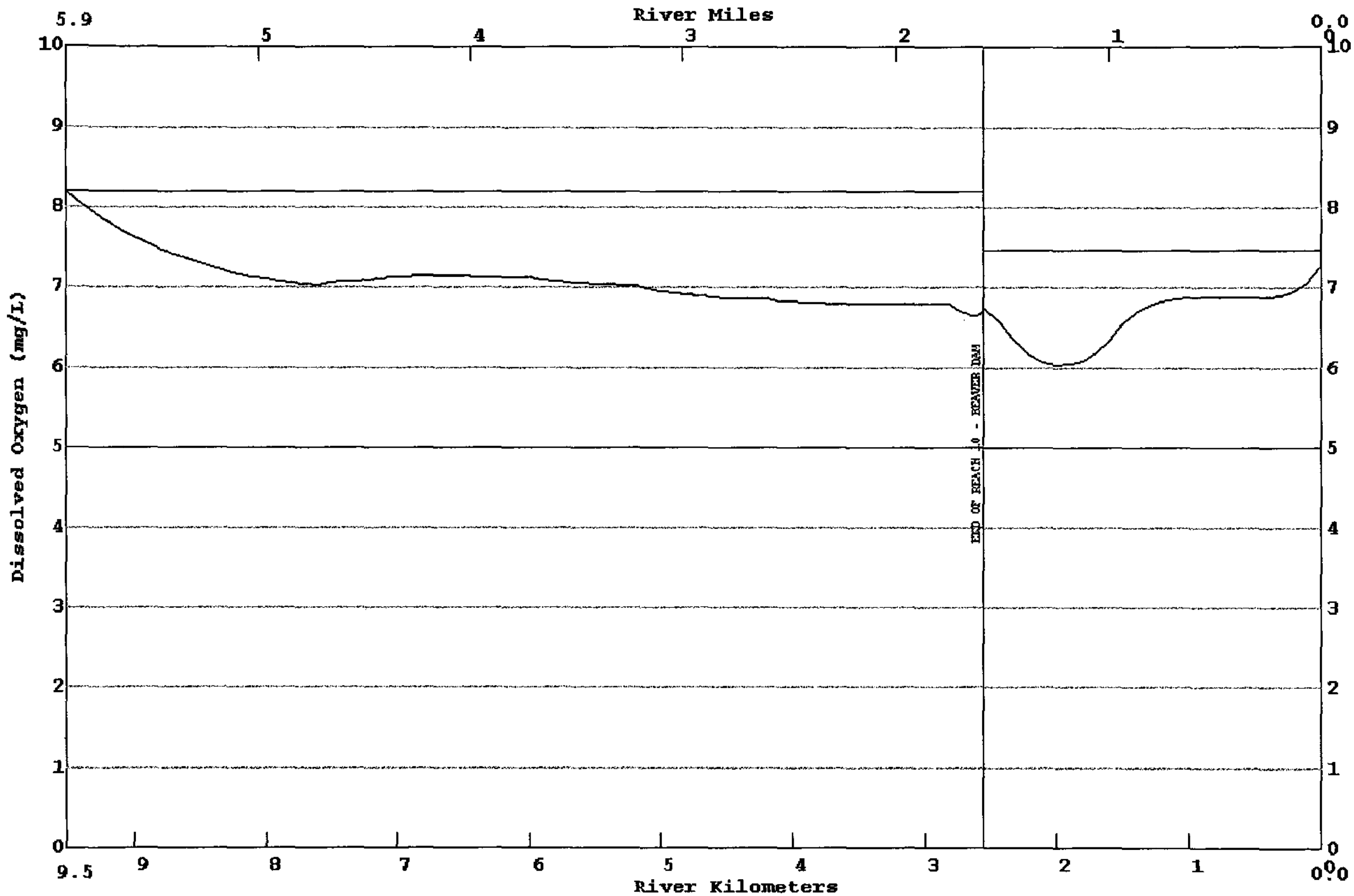
LA-QUAL Version 4.10 Run at 15:55 on 04/04/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100
02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;10%RED.OF BCKGRND;W.C min= 4.82 max= 8.20
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 15:59 on 04/04/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100
02/20/01;SUM PROJ;100%RED.OF MAN-MADE LOAD;25% RED.OF BCKGRND;W. min= 5.27 max= 8.20
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 15:57 on 04/04/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100
02/20/01;SUMMER PROJ;100%RED.OF MAN-MADE LOAD;50%RED.OF RCKGRND; min= 6.03 max= 8.20
Marsh Bayou: Welcome Rd.-Calcasieu R.



APPENDIX F2 – WINTER WATER QUALITY PROJECTION OUTPUT FILES AND PLOTS

Winter Projection Model Output File
(100% Reduction of Estimated Man-Made Load, 20% Reduction of Estimated Natural Background Loads)
Winter Projection Model Plots
(100% Reduction of Estimated Man-Made Load, 20% Reduction of Estimated Natural Background Loads)
Marsh Bayou Water Quality Winter Projection Model Input Descriptions
(100% Reduction of Estimated Man-Made Load, 20% Reduction of Estimated Natural Background Loads)

Winter Projection Model Output File
(70% Reduction of Estimated Man-Made Loads)
Winter Projection Model Plots
(70% Reduction of Estimated Man-Made Loads)
Marsh Bayou Water Quality Winter Projection Model Input Descriptions
(70% Reduction of Estimated Man-Made Loads)

LA-QUAL Version 4.10
Louisiana Department of Environmental Quality

Input file is D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100%Manloadremoved_naturalbackgroundreduced\Winter\MARS_WIN_100ManMade-20Bckgrnd_NoMOS.txt
Output produced at 14:47 on 04/04/2001

$$$ DATA TYPE 1 (TITLES AND CONTROL CARDS) $$$

CARD TYPE		CONTROL TITLES
TITLE01		MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
TITLE02		02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.
CNTROL11	NO	SEQUENCING OUTPUT
CNTROL12	YES	METRIC UNITS
CNTROL13	YES	OXYGEN DEPENDENT RATES
ENDATA01		

$$$ DATA TYPE 2 (MODEL OPTIONS) $$$

CARD TYPE		MODEL OPTION	
MODOPT01	NO	TEMPERATURE	
MODOPT02	NO	SALINITY	
MODOPT03	YES	CONSERVATIVE MATERIAL I = CHLORIDES	IN MG/L
MODOPT04	YES	CONSERVATIVE MATERIAL II = SULFATES	IN MG/L
MODOPT05	YES	DISSOLVED OXYGEN	
MODOPT06	YES	BIOCHEMICAL OXYGEN DEMAND = UCBOD	
MODOPT07	NO	NITROGEN	
MODOPT08	NO	PHOSPHORUS	
MODOPT09	NO	CHLOROPHYLL A	
MODOPT10	NO	MACROPHYTES	
MODOPT11	NO	COLIFORM	
MODOPT12	YES	NONCONSERVATIVE MATERIAL = NBOD	IN MG/L
ENDATA02			

$$$ DATA TYPE 3 (PROGRAM CONSTANTS) $$$

CARD TYPE	DESCRIPTION OF CONSTANT		VALUE
PROGRAM	HYDRAULIC CALCULATION METHOD	=	2.00000
PROGRAM	MAXIMUM ITERATION LIMIT	=	500.00000
PROGRAM	PLOT CONTROL VALUE	=	3.00000
PROGRAM	INTERMEDIATE REPORT TYPE	=	4.00000
PROGRAM	FINAL REPORT TYPE	=	1.00000
PROGRAM	BOD OXYGEN UPTAKE RATE	=	1.00000
PROGRAM	NCM OXYGEN UPTAKE RATE	=	1.00000
PROGRAM	INHIBITION CONTROL VALUE	=	2.00000
PROGRAM	TIDE HEIGHT (METERS)	=	0.07600
PROGRAM	TIDAL PERIOD	=	25.00000
PROGRAM	PERIOD OF TIDAL RISE	=	12.50000
PROGRAM	DISPERSION EQUATION	=	1.00000
PROGRAM	ALGAE OXYGEN PROD	=	0.00000
PROGRAM	OCEAN EXCHANGE RATIO	=	1.00000

```
PROGRAM        KL MINIMUM                          =        0.70000
PROGRAM        K2 MAXIMUM                          =       25.00000
PROGRAM        INHIBITION CONTROL VALUE            =        3.00000
PROGRAM        N INHIBITION EQUATION               =        2.00000
PROGRAM        OXYGEN DEPENDENCE THRESHOLD         =        2.00000
PROFRAM        SETTLING RATE UNITS                 =        2.00000
PROGRAM        O ERROR CLOSURE LIMIT               =        0.75000
PROGRAM        O RELAXATION COEFFICIENT            =        0.25000
PROGRAM        O ITERATIONS PER CYCLE              =        0.00000
PROGRAM        EFFECTIVE BOD DUE TO ALGAE          =        0.00000
ENDATA03

$$$ DATA TYPE 4 (TEMPERATURE CORRECTION CONSTANTS FOR RATE COEFFICIENTS) $$$

 CARD TYPE     RATE CODE     THETA VALUE

TEMP          BOD SETT      1.02400
TEMP          NCM DECA      1.07000
TEMP          NCM SETT      1.02400
TEMP          PO4 SRCE      1.06500
TEMP          NH3 SRCE      1.06500
TEMP          BENTHAL       1.06500
TEMP          NH3 DECA      1.07000
TEMP          ORGN SET      1.07000
ENDATA04

$$$ CONSTANTS TYPE 5 (TEMPERATURE DATA) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

ENDATA05

$$$ DATA TYPE 6 (ALGAE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

ENDATA06

$$$ DATA TYPE 7 (MACROPHYTE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                       VALUE

ENDATA07

$$$ DATA TYPE 8 (REACH IDENTIFICATION DATA) $$$
```

CARD TYPE	REACH	ID	NAME	BEGIN REACH km		END REACH km	ELEM LENGTH km	REACH LENGTH km	ELEMS PER RCH	BEGIN ELEM NUM	END ELEM NUM
REACH ID	1	MB	E. WELCOME RD.-RKM 8.6	9.52	TO	8.60	0.0920	0.92	10	1	10
REACH ID	2	MB	RKM 8.6-UT LDB	8.60	TO	7.60	0.1000	1.00	10	11	20
REACH ID	3	MB	UT LDB-SITE 4	7.60	TO	6.65	0.0950	0.95	10	21	30
REACH ID	4	MB	RKM 6.65-E. OF TOPSY RD.	6.65	TO	6.00	0.1300	0.65	5	31	35
REACH ID	5	MB	EAST OF TOPSY RD.-RKM 5.2	6.00	TO	5.20	0.1000	0.80	8	36	43

REACH ID	6	MB	RKM 5.2-UT LDB	5.20	TO	4.20	0.1000	1.00	10	44	53
REACH ID	7	MB	UT LDB-SITE 3	4.20	TO	3.30	0.1000	0.90	9	54	62
REACH ID	8	MB	SITE 3-LITTLE MARSH B.	3.30	TO	2.80	0.1000	0.50	5	63	67
REACH ID	9	MB	LITTLE MARSH B.-BEAVER DAM	2.80	TO	2.55	0.0500	0.25	5	68	72
REACH ID	10	MB	BEAVER DAM	2.55	TO	2.55	0.0010	0.00	1	73	73
REACH ID	11	MB	BEAVER DAM-RKM 2.0	2.55	TO	2.00	0.1100	0.55	5	74	78
REACH ID	12	MB	RKM 2.0-UT LDB	2.00	TO	1.60	0.1000	0.40	4	79	82
REACH ID	13	MB	UT LDB-NATURAL DIV. TO CAL.R.	1.60	TO	1.30	0.1000	0.30	3	83	85
REACH ID	14	MB	NAT. DIV. TO CAL.R.-RKM RKM 0.8	1.30	TO	0.80	0.1000	0.50	5	86	90
REACH ID	15	MB	UPPER OUTLET-LOWER OUTLET	0.80	TO	0.00	0.1000	0.80	8	91	98

ENDATA08

$$$ DATA TYPE 9 (ADVECTIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	WIDTH "A"	WIDTH "B"	WIDTH "C"	DEPTH "D"	DEPTH "E"	DEPTH "F"	SLOPE	MANNINGS "N"
HYDR-1	1	MB	4.450	0.360	4.000	2.100	0.480	0.400	0.00020	0.040
HYDR-1	2	MB	4.450	0.360	5.000	2.100	0.480	0.550	0.00020	0.040
HYDR-1	3	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	4	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	5	MB	5.400	0.360	9.500	1.150	0.480	0.650	0.00020	0.040
HYDR-1	6	MB	5.400	0.360	11.500	1.150	0.480	0.600	0.00020	0.040
HYDR-1	7	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	8	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	9	MB	16.500	0.500	23.000	1.200	0.200	0.760	0.00020	0.040
HYDR-1	10	MB	32.790	0.050	0.000	1.100	0.200	0.000	0.30470	0.040
HYDR-1	11	MB	16.500	0.500	23.000	1.400	0.480	0.700	0.00020	0.040
HYDR-1	12	MB	16.500	0.500	24.000	1.400	0.480	0.800	0.00020	0.040
HYDR-1	13	MB	16.500	0.500	24.500	1.400	0.480	0.930	0.00020	0.040
HYDR-1	14	MB	16.500	0.500	25.000	1.400	0.480	0.940	0.00020	0.040
HYDR-1	15	MB	16.500	0.500	25.500	1.400	0.480	0.950	0.00020	0.040

ENDATA09

$$$ DATA TYPE 10 (DISPERSIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	TIDAL RANGE	DISPERSION "A"	DISPERSION "B"	DISPERSION "C"	DISPERSION "D"
HYDR	1	MB	0.00	0.000	0.000	0.000	0.000
HYDR	2	MB	0.00	0.000	0.000	0.000	0.000
HYDR	3	MB	0.00	0.000	0.000	0.000	0.000
HYDR	4	MB	0.00	0.000	0.000	0.000	0.000
HYDR	5	MB	0.00	0.000	0.000	0.000	0.000
HYDR	6	MB	0.00	0.000	0.000	0.000	0.000
HYDR	7	MB	0.00	0.000	0.000	0.000	0.000
HYDR	8	MB	0.00	0.000	0.000	0.000	0.000
HYDR	9	MB	0.00	0.050	0.000	0.000	0.000
HYDR	10	MB	0.00	0.500	0.000	0.000	0.000
HYDR	11	MB	0.00	0.900	0.000	0.000	0.000
HYDR	12	MB	0.00	0.900	0.000	0.000	0.000
HYDR	13	MB	0.00	0.950	0.000	0.000	0.000
HYDR	14	MB	0.00	1.000	0.000	0.000	0.000
HYDR	15	MB	0.00	1.000	0.000	0.000	0.000

ENDATA10

$$$ DATA TYPE 11 (INITIAL CONDITIONS) $$$

CARD TYPE	REACH	ID	TEMP	SALIN	DO	NH3	NO3+2	PHOS	CHL A	MACRO
INITIAL	1	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	2	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	3	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	4	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	5	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	6	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	7	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	8	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	9	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	10	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	11	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00
INITIAL	12	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00
INITIAL	13	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00
INITIAL	14	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00
INITIAL	15	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00

ENDATA11

$$$ DATA TYPE 12 (REAERATION, SEDIMENT OXYGEN DEMAND, BOD COEFFICIENTS) $$$

CARD TYPE	REACH	ID	K2 OPT	K2 "A"	K2 "B"	K2 "C"	BKGRND SOD	AEROB BOD DECAY	BOD SETT	BOD CONV TO SOD	ANAER BOD DECAY
COEF-1	1	MB	15 LOUISIANA	0.000	0.000	0.000	0.540	0.100	0.060	0.000	0.000
COEF-1	2	MB	15 LOUISIANA	0.000	0.000	0.000	0.340	0.100	0.060	0.000	0.000
COEF-1	3	MB	15 LOUISIANA	0.000	0.000	0.000	0.330	0.100	0.060	0.000	0.000
COEF-1	4	MB	15 LOUISIANA	0.000	0.000	0.000	0.410	0.100	0.060	0.000	0.000
COEF-1	5	MB	15 LOUISIANA	0.000	0.000	0.000	0.590	0.100	0.060	0.000	0.000
COEF-1	6	MB	15 LOUISIANA	0.000	0.000	0.000	0.780	0.100	0.060	0.000	0.000
COEF-1	7	MB	15 LOUISIANA	0.000	0.000	0.000	0.800	0.130	0.070	0.000	0.000
COEF-1	8	MB	15 LOUISIANA	0.000	0.000	0.000	0.810	0.130	0.070	0.000	0.000
COEF-1	9	MB	15 LOUISIANA	2.300	0.000	0.000	0.760	0.130	0.070	0.000	0.000
COEF-1	10	MB	1 K2=a	500.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEF-1	11	MB	15 LOUISIANA	0.000	0.000	0.000	1.110	0.150	0.080	0.000	0.000
COEF-1	12	MB	15 LOUISIANA	0.000	0.000	0.000	0.860	0.150	0.080	0.000	0.000
COEF-1	13	MB	20 K2=a/D	2.300	0.000	0.000	0.810	0.150	0.080	0.000	0.000
COEF-1	14	MB	20 K2=a/D	2.300	0.000	0.000	0.900	0.150	0.080	0.000	0.000
COEF-1	15	MB	20 K2=a/D	2.300	0.000	0.000	1.010	0.150	0.080	0.000	0.000

ENDATA12

$$$ DATA TYPE 13 (NITROGEN AND PHOSPHORUS COEFFICIENTS) $$$

CARD TYPE	REACH	ID	ORG-N DECA	ORG-N SETT	ORGN CONV TO NH3 SRCE	NH3 DECA	NH3 SRCE	PHOS SRCE	DENIT RATE

ENDATA13

$$$ DATA TYPE 14 (ALGAE AND MACROPHYTE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	SECCHI DEPTH	ALGAE: CHL A	ALGAE SETT	ALG CONV TO SOD	ALGAE GROW	ALGAE RESP	MACRO GROW	MACRO RESP

ENDATA14

$$$ DATA TYPE 15 (COLIFORM AND NONCONSERVATIVE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	COLIFORM DIE-OFF	NCM DECAY	NCM SETT	NCM CONV TO SOD
COEF-4	1	MB	0.00	0.15	0.03	0.00
COEF-4	2	MB	0.00	0.15	0.03	0.00
COEF-4	3	MB	0.00	0.08	0.03	0.00
COEF-4	4	MB	0.00	0.08	0.03	0.00
COEF-4	5	MB	0.00	0.08	0.03	0.00
COEF-4	6	MB	0.00	0.08	0.03	0.00
COEF-4	7	MB	0.00	0.10	0.04	0.00
COEF-4	8	MB	0.00	0.10	0.04	0.00
COEF-4	9	MB	0.00	0.10	0.04	0.00
COEF-4	10	MB	0.00	0.00	0.00	0.00
COEF-4	11	MB	0.00	0.10	0.04	0.00
COEF-4	12	MB	0.00	0.10	0.04	0.00
COEF-4	13	MB	0.00	0.10	0.04	0.00
COEF-4	14	MB	0.00	0.08	0.04	0.00
COEF-4	15	MB	0.00	0.08	0.04	0.00

ENDATA15

$$$ DATA TYPE 16 (INCREMENTAL DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE	REACH	ID	OUTFLOW	INFLOW	TEMP	SALIN	CM-I	CM-II	IN/DIST	OUT/DIST

ENDATA16

$$$ DATA TYPE 17 (INCREMENTAL DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE	REACH	ID	DO	BOD	ORG-N	NH3	NO3+2

ENDATA17

$$$ DATA TYPE 18 (INCREMENTAL DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE	REACH	ID	PHOS	CHL A	COLI	NCM

ENDATA18

$$$ DATA TYPE 19 (NONPOINT SOURCE DATA) $$$

CARD TYPE	REACH	ID	BOD	ORG-N	COLI	NCM	DO
NONPOINT	1	MB	3.88	0.00	0.00	1.71	0.00
NONPOINT	2	MB	5.79	0.00	0.00	2.71	0.00
NONPOINT	3	MB	8.73	0.00	0.00	2.45	0.00
NONPOINT	4	MB	5.59	0.00	0.00	1.54	0.00
NONPOINT	5	MB	7.49	0.00	0.00	1.87	0.00

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NONPOINT          6   MB       9.16     0.00     0.00     1.97     0.00
NONPOINT          7   MB       8.61     0.00     0.00     1.51     0.00
NONPOINT          8   MB       4.76     0.00     0.00     0.79     0.00
NONPOINT          9   MB       5.71     0.00     0.00     0.03     0.00
NONPOINT         10   MB       0.00     0.00     0.00     0.00     0.00
NONPOINT         11   MB       7.01     0.00     0.00     0.39     0.00
NONPOINT         12   MB       7.97     0.00     0.00     0.40     0.00
NONPOINT         13   MB       6.50     0.00     0.00     0.37     0.00
NONPOINT         14   MB       9.68     0.00     0.00     0.55     0.00
NONPOINT         15   MB      13.44     0.00     0.00     0.77     0.00
ENDATA19

$$$ DATA TYPE 20 (HEADWATER FOR FLOW, TEMPERATURE, SALINITY AND CONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                   UNIT         FLOW      TEMP      SALIN      CM-I      CM-II

HDWTR-1            1     Marsh @ Welcome Rd.     0         0.07100    15.300     0.000     20.400     5.400
ENDATA20

$$$ DATA TYPE 21 (HEADWATER DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE      ELEMENT   NAME                              DO        BOD      ORG-N       NH3      NO3+2

HDWTR-2            1     Marsh @ Welcome Rd.             10.02       2.36      0.00       0.00      0.00
ENDATA21

$$$ DATA TYPE 22 (HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                             PHOS      CHL A      COLI        NCM

HDWTR-3            1     Marsh @ Welcome Rd.              0.00      11.90      0.00       5.81
ENDATA22

$$$ DATA TYPE 23 (JUNCTION DATA) $$$

CARD TYPE    JUNCTION   UPSTRM     RIVER     NAME
              ELEMENT   ELEMENT    KILOM

ENDATA23

$$$ DATA TYPE 24 (WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE   ELEMENT    RKILO  NAME                             FLOW      TEMP       SAL       CM-I      CM-II

ENDATA24

$$$ DATA TYPE 25 (WASTELOAD DATA FOR DO, BOD, AND NITROGEN) $$$

                                                                        % BOD                             %
CARD TYPE      ELEMENT   NAME                              DO        BOD     RMVL      ORG-N       NH3    NITRIF     NO3+2

ENDATA25

$$$ DATA TYPE 26 (WASTELOAD DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$
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CARD TYPE     ELEMENT   NAME                      PHOS     CHL A     COLI      NCM

ENDATA26

$$$ DATA TYPE 27 (LOWER BOUNDARY CONDITIONS) $$$

CARD TYPE    CONSTITUENT                    CONCENTRATION

LOWER BC     TEMPERATURE                        =     18.800 deg C
LOWER BC     SALINITY                           =      0.000 ppt
LOWER BC     CONSERVATIVE MATERIAL  I           =      6.400 MG/L
LOWER BC     CONSERVATIVE MATERIAL  II          =      2.800 MG/L
LOWER BC     DISSOLVED OXYGEN                   =      9.310 mg/L
LOWER BC     BIOCHEMICAL OXYGEN DEMAND          =      3.420 mg/L
LOWER BC     ORGANIC NITROGEN                   =      0.220 mg/L
LOWER BC     AMMONIA NITROGEN                   =      0.000 mg/L
LOWER BC     NITRATE+NITRITE NITROGEN           =      0.030 mg/L
LOWER BC     PHOSPHORUS                         =      0.120 mg/L
LOWER BC     CHLOROPHYLL A                      =      3.930 µg/L
LOWER BC     COLIFORM                           =      0.000 #/100 mL
LOWER BC     NONCONSERVATIVE MATERIAL           =      0.360 MG/L
ENDATA27

$$$ DATA TYPE 28 (RESERVED FOR FUTURE DATA INPUT) $$$

 CARD TYPE

ENDATA28

$$$ DATA TYPE 29 (SENSITIVITY ANALYSIS DATA) $$$

CARD TYPE      PARAMETER     COL 1     COL 2     COL 3     COL 4     COL 5     COL 6     COL 7     COL 8

ENDATA29

$$$ DATA TYPE 30 (PLOT CONTROL CARDS) $$$


NUMBER OF PLOTS =   5
NUMBER OF REACHES IN PLOT 1 =    4
PLOT RCH  1  2  3  4
NUMBER OF REACHES IN PLOT 2 =    4
PLOT RCH  5  6  7  8
NUMBER OF REACHES IN PLOT 3 =    4
PLOT RCH  9 10 11 12
NUMBER OF REACHES IN PLOT 4 =    3
PLOT RCH 13 14 15
NUMBER OF REACHES IN PLOT 5 =  15
PLOT RCH  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
ENDATA30

$$$ DATA TYPE 31 (OVERLAY PLOT DATA) $$$
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OVERLAY 1  marshwinpresentation.ovl        Marsh Bayou: Welcome Rd.-RKM 6.0
OVERLAY 2  marshwinpresentation.ovl        Marsh Bayou: RKM 6.0-RKM 2.8
OVERLAY 3  marshwinpresentation.ovl        Marsh Bayou: RKM 2.8-UT LDB (RKM 1.6)
OVERLAY 4  marshwinpresentation.ovl        Marsh Bayou: UT LDB(RKM 1.6)-CAL. R.
OVERLAY 5  marshwinpresentation.ovl        Marsh Bayou: Welcome Rd.-Calcasieu R.
ENDATA31

     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN   1 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11
     .....GRAPHICS DATA FOR PLOT 2 WRITTEN TO UNIT 12
     .....GRAPHICS DATA FOR PLOT 3 WRITTEN TO UNIT 13
     .....GRAPHICS DATA FOR PLOT 4 WRITTEN TO UNIT 14
     .....GRAPHICS DATA FOR PLOT 5 WRITTEN TO UNIT 15
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CAPSULE SUMMARY
Marsh @ Welcome Rd.

DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD
HDWTR	0.07100	15.30	0.00	10.02	2.36	0.00	0.00	11.90					
9.43	0.07100	15.30	0.00	9.92	2.40	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
9.34	0.07100	15.30	0.00	9.83	2.43	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
9.24	0.07100	15.30	0.00	9.74	2.47	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
9.15	0.07100	15.30	0.00	9.66	2.50	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
9.06	0.07100	15.30	0.00	9.59	2.54	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
8.97	0.07100	15.30	0.00	9.52	2.57	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
8.88	0.07100	15.30	0.00	9.45	2.60	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
8.78	0.07100	15.30	0.00	9.39	2.64	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
8.69	0.07100	15.30	0.00	9.33	2.67	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
8.60	0.07100	15.30	0.00	9.28	2.70	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.40
8.50	0.07100	15.30	0.00	9.21	2.75	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
8.40	0.07100	15.30	0.00	9.15	2.80	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
8.30	0.07100	15.30	0.00	9.10	2.84	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
8.20	0.07100	15.30	0.00	9.04	2.89	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
8.10	0.07100	15.30	0.00	9.00	2.94	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
8.00	0.07100	15.30	0.00	8.95	2.98	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
7.90	0.07100	15.30	0.00	8.91	3.02	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
7.80	0.07100	15.30	0.00	8.88	3.07	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
7.70	0.07100	15.30	0.00	8.84	3.11	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
7.60	0.07100	15.30	0.00	8.81	3.15	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
7.51	0.07100	15.30	0.00	8.81	3.23	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
7.41	0.07100	15.30	0.00	8.81	3.30	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
7.32	0.07100	15.30	0.00	8.80	3.37	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
7.22	0.07100	15.30	0.00	8.80	3.44	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25

7.13	0.07100	15.30	0.00	8.80	3.51	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
7.03	0.07100	15.30	0.00	8.80	3.58	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
6.94	0.07100	15.30	0.00	8.79	3.64	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
6.84	0.07100	15.30	0.00	8.79	3.71	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
6.75	0.07100	15.30	0.00	8.79	3.77	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
6.65	0.07100	15.30	0.00	8.78	3.83	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.25
6.52	0.07100	15.30	0.00	8.77	3.90	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.30
6.39	0.07100	15.30	0.00	8.75	3.97	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.30
6.26	0.07100	15.30	0.00	8.74	4.04	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.30
6.13	0.07100	15.30	0.00	8.73	4.10	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.30
6.00	0.07100	15.30	0.00	8.71	4.16	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.30
5.90	0.07100	15.30	0.00	8.69	4.21	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.44
5.80	0.07100	15.30	0.00	8.67	4.26	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.44
5.70	0.07100	15.30	0.00	8.65	4.31	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.44
5.60	0.07100	15.30	0.00	8.64	4.35	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.44
5.50	0.07100	15.30	0.00	8.62	4.40	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.44
5.40	0.07100	15.30	0.00	8.61	4.44	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.44
5.30	0.07100	15.30	0.00	8.60	4.48	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.44
5.20	0.07100	15.30	0.00	8.59	4.52	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.44
5.10	0.07100	15.30	0.00	8.55	4.55	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
5.00	0.07100	15.30	0.00	8.52	4.57	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
4.90	0.07100	15.30	0.00	8.49	4.59	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
4.80	0.07100	15.30	0.00	8.47	4.62	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
4.70	0.07100	15.30	0.00	8.45	4.64	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
4.60	0.07100	15.30	0.00	8.44	4.66	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
4.50	0.07100	15.30	0.00	8.42	4.68	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
4.40	0.07100	15.30	0.00	8.41	4.70	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
4.30	0.07100	15.30	0.00	8.40	4.72	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
4.20	0.07100	15.30	0.00	8.39	4.74	0.00	0.00	11.90	0.73	0.08	0.05	0.00	0.58
4.10	0.07100	15.30	0.00	8.36	4.74	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
4.00	0.07100	15.30	0.00	8.34	4.75	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.90	0.07100	15.30	0.00	8.32	4.75	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.80	0.07100	15.30	0.00	8.30	4.75	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.70	0.07100	15.30	0.00	8.29	4.75	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.60	0.07100	15.30	0.00	8.27	4.76	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.50	0.07100	15.30	0.00	8.26	4.76	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.40	0.07100	15.30	0.00	8.26	4.76	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.30	0.07100	15.30	0.00	8.25	4.76	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.20	0.07100	15.30	0.00	8.24	4.77	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.10	0.07100	15.30	0.00	8.24	4.77	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
3.00	0.07100	15.30	0.00	8.24	4.77	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
2.90	0.07100	15.30	0.00	8.23	4.77	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
2.80	0.07100	15.30	0.00	8.22	4.76	0.00	0.00	11.90	0.81	0.10	0.06	0.00	0.60
2.75	0.07100	15.30	0.00	8.11	4.66	0.00	0.00	11.90	0.43	0.10	0.06	0.00	0.57
2.70	0.07100	15.30	0.00	8.04	4.59	0.00	0.00	11.90	0.43	0.10	0.06	0.00	0.57
2.65	0.07100	15.30	0.00	8.00	4.51	0.00	0.00	11.90	0.43	0.10	0.06	0.00	0.57
2.60	0.07100	15.30	0.00	8.00	4.39	0.00	0.00	11.90	0.43	0.10	0.06	0.00	0.57
2.55	0.07100	15.30	0.00	8.11	4.14	0.00	0.00	11.90	0.43	0.10	0.06	0.00	0.57
2.55	0.07100	18.80	0.00	8.29	3.86	0.00	0.00	11.90	488.11	0.00	0.00	0.00	0.00
2.44	0.07100	18.80	0.00	8.13	3.77	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.03
2.33	0.07100	18.80	0.00	7.91	3.63	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.03
2.22	0.07100	18.80	0.00	7.75	3.50	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.03
2.11	0.07100	18.80	0.00	7.64	3.39	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.03
2.00	0.07100	18.80	0.00	7.59	3.30	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.03

1.90	0.07100	18.80	0.00	7.60	3.23	0.00	0.00	11.90	0.57	0.14	0.08	0.00	0.80
1.80	0.07100	18.80	0.00	7.64	3.17	0.00	0.00	11.90	0.57	0.14	0.08	0.00	0.80
1.70	0.07100	18.80	0.00	7.74	3.11	0.00	0.00	11.90	0.57	0.14	0.08	0.00	0.80
1.60	0.07100	18.80	0.00	7.90	3.06	0.00	0.00	11.90	0.57	0.14	0.08	0.00	0.80
1.50	0.07100	18.80	0.00	8.14	3.00	0.00	0.00	11.90	1.70	0.14	0.08	0.00	0.75
1.40	0.07100	18.80	0.00	8.30	2.95	0.00	0.00	11.90	1.70	0.14	0.08	0.00	0.75
1.30	0.07100	18.80	0.00	8.41	2.90	0.00	0.00	11.90	1.70	0.14	0.08	0.00	0.75
1.20	0.07100	18.80	0.00	8.48	2.84	0.00	0.00	11.90	1.68	0.14	0.08	0.00	0.83
1.10	0.07100	18.80	0.00	8.53	2.80	0.00	0.00	11.90	1.68	0.14	0.08	0.00	0.83
1.00	0.07100	18.80	0.00	8.57	2.76	0.00	0.00	11.90	1.68	0.14	0.08	0.00	0.83
0.90	0.07100	18.80	0.00	8.60	2.73	0.00	0.00	11.90	1.68	0.14	0.08	0.00	0.83
0.80	0.07100	18.80	0.00	8.62	2.70	0.00	0.00	11.90	1.68	0.14	0.08	0.00	0.83
0.70	0.07100	18.80	0.00	8.63	2.69	0.00	0.00	10.90	1.67	0.14	0.08	0.00	0.94
0.60	0.07100	18.80	0.00	8.64	2.68	0.00	0.00	9.91	1.67	0.14	0.08	0.00	0.94
0.50	0.07100	18.80	0.00	8.66	2.70	0.00	0.00	8.91	1.67	0.14	0.08	0.00	0.94
0.40	0.07100	18.80	0.00	8.69	2.74	0.00	0.00	7.91	1.67	0.14	0.08	0.00	0.94
0.30	0.07100	18.80	0.00	8.74	2.82	0.00	0.00	6.92	1.67	0.14	0.08	0.00	0.94
0.20	0.07100	18.80	0.00	8.81	2.92	0.00	0.00	5.92	1.67	0.14	0.08	0.00	0.94
0.10	0.07100	18.80	0.00	8.93	3.07	0.00	0.00	4.93	1.67	0.14	0.08	0.00	0.94
0.00	0.07100	18.80	0.00	9.14	3.28	0.00	0.00	3.93	1.67	0.14	0.08	0.00	0.94

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH	DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
		HDWTR	0.071	15.3	0.0	10.0	2.4	0.0	0.0	11.9											
1	MB 1	9.43	0.071	15.3	0.0	9.9	2.4	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
2	MB 1	9.34	0.071	15.3	0.0	9.8	2.4	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
3	MB 1	9.24	0.071	15.3	0.0	9.7	2.5	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
4	MB 1	9.15	0.071	15.3	0.0	9.7	2.5	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
5	MB 1	9.06	0.071	15.3	0.0	9.6	2.5	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
6	MB 1	8.97	0.071	15.3	0.0	9.5	2.6	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
7	MB 1	8.88	0.071	15.3	0.0	9.5	2.6	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
8	MB 1	8.78	0.071	15.3	0.0	9.4	2.6	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
9	MB 1	8.69	0.071	15.3	0.0	9.3	2.7	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
10	MB 1	8.60	0.071	15.3	0.0	9.3	2.7	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.40
11	MB 2	8.50	0.071	15.3	0.0	9.2	2.8	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
12	MB 2	8.40	0.071	15.3	0.0	9.2	2.8	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
13	MB 2	8.30	0.071	15.3	0.0	9.1	2.8	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
14	MB 2	8.20	0.071	15.3	0.0	9.0	2.9	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
15	MB 2	8.10	0.071	15.3	0.0	9.0	2.9	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
16	MB 2	8.00	0.071	15.3	0.0	9.0	3.0	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
17	MB 2	7.90	0.071	15.3	0.0	8.9	3.0	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
18	MB 2	7.80	0.071	15.3	0.0	8.9	3.1	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
19	MB 2	7.70	0.071	15.3	0.0	8.8	3.1	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
20	MB 2	7.60	0.071	15.3	0.0	8.8	3.2	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.25
21	MB 3	7.51	0.071	15.3	0.0	8.8	3.2	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25
22	MB 3	7.41	0.071	15.3	0.0	8.8	3.3	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25
23	MB 3	7.32	0.071	15.3	0.0	8.8	3.4	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25
24	MB 3	7.22	0.071	15.3	0.0	8.8	3.4	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25
25	MB 3	7.13	0.071	15.3	0.0	8.8	3.5	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25
26	MB 3	7.03	0.071	15.3	0.0	8.8	3.6	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25
27	MB 3	6.94	0.071	15.3	0.0	8.8	3.6	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25

28	MB	3	6.84	0.071	15.3	0.0	8.8	3.7	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25
29	MB	3	6.75	0.071	15.3	0.0	8.8	3.8	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25
30	MB	3	6.65	0.071	15.3	0.0	8.8	3.8	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.25
31	MB	4	6.52	0.071	15.3	0.0	8.8	3.9	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.30
32	MB	4	6.39	0.071	15.3	0.0	8.8	4.0	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.30
33	MB	4	6.26	0.071	15.3	0.0	8.7	4.0	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.30
34	MB	4	6.13	0.071	15.3	0.0	8.7	4.1	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.30
35	MB	4	6.00	0.071	15.3	0.0	8.7	4.2	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.30
36	MB	5	5.90	0.071	15.3	0.0	8.7	4.2	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.44
37	MB	5	5.80	0.071	15.3	0.0	8.7	4.3	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.44
38	MB	5	5.70	0.071	15.3	0.0	8.7	4.3	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.44
39	MB	5	5.60	0.071	15.3	0.0	8.6	4.4	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.44
40	MB	5	5.50	0.071	15.3	0.0	8.6	4.4	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.44
41	MB	5	5.40	0.071	15.3	0.0	8.6	4.4	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.44
42	MB	5	5.30	0.071	15.3	0.0	8.6	4.5	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.44
43	MB	5	5.20	0.071	15.3	0.0	8.6	4.5	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.44
44	MB	6	5.10	0.071	15.3	0.0	8.6	4.5	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
45	MB	6	5.00	0.071	15.3	0.0	8.5	4.6	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
46	MB	6	4.90	0.071	15.3	0.0	8.5	4.6	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
47	MB	6	4.80	0.071	15.3	0.0	8.5	4.6	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
48	MB	6	4.70	0.071	15.3	0.0	8.5	4.6	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
49	MB	6	4.60	0.071	15.3	0.0	8.4	4.7	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
50	MB	6	4.50	0.071	15.3	0.0	8.4	4.7	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
51	MB	6	4.40	0.071	15.3	0.0	8.4	4.7	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
52	MB	6	4.30	0.071	15.3	0.0	8.4	4.7	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
53	MB	6	4.20	0.071	15.3	0.0	8.4	4.7	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	0.58
54	MB	7	4.10	0.071	15.3	0.0	8.4	4.7	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
55	MB	7	4.00	0.071	15.3	0.0	8.3	4.7	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
56	MB	7	3.90	0.071	15.3	0.0	8.3	4.7	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
57	MB	7	3.80	0.071	15.3	0.0	8.3	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
58	MB	7	3.70	0.071	15.3	0.0	8.3	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
59	MB	7	3.60	0.071	15.3	0.0	8.3	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
60	MB	7	3.50	0.071	15.3	0.0	8.3	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
61	MB	7	3.40	0.071	15.3	0.0	8.3	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
62	MB	7	3.30	0.071	15.3	0.0	8.3	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
63	MB	8	3.20	0.071	15.3	0.0	8.2	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
64	MB	8	3.10	0.071	15.3	0.0	8.2	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
65	MB	8	3.00	0.071	15.3	0.0	8.2	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
66	MB	8	2.90	0.071	15.3	0.0	8.2	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
67	MB	8	2.80	0.071	15.3	0.0	8.2	4.8	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	0.60
68	MB	9	2.75	0.071	15.3	0.0	8.1	4.7	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	0.57
69	MB	9	2.70	0.071	15.3	0.0	8.0	4.6	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	0.57
70	MB	9	2.65	0.071	15.3	0.0	8.0	4.5	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	0.57
71	MB	9	2.60	0.071	15.3	0.0	8.0	4.4	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	0.57
72	MB	9	2.55	0.071	15.3	0.0	8.1	4.1	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	0.57
73	MB	10	2.55	0.071	18.8	0.0	8.3	3.9	0.0	0.0	11.9	0.5	0.65	28.7	0.004	0.004	9.348	8.106	0.00	0.00	0.00	0.00

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH		DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
74	MB	11	2.44	0.071	18.8	0.0	8.1	3.8	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.03
75	MB	11	2.33	0.071	18.8	0.0	7.9	3.6	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.03

76	MB	11	2.22	0.071	18.8	0.0	7.8	3.5	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.03
77	MB	11	2.11	0.071	18.8	0.0	7.6	3.4	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.03
78	MB	11	2.00	0.071	18.8	0.0	7.6	3.3	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.03
79	MB	12	1.90	0.071	18.8	0.0	7.6	3.2	0.0	0.0	11.9	0.9	1.19	28.4	0.002	0.002	9.3	0.573	0.14	0.08	0.00	0.80
80	MB	12	1.80	0.071	18.8	0.0	7.6	3.2	0.0	0.0	11.9	0.9	1.19	28.4	0.002	0.002	9.3	0.573	0.14	0.08	0.00	0.80
81	MB	12	1.70	0.071	18.8	0.0	7.7	3.1	0.0	0.0	11.9	0.9	1.19	28.4	0.002	0.002	9.3	0.573	0.14	0.08	0.00	0.80
82	MB	12	1.60	0.071	18.8	0.0	7.9	3.1	0.0	0.0	11.9	0.9	1.19	28.4	0.002	0.002	9.3	0.573	0.14	0.08	0.00	0.80
83	MB	13	1.50	0.071	18.8	0.0	8.1	3.0	0.0	0.0	11.9	0.9	1.32	28.9	0.002	0.002	9.3	1.697	0.14	0.08	0.00	0.75
84	MB	13	1.40	0.071	18.8	0.0	8.3	2.9	0.0	0.0	11.9	0.9	1.32	28.9	0.002	0.002	9.3	1.697	0.14	0.08	0.00	0.75
85	MB	13	1.30	0.071	18.8	0.0	8.4	2.9	0.0	0.0	11.9	0.9	1.32	28.9	0.002	0.002	9.3	1.697	0.14	0.08	0.00	0.75
86	MB	14	1.20	0.071	18.8	0.0	8.5	2.8	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	0.83
87	MB	14	1.10	0.071	18.8	0.0	8.5	2.8	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	0.83
88	MB	14	1.00	0.071	18.8	0.0	8.6	2.8	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	0.83
89	MB	14	0.90	0.071	18.8	0.0	8.6	2.7	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	0.83
90	MB	14	0.80	0.071	18.8	0.0	8.6	2.7	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	0.83
91	MB	15	0.70	0.071	18.8	0.0	8.6	2.7	0.0	0.0	10.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	0.94
92	MB	15	0.60	0.071	18.8	0.0	8.6	2.7	0.0	0.0	9.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	0.94
93	MB	15	0.50	0.071	18.8	0.0	8.7	2.7	0.0	0.0	8.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	0.94
94	MB	15	0.40	0.071	18.8	0.0	8.7	2.7	0.0	0.0	7.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	0.94
95	MB	15	0.30	0.071	18.8	0.0	8.7	2.8	0.0	0.0	6.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	0.94
96	MB	15	0.20	0.071	18.8	0.0	8.8	2.9	0.0	0.0	5.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	0.94
97	MB	15	0.10	0.071	18.8	0.0	8.9	3.1	0.0	0.0	4.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	0.94
98	MB	15	0.00	0.071	18.8	0.0	9.1	3.3	0.0	0.0	3.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	0.94

FINAL REPORT Marsh @ Welcome Rd.
REACH NO. 1 E. WELCOME RD.-RKM 8.6

MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
1	HDWTR	0.07100	15.30	0.00	20.40	5.40	10.02	2.36	2.36	0.00	0.00	0.00	0.00	11.90	0.00	5.81

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
1	9.52	9.43	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
2	9.43	9.34	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
3	9.34	9.24	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
4	9.24	9.15	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
5	9.15	9.06	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
6	9.06	8.97	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
7	8.97	8.88	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
8	8.88	8.78	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
9	8.78	8.69	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
10	8.69	8.60	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013

TOT		0.85			5206.99	5259.80	
AVG	0.01254		0.99	5.72			5.66
CUM		0.85					

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	9.428	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
2	9.336	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
3	9.244	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
4	9.152	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
5	9.060	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
6	8.968	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
7	8.876	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
8	8.784	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
9	8.692	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
10	8.600	10.02	0.77	0.08	0.05	0.00	0.40	0.40	0.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		0.54	0.00		0.00	0.00	0.00	0.00			0.00	5.77		
AVG 20 DEG C RATE			0.85		0.06					0.00									0.03	

* g/sq m/d   ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
1	9.428	15.30	0.00	20.40	5.40	9.92	2.40	2.40	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.77
2	9.336	15.30	0.00	20.40	5.40	9.83	2.43	2.43	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.73
3	9.244	15.30	0.00	20.40	5.40	9.74	2.47	2.47	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.70
4	9.152	15.30	0.00	20.40	5.40	9.66	2.50	2.50	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.66
5	9.060	15.30	0.00	20.40	5.40	9.59	2.54	2.54	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.62
6	8.968	15.30	0.00	20.40	5.40	9.52	2.57	2.57	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.58
7	8.876	15.30	0.00	20.40	5.40	9.45	2.60	2.60	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.55
8	8.784	15.30	0.00	20.40	5.40	9.39	2.64	2.64	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.51
9	8.692	15.30	0.00	20.40	5.40	9.33	2.67	2.67	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.48
10	8.600	15.30	0.00	20.40	5.40	9.28	2.70	2.70	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.44

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.
REACH NO. 2   RKM 8.6-UT LDB

MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
11	UPR RCH	0.07100	15.30	0.00	20.40	5.40	9.28	2.70	2.70	0.00	0.00	0.00	0.00	11.90	0.00	5.44

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
11	8.60	8.50	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
12	8.50	8.40	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
13	8.40	8.30	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
14	8.30	8.20	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
15	8.20	8.10	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
16	8.10	8.00	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
17	8.00	7.90	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
18	7.90	7.80	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
19	7.80	7.70	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
20	7.70	7.60	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
TOT						1.25			7657.31	6717.17					
AVG					0.00927		1.14	6.72			7.66				
CUM						2.10									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
11	8.500	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
12	8.400	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
13	8.300	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
14	8.200	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
15	8.100	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
16	8.000	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
17	7.900	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
18	7.800	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
19	7.700	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20	7.600	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		0.34	0.00		0.00	0.00	0.00	0.00			0.00	5.73		
AVG 20 DEG C RATE			0.70		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
11	8.500	15.30	0.00	20.40	5.40	9.21	2.75	2.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.39
12	8.400	15.30	0.00	20.40	5.40	9.15	2.80	2.80	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.35
13	8.300	15.30	0.00	20.40	5.40	9.10	2.84	2.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.30
14	8.200	15.30	0.00	20.40	5.40	9.04	2.89	2.89	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.26
15	8.100	15.30	0.00	20.40	5.40	9.00	2.94	2.94	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.21
16	8.000	15.30	0.00	20.40	5.40	8.95	2.98	2.98	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.17
17	7.900	15.30	0.00	20.40	5.40	8.91	3.02	3.02	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.13
18	7.800	15.30	0.00	20.40	5.40	8.88	3.07	3.07	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.08
19	7.700	15.30	0.00	20.40	5.40	8.84	3.11	3.11	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.04
20	7.600	15.30	0.00	20.40	5.40	8.81	3.15	3.15	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.00

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 3   UT LDB-SITE 4   02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
21	UPR RCH	0.07100	15.30	0.00	20.40	5.40	8.81	3.15	3.15	0.00	0.00	0.00	0.00	11.90	0.00	5.00

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
21	7.60	7.51	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
22	7.51	7.41	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
23	7.41	7.32	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
24	7.32	7.22	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
25	7.22	7.13	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
26	7.13	7.03	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
27	7.03	6.94	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
28	6.94	6.84	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
29	6.84	6.75	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
30	6.75	6.65	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
TOT						1.56			9586.05	8767.93					
AVG					0.00704		1.09	9.23			10.09				
CUM						3.66									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
21	7.505	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
22	7.410	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
23	7.315	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
24	7.220	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
25	7.125	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
26	7.030	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
27	6.935	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
28	6.840	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
29	6.745	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
30	6.650	10.02	0.63	0.08	0.05	0.00	0.25	0.25	0.25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
20 DEG C RATE				0.10		0.00		0.33	0.00		0.00	0.00	0.00	0.00			0.00	5.70		
AVG 20 DEG C RATE			0.70		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
21	7.505	15.30	0.00	20.40	5.40	8.81	3.23	3.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.98
22	7.410	15.30	0.00	20.40	5.40	8.81	3.30	3.30	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.95
23	7.315	15.30	0.00	20.40	5.40	8.80	3.37	3.37	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.92
24	7.220	15.30	0.00	20.40	5.40	8.80	3.44	3.44	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.90
25	7.125	15.30	0.00	20.40	5.40	8.80	3.51	3.51	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.87
26	7.030	15.30	0.00	20.40	5.40	8.80	3.58	3.58	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.85
27	6.935	15.30	0.00	20.40	5.40	8.79	3.64	3.64	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.83
28	6.840	15.30	0.00	20.40	5.40	8.79	3.71	3.71	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.80
29	6.745	15.30	0.00	20.40	5.40	8.79	3.77	3.77	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.78
30	6.650	15.30	0.00	20.40	5.40	8.78	3.83	3.83	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.76

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 4 RKM 6.65-E. OF TOPSY RD. 02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
31	UPR RCH	0.07100	15.30	0.00	20.40	5.40	8.78	3.83	3.83	0.00	0.00	0.00	0.00	11.90	0.00	4.76

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
31	6.65	6.52	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
32	6.52	6.39	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
33	6.39	6.26	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
34	6.26	6.13	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
35	6.13	6.00	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
TOT						1.07			6558.87	5999.11					
AVG					0.00704		1.09	9.23			10.09				
CUM						4.73									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
31	6.520	10.02	0.63	0.08	0.05	0.00	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
32	6.390	10.02	0.63	0.08	0.05	0.00	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
33	6.260	10.02	0.63	0.08	0.05	0.00	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
34	6.130	10.02	0.63	0.08	0.05	0.00	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
35	6.000	10.02	0.63	0.08	0.05	0.00	0.30	0.30	0.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
20 DEG C RATE				0.10		0.00		0.41	0.00		0.00	0.00	0.00	0.00			0.00	5.66		
AVG 20 DEG C RATE			0.70		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
31	6.520	15.30	0.00	20.40	5.40	8.77	3.90	3.90	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.72
32	6.390	15.30	0.00	20.40	5.40	8.75	3.97	3.97	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.68
33	6.260	15.30	0.00	20.40	5.40	8.74	4.04	4.04	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.65
34	6.130	15.30	0.00	20.40	5.40	8.73	4.10	4.10	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.62
35	6.000	15.30	0.00	20.40	5.40	8.71	4.16	4.16	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.58

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
36	UPR RCH	0.07100	15.30	0.00	20.40	5.40	8.71	4.16	4.16	0.00	0.00	0.00	0.00	11.90	0.00	4.58

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
36	6.00	5.90	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
37	5.90	5.80	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
38	5.80	5.70	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
39	5.70	5.60	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
40	5.60	5.50	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
41	5.50	5.40	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
42	5.40	5.30	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
43	5.30	5.20	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
TOT						1.47			9017.48	9267.00					
AVG					0.00630		0.97	11.58			11.27				
CUM						6.20									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
36	5.900	10.02	0.70	0.08	0.05	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
37	5.800	10.02	0.70	0.08	0.05	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
38	5.700	10.02	0.70	0.08	0.05	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
39	5.600	10.02	0.70	0.08	0.05	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
40	5.500	10.02	0.70	0.08	0.05	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
41	5.400	10.02	0.70	0.08	0.05	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
42	5.300	10.02	0.70	0.08	0.05	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
43	5.200	10.02	0.70	0.08	0.05	0.00	0.44	0.44	0.44	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
20 DEG C RATE				0.10		0.00		0.59	0.00		0.00	0.00	0.00	0.00			0.00	5.62		
AVG 20 DEG C RATE			0.77		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM	ENDING	TEMP	SALN	CM-I	CM-II	DO	BOD	EBOD	ORGN	NH3	NO3+2	TOTN	PHOS	CHL A	MACRO	COLI	NCM

NO.	DIST	DEG C	PPT	*	*	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	**	#/100mL	*
36	5.900	15.30	0.00	20.40	5.40	8.69	4.21	4.21	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.55
37	5.800	15.30	0.00	20.40	5.40	8.67	4.26	4.26	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.52
38	5.700	15.30	0.00	20.40	5.40	8.65	4.31	4.31	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.49
39	5.600	15.30	0.00	20.40	5.40	8.64	4.35	4.35	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.45
40	5.500	15.30	0.00	20.40	5.40	8.62	4.40	4.40	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.42
41	5.400	15.30	0.00	20.40	5.40	8.61	4.44	4.44	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.39
42	5.300	15.30	0.00	20.40	5.40	8.60	4.48	4.48	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.36
43	5.200	15.30	0.00	20.40	5.40	8.59	4.52	4.52	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.33

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 6   RKM 5.2-UT LDB   02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
44	UPR RCH	0.07100	15.30	0.00	20.40	5.40	8.59	4.52	4.52	0.00	0.00	0.00	0.00	11.90	0.00	4.33

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
44	5.20	5.10	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
45	5.10	5.00	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
46	5.00	4.90	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
47	4.90	4.80	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
48	4.80	4.70	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
49	4.70	4.60	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
50	4.60	4.50	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
51	4.50	4.40	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
52	4.40	4.30	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
53	4.30	4.20	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
TOT						2.04			12538.81	13583.75					
AVG					0.00566		0.92	13.58			12.54				
CUM						8.24									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT

		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
44	5.100	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
45	5.000	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
46	4.900	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
47	4.800	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
48	4.700	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
49	4.600	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
50	4.500	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
51	4.400	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
52	4.300	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
53	4.200	10.02	0.73	0.08	0.05	0.00	0.58	0.58	0.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
20 DEG C RATE				0.10		0.00		0.78	0.00		0.00	0.00	0.00	0.00			0.00	5.58		
AVG 20 DEG C RATE			0.81		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
44	5.100	15.30	0.00	20.40	5.40	8.55	4.55	4.55	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.29
45	5.000	15.30	0.00	20.40	5.40	8.52	4.57	4.57	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.25
46	4.900	15.30	0.00	20.40	5.40	8.49	4.59	4.59	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.21
47	4.800	15.30	0.00	20.40	5.40	8.47	4.62	4.62	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.17
48	4.700	15.30	0.00	20.40	5.40	8.45	4.64	4.64	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.13
49	4.600	15.30	0.00	20.40	5.40	8.44	4.66	4.66	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.09
50	4.500	15.30	0.00	20.40	5.40	8.42	4.68	4.68	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.05
51	4.400	15.30	0.00	20.40	5.40	8.41	4.70	4.70	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.01
52	4.300	15.30	0.00	20.40	5.40	8.40	4.72	4.72	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.98
53	4.200	15.30	0.00	20.40	5.40	8.39	4.74	4.74	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.94

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 7   UT LDB-SITE 3   02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
54	UPR RCH	0.07100	15.30	0.00	20.40	5.40	8.39	4.74	4.74	0.00	0.00	0.00	0.00	11.90	0.00	3.94

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
54	4.20	4.10	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
55	4.10	4.00	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
56	4.00	3.90	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
57	3.90	3.80	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
58	3.80	3.70	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
59	3.70	3.60	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
60	3.60	3.50	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
61	3.50	3.40	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
62	3.40	3.30	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
TOT						1.73			10627.46	12637.69					
AVG					0.00601		0.84	14.04			11.81				
CUM						9.98									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
54	4.100	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
55	4.000	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
56	3.900	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
57	3.800	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
58	3.700	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
59	3.600	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
60	3.500	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
61	3.400	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
62	3.300	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
20 DEG C RATE				0.13		0.00		0.80	0.00		0.00	0.00	0.00	0.00			0.00	5.55		
AVG 20 DEG C RATE			0.89		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
54	4.100	15.30	0.00	20.40	5.40	8.36	4.74	4.74	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.89
55	4.000	15.30	0.00	20.40	5.40	8.34	4.75	4.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.84
56	3.900	15.30	0.00	20.40	5.40	8.32	4.75	4.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.79
57	3.800	15.30	0.00	20.40	5.40	8.30	4.75	4.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.74
58	3.700	15.30	0.00	20.40	5.40	8.29	4.75	4.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.70
59	3.600	15.30	0.00	20.40	5.40	8.27	4.76	4.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.65
60	3.500	15.30	0.00	20.40	5.40	8.26	4.76	4.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.61
61	3.400	15.30	0.00	20.40	5.40	8.26	4.76	4.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.56

62	3.300	15.30	0.00	20.40	5.40	8.25	4.76	4.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.52

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 8   SITE 3-LITTLE MARSH B.   02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
63	UPR RCH	0.07100	15.30	0.00	20.40	5.40	8.25	4.76	4.76	0.00	0.00	0.00	0.00	11.90	0.00	3.52

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
63	3.30	3.20	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
64	3.20	3.10	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
65	3.10	3.00	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
66	3.00	2.90	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
67	2.90	2.80	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
TOT						0.96			5904.15	7020.94					
AVG					0.00601		0.84	14.04			11.81				
CUM						10.94									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
63	3.200	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
64	3.100	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
65	3.000	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
66	2.900	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
67	2.800	10.02	0.81	0.10	0.06	0.00	0.60	0.60	0.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
20 DEG C RATE				0.13		0.00		0.81	0.00		0.00	0.00	0.00	0.00			0.00	5.51		
AVG 20 DEG C RATE			0.89		0.07					0.00									0.04	

* g/sq m/d   ** mg/L/day

WATER QUALITY CONSTITUENT VALUES

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
63	3.200	15.30	0.00	20.40	5.40	8.24	4.77	4.77	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.47
64	3.100	15.30	0.00	20.40	5.40	8.24	4.77	4.77	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.43
65	3.000	15.30	0.00	20.40	5.40	8.24	4.77	4.77	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.39
66	2.900	15.30	0.00	20.40	5.40	8.23	4.77	4.77	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.35
67	2.800	15.30	0.00	20.40	5.40	8.22	4.76	4.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.29

* CM-I = CHLORIDES MG/L　　CM-II = SULFATES MG/L　　NCM = NBOD MG/L

** g/cu m

FINAL REPORT　Marsh @ Welcome Rd.　　MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A

REACH NO. 9　LITTLE MARSH B.-BEAVER DAM　　02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

REACH INPUTS

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
68	UPR RCH	0.07100	15.30	0.00	20.40	5.40	8.22	4.76	4.76	0.00	0.00	0.00	0.00	11.90	0.00	3.29

HYDRAULIC PARAMETER VALUES

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
68	2.80	2.75	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
69	2.75	2.70	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
70	2.70	2.65	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
71	2.65	2.60	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
72	2.60	2.55	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
TOT						1.64			10047.84	6849.14					
AVG					0.00177		1.47	27.40			40.19				
CUM						12.58									

BIOLOGICAL AND PHYSICAL COEFFICIENTS

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
68	2.750	10.02	0.43	0.10	0.06	0.00	0.57	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
69	2.700	10.02	0.43	0.10	0.06	0.00	0.57	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
70	2.650	10.02	0.43	0.10	0.06	0.00	0.57	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03

71	2.600	10.02	0.43	0.10	0.06	0.00	0.57	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
72	2.550	10.02	0.43	0.10	0.06	0.00	0.57	0.57	0.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
20 DEG C RATE				0.13		0.00		0.76	0.00		0.00	0.00	0.00	0.00			0.00	5.48		
AVG 20 DEG C RATE			0.48		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
68	2.750	15.30	0.00	20.40	5.40	8.11	4.66	4.66	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.14
69	2.700	15.30	0.00	20.40	5.40	8.04	4.59	4.59	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.04
70	2.650	15.30	0.00	20.39	5.40	8.00	4.51	4.51	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.92
71	2.600	15.30	0.00	20.38	5.40	8.00	4.39	4.39	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.78
72	2.550	15.30	0.00	20.34	5.39	8.11	4.14	4.14	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.55

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 10 BEAVER DAM 02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
73	UPR RCH	0.07100	15.30	0.00	20.34	5.39	8.11	4.14	4.14	0.00	0.00	0.00	0.00	11.90	0.00	2.55

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
73	2.55	2.55	0.07100	0.00	0.00381	0.00	0.65	28.73	18.62	28.73	18.62	0.00	0.000	0.500	0.004
TOT						0.00			18.62	28.73					
AVG					0.00381		0.65	28.73			18.62				
CUM						12.58									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT

		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
73	2.549	9.31	488.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20 DEG C RATE				0.00		0.00		0.00	0.00		0.00	0.00	0.00	0.00			0.00	5.44		
AVG 20 DEG C RATE			500.00		0.00					0.00									0.00	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
73	2.549	18.80	0.00	20.28	5.38	8.29	3.86	3.86	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.33

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 11 BEAVER DAM-RKM 2.0 02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
74	UPR RCH	0.07100	18.80	0.00	20.28	5.38	8.29	3.86	3.86	0.00	0.00	0.00	0.00	11.90	0.00	2.33

*** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
74	2.55	2.44	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002
75	2.44	2.33	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002
76	2.33	2.22	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002
77	2.22	2.11	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002
78	2.11	2.00	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002
TOT						2.69			16474.07	15068.11					
AVG					0.00237		1.09	27.40			29.95				
CUM						15.26									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM ENDING SAT REAER CBOD CBOD ANBOD BKGD FULL CORR ORGN ORGN NH3 NH3 DENIT PO4 ALG MAC COLI NCM NCM

NO.	DIST	D.O. mg/L	RATE 1/da	DECAY 1/da	SETT 1/da	DECAY 1/da	SOD *	SOD *	SOD *	DECAY 1/da	SETT 1/da	DECAY 1/da	SRCE *	RATE 1/da	SRCE *	PROD **	PROD **	DECAY 1/da	DECAY 1/da	SETT 1/da
74	2.440	9.31	0.63	0.14	0.08	0.00	1.03	1.03	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
75	2.330	9.31	0.63	0.14	0.08	0.00	1.03	1.03	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
76	2.220	9.31	0.63	0.14	0.08	0.00	1.03	1.03	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
77	2.110	9.31	0.63	0.14	0.08	0.00	1.03	1.03	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
78	2.000	9.31	0.63	0.14	0.08	0.00	1.03	1.03	1.03	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
20 DEG C RATE				0.15		0.00		1.11	0.00		0.00	0.00	0.00	0.00			0.00	5.39		
AVG 20 DEG C RATE			0.64		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
74	2.440	18.80	0.00	20.27	5.38	8.13	3.77	3.77	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.25
75	2.330	18.80	0.00	20.23	5.37	7.91	3.63	3.63	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.13
76	2.220	18.80	0.00	20.18	5.36	7.75	3.50	3.50	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.01
77	2.110	18.80	0.00	20.11	5.35	7.64	3.39	3.39	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.90
78	2.000	18.80	0.00	20.03	5.33	7.59	3.30	3.30	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.79

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 12 RKM 2.0-UT LDB 02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
79	UPR RCH	0.07100	18.80	0.00	20.03	5.33	7.59	3.30	3.30	0.00	0.00	0.00	0.00	11.90	0.00	1.79

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
79	2.00	1.90	0.07100	0.00	0.00210	0.55	1.19	28.40	3388.58	2839.66	33.89	0.00	0.000	0.900	0.002
80	1.90	1.80	0.07100	0.00	0.00210	0.55	1.19	28.40	3388.58	2839.66	33.89	0.00	0.000	0.900	0.002
81	1.80	1.70	0.07100	0.00	0.00210	0.55	1.19	28.40	3388.58	2839.66	33.89	0.00	0.000	0.900	0.002
82	1.70	1.60	0.07100	0.00	0.00210	0.55	1.19	28.40	3388.58	2839.66	33.89	0.00	0.000	0.900	0.002

TOT		2.21			13554.33	11358.62	
AVG	0.00210		1.19	28.40			33.89
CUM		17.47					

** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
79	1.900	9.31	0.57	0.14	0.08	0.00	0.80	0.80	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
80	1.800	9.31	0.57	0.14	0.08	0.00	0.80	0.80	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
81	1.700	9.31	0.57	0.14	0.08	0.00	0.80	0.80	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
82	1.600	9.31	0.57	0.14	0.08	0.00	0.80	0.80	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
20 DEG C RATE				0.15		0.00		0.86	0.00		0.00	0.00	0.00	0.00			0.00	5.35		
AVG 20 DEG C RATE			0.59		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
79	1.900	18.80	0.00	19.93	5.31	7.60	3.23	3.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.69
80	1.800	18.80	0.00	19.83	5.29	7.64	3.17	3.17	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.60
81	1.700	18.80	0.00	19.69	5.27	7.74	3.11	3.11	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.51
82	1.600	18.80	0.00	19.53	5.24	7.90	3.06	3.06	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.43

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 13   UT LDB-NATURAL DIV. TO CAL.R.   02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
83	UPR RCH	0.07100	18.80	0.00	19.53	5.24	7.90	3.06	3.06	0.00	0.00	0.00	0.00	11.90	0.00	1.43

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s

83	1.60	1.50	0.07100	0.00	0.00186	0.62	1.32	28.90	3823.90	2889.66	38.24	0.00	0.000	0.950	0.002
84	1.50	1.40	0.07100	0.00	0.00186	0.62	1.32	28.90	3823.90	2889.66	38.24	0.00	0.000	0.950	0.002
85	1.40	1.30	0.07100	0.00	0.00186	0.62	1.32	28.90	3823.90	2889.66	38.24	0.00	0.000	0.950	0.002
TOT						1.87			11471.71	8668.97					
AVG					0.00186		1.32	28.90			38.24				
CUM						19.34									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
83	1.500	9.31	1.70	0.14	0.08	0.00	0.75	0.75	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
84	1.400	9.31	1.70	0.14	0.08	0.00	0.75	0.75	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
85	1.300	9.31	1.70	0.14	0.08	0.00	0.75	0.75	0.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
20 DEG C RATE				0.15		0.00		0.81	0.00		0.00	0.00	0.00	0.00			0.00	5.30		
AVG 20 DEG C RATE			1.74		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
83	1.500	18.80	0.00	19.34	5.20	8.14	3.00	3.00	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.35
84	1.400	18.80	0.00	19.14	5.17	8.30	2.95	2.95	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.28
85	1.300	18.80	0.00	18.89	5.12	8.41	2.90	2.90	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.22

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 14 NAT. DIV. TO CAL.R.-RKM RKM 0.8 02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
86	UPR RCH	0.07100	18.80	0.00	18.89	5.12	8.41	2.90	2.90	0.00	0.00	0.00	0.00	11.90	0.00	1.22

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
86	1.30	1.20	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	0.002
87	1.20	1.10	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	0.002
88	1.10	1.00	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	0.002
89	1.00	0.90	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	0.002
90	0.90	0.80	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	0.002
TOT						3.19			19597.33	14698.28					
AVG					0.00181		1.33	29.40			39.19				
CUM						22.54									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
86	1.200	9.31	1.68	0.14	0.08	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
87	1.100	9.31	1.68	0.14	0.08	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
88	1.000	9.31	1.68	0.14	0.08	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
89	0.900	9.31	1.68	0.14	0.08	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
90	0.800	9.31	1.68	0.14	0.08	0.00	0.83	0.83	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
20 DEG C RATE				0.15		0.00		0.90	0.00		0.00	0.00	0.00	0.00			0.00	5.26		
AVG 20 DEG C RATE			1.73		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
86	1.200	18.80	0.00	18.61	5.07	8.48	2.84	2.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.16
87	1.100	18.80	0.00	18.28	5.01	8.53	2.80	2.80	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.10
88	1.000	18.80	0.00	17.90	4.94	8.57	2.76	2.76	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.05
89	0.900	18.80	0.00	17.44	4.85	8.60	2.73	2.73	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.99
90	0.800	18.80	0.00	16.91	4.75	8.62	2.70	2.70	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	0.94

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
REACH NO. 15 UPPER OUTLET-LOWER OUTLET 02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

*** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
91	UPR RCH	0.07100	18.80	0.00	16.91	4.75	8.62	2.70	2.70	0.00	0.00	0.00	0.00	11.90	0.00	0.94

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
91	0.80	0.70	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
92	0.70	0.60	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
93	0.60	0.50	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
94	0.50	0.40	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
95	0.40	0.30	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
96	0.30	0.20	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
97	0.20	0.10	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
98	0.10	0.00	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
TOT						5.24			32128.22	23917.25					
AVG					0.00177		1.34	29.90			40.16				
CUM						27.78									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
91	0.700	9.31	1.67	0.14	0.08	0.00	0.94	0.94	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
92	0.600	9.31	1.67	0.14	0.08	0.00	0.94	0.94	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
93	0.500	9.31	1.67	0.14	0.08	0.00	0.94	0.94	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
94	0.400	9.31	1.67	0.14	0.08	0.00	0.94	0.94	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
95	0.300	9.31	1.67	0.14	0.08	0.00	0.94	0.94	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
96	0.200	9.31	1.67	0.14	0.08	0.00	0.94	0.94	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
97	0.100	9.31	1.67	0.14	0.08	0.00	0.94	0.94	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
98	0.000	9.31	1.67	0.14	0.08	0.00	0.94	0.94	0.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
20 DEG C RATE				0.15		0.00		1.01	0.00		0.00	0.00	0.00	0.00			0.00	5.21		
AVG 20 DEG C RATE			1.71		0.08					0.00									0.04	

* g/sq m/d   ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
91	0.700	18.80	0.00	16.28	4.64	8.63	2.69	2.69	0.00	0.00	0.00	0.00	0.01	10.90	0.00	0.00	0.88

92	0.600	18.80	0.00	15.56	4.50	8.64	2.68	2.68	0.00	0.00	0.01	0.01	0.03	9.91	0.00	0.00	0.83
93	0.500	18.80	0.00	14.70	4.34	8.66	2.70	2.70	0.00	0.00	0.01	0.01	0.04	8.91	0.00	0.00	0.77
94	0.400	18.80	0.00	13.69	4.15	8.69	2.74	2.74	0.00	0.00	0.01	0.01	0.06	7.91	0.00	0.00	0.71
95	0.300	18.80	0.00	12.51	3.93	8.74	2.82	2.82	0.00	0.00	0.02	0.02	0.07	6.92	0.00	0.00	0.65
96	0.200	18.80	0.00	11.11	3.68	8.81	2.92	2.92	0.00	0.00	0.02	0.02	0.09	5.92	0.00	0.00	0.58
97	0.100	18.80	0.00	9.47	3.37	8.93	3.07	3.07	0.00	0.00	0.03	0.03	0.10	4.93	0.00	0.00	0.50
98	0.000	18.80	0.00	7.54	3.01	9.14	3.28	3.28	0.00	0.00	0.03	0.03	0.12	3.93	0.00	0.00	0.41

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* CM-I = CHLORIDES              CM-II = SULFATES              NCM = NBOD
         MG/L                           MG/L                        MG/L
** g/cu m
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STREAM SUMMARY                                   MARSH B.WATERSHED WINTER PROJ.MODEL(FROM CAL.MODEL #2);MOS NOT A
Marsh @ Welcome Rd.                              02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C.

 TRAVEL TIME      =          27.78 DAYS

 MAXIMUM EFFLUENT =           0.00 PERCENT

 FLOW              =  0.07100 TO   0.07100 cms
 DISPERSION        =  0.0000  TO   1.0000  sq m/s
 VELOCITY          =  0.00177 TO   0.01254 m/s
 DEPTH             =  0.65    TO   1.47    m
 WIDTH             =  5.72    TO  29.90    m

 BOD DECAY         =   0.00   TO   0.14    per day
 NH3 DECAY         =   0.00   TO   0.00    per day
 SDMNT OXYGEN DMND=    0.00   TO   1.03    g/sq m/d
 NH3 SOURCE        =   0.00   TO   0.00    g/sq m/d
 REAERATION        =   0.43   TO 488.11    per day
 BOD SETTLING      =   0.00   TO   0.08    per day
 ORGN DECAY        =   0.00   TO   0.00    per day
 ORGN SETTLING     =   0.00   TO   0.00    per day

 TEMPERATURE       =  15.30   TO  18.80    deg C
 DISSOLVED OXYGEN =    7.59   TO   9.92    mg/L


     .....EXECUTION COMPLETED
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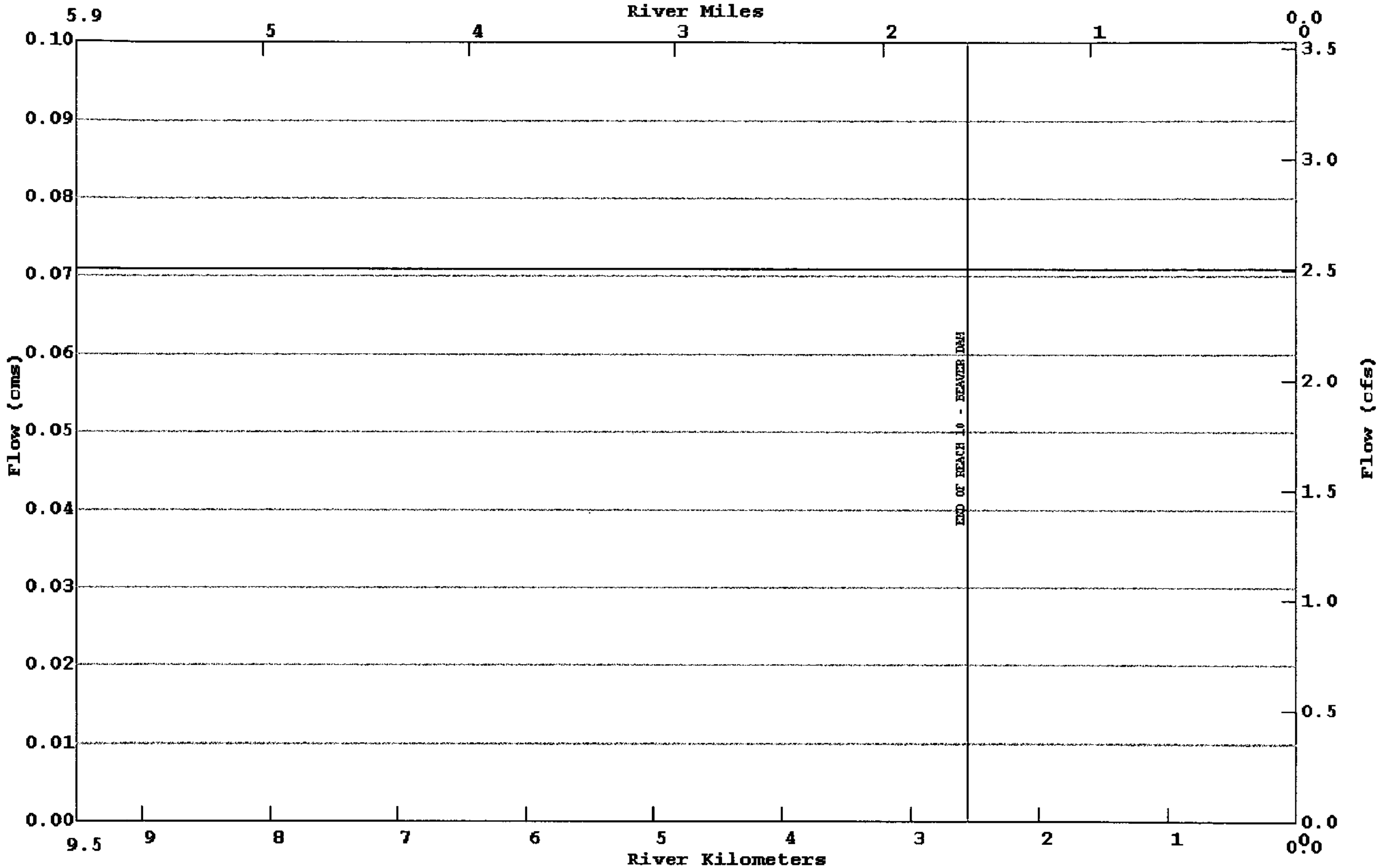
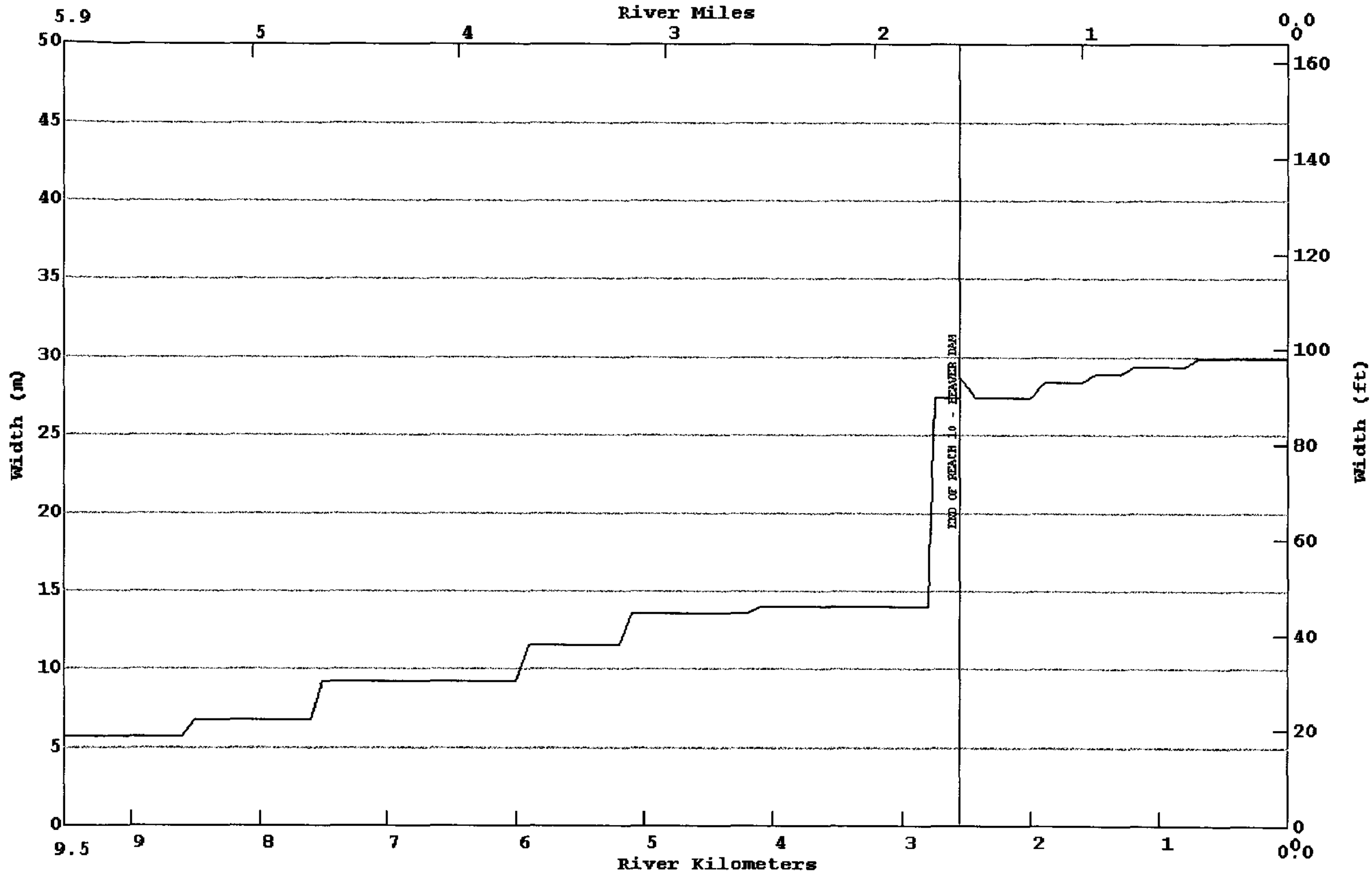
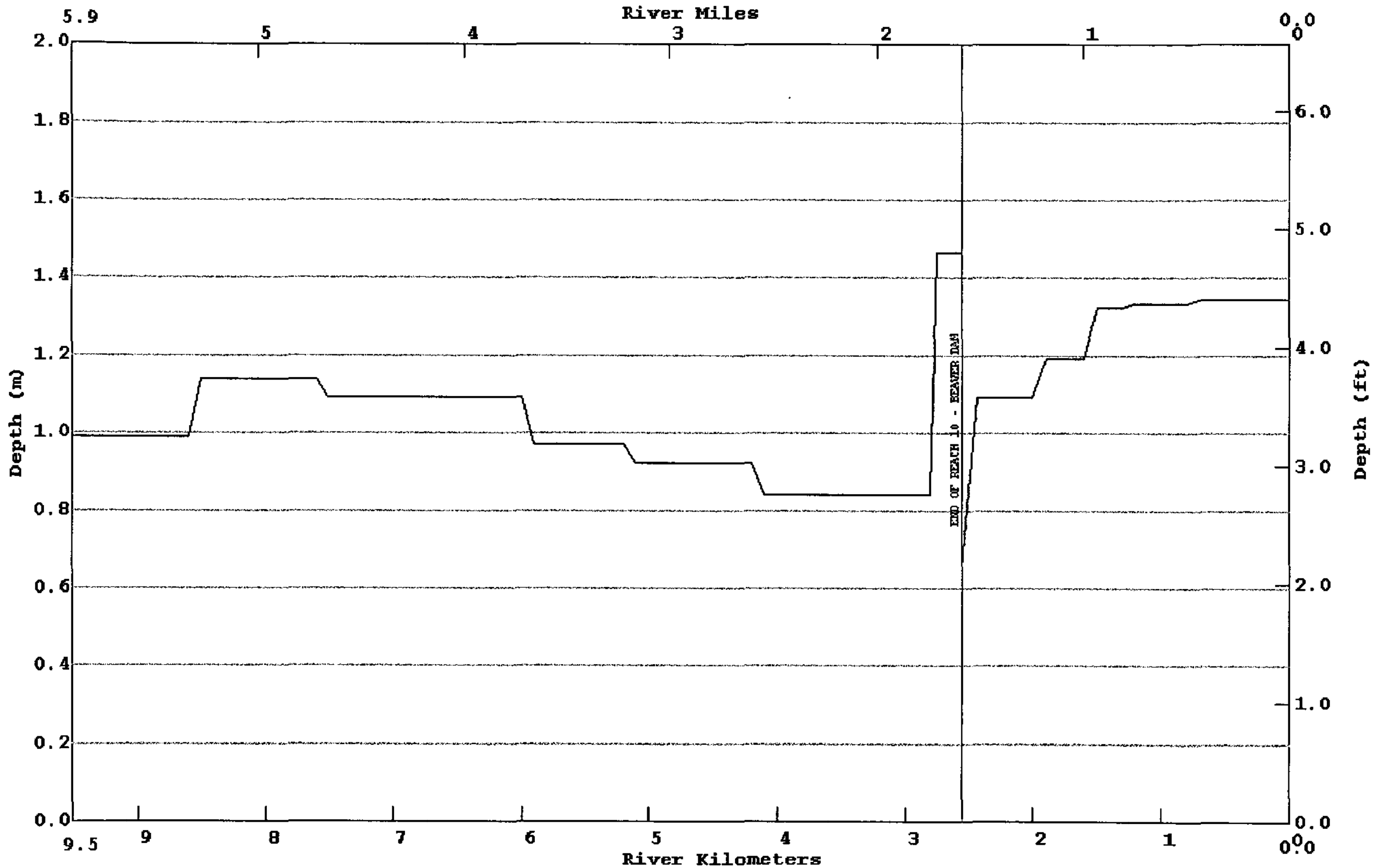
LA-QUAL Version 4.10 Run at 14:47 on 04/04/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100
02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C. min= 0.07 max= 0.07
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 14:47 on 04/04/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100
02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C. min= 5.72 max= 29.90
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 14:47 on 04/04/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100
02/23/01;WIN PROJ.;100%RED.MAN-MADE LOAD;20%RED.BACKGROUND; W.C. min= 0.65 max= 1.47
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 14:47 on 04/04/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\No MOS_100
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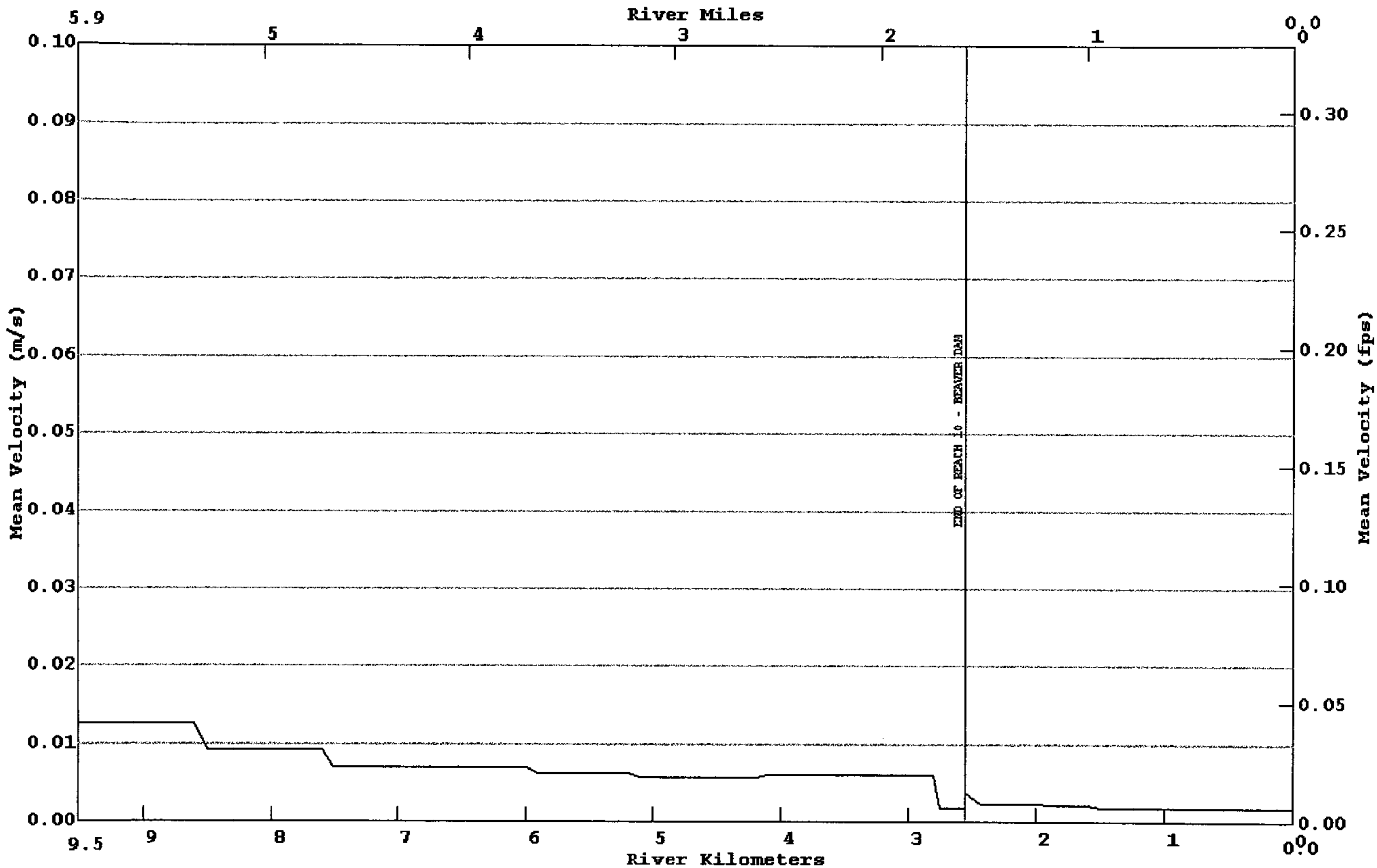
Marsh Bayou: Welcome Rd.-Calcasieu R.



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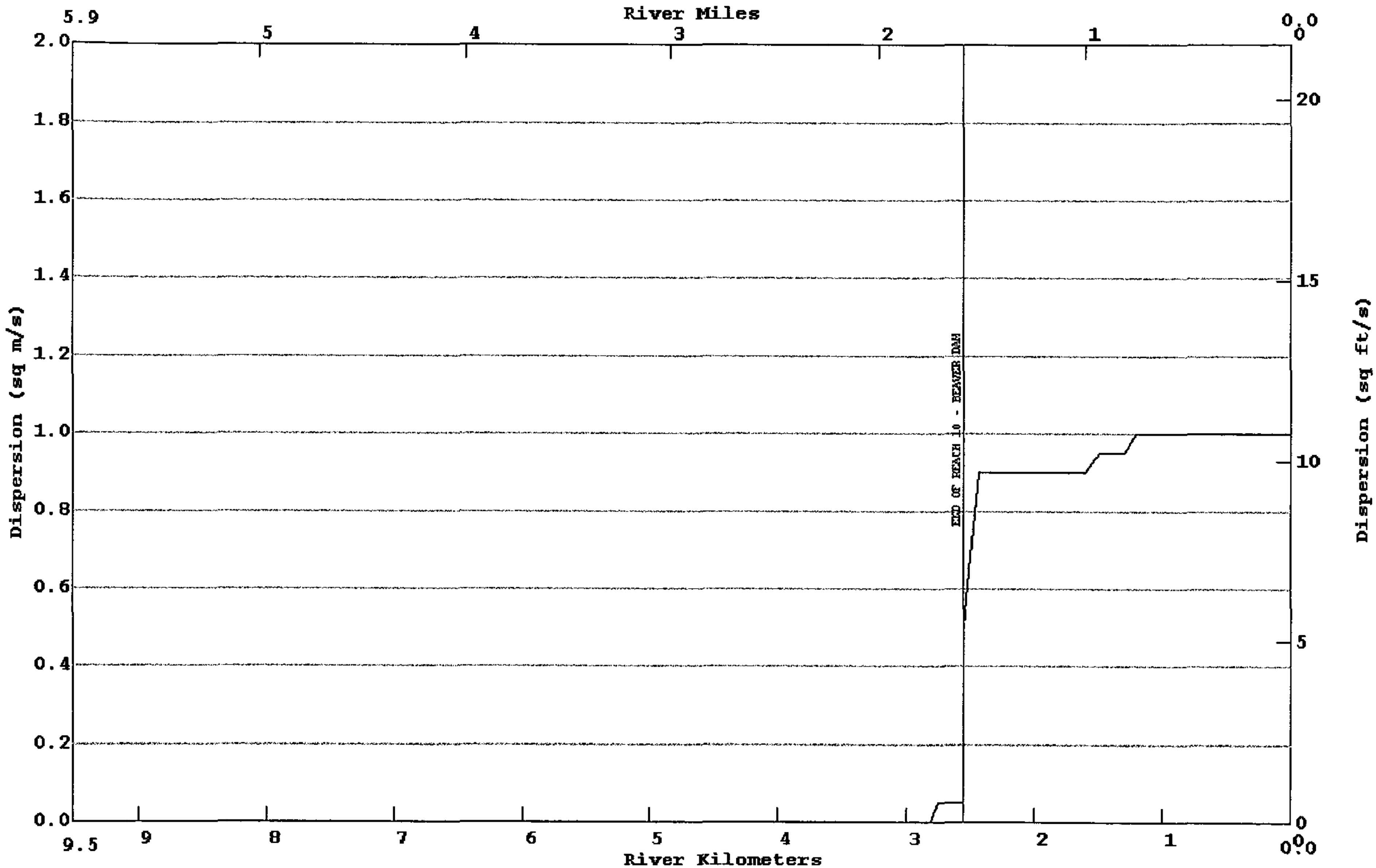
Marsh Bayou: Welcome Rd.-Calcasieu R.



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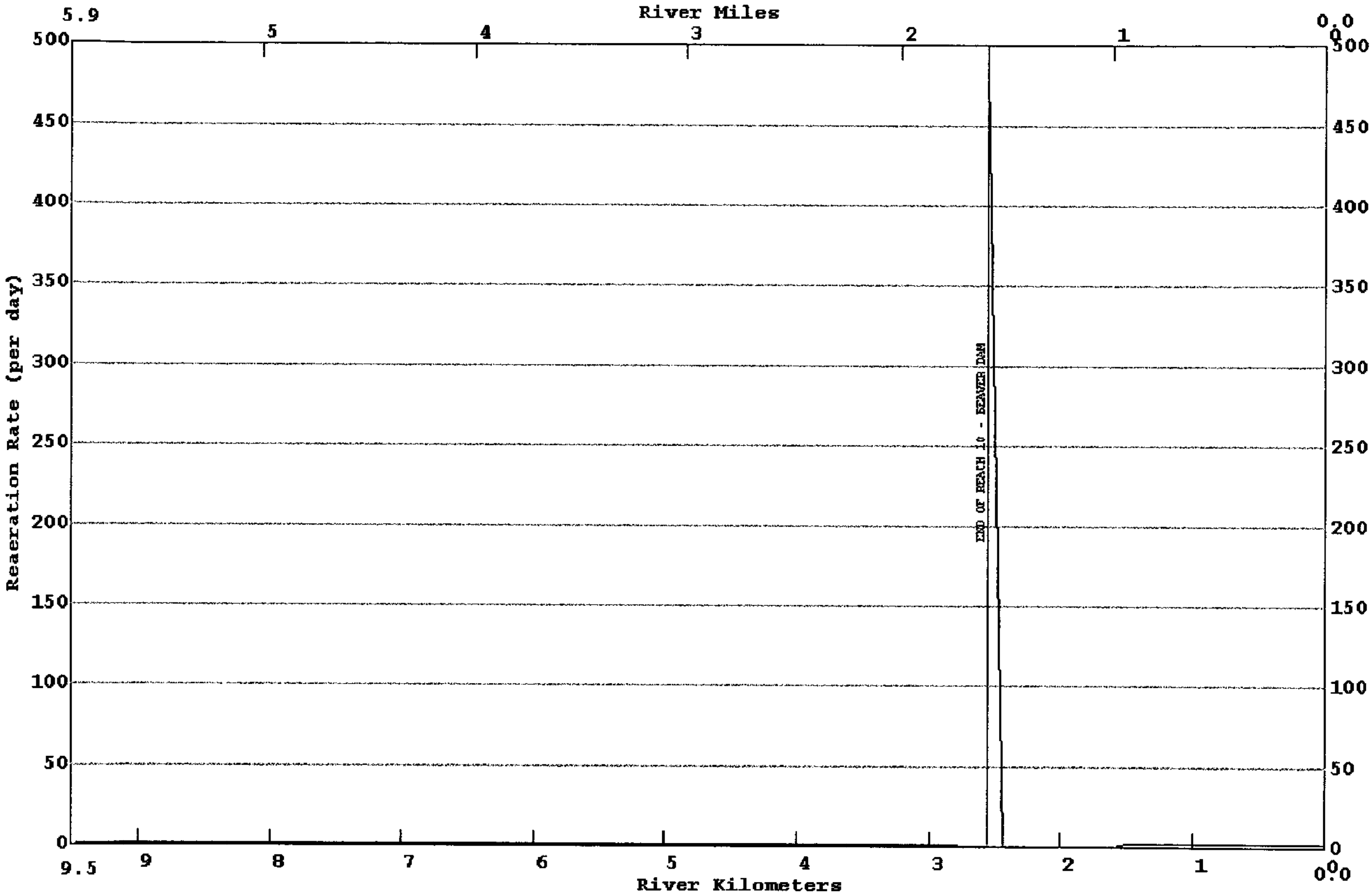
Marsh Bayou: Welcome Rd.-Calcasieu R.



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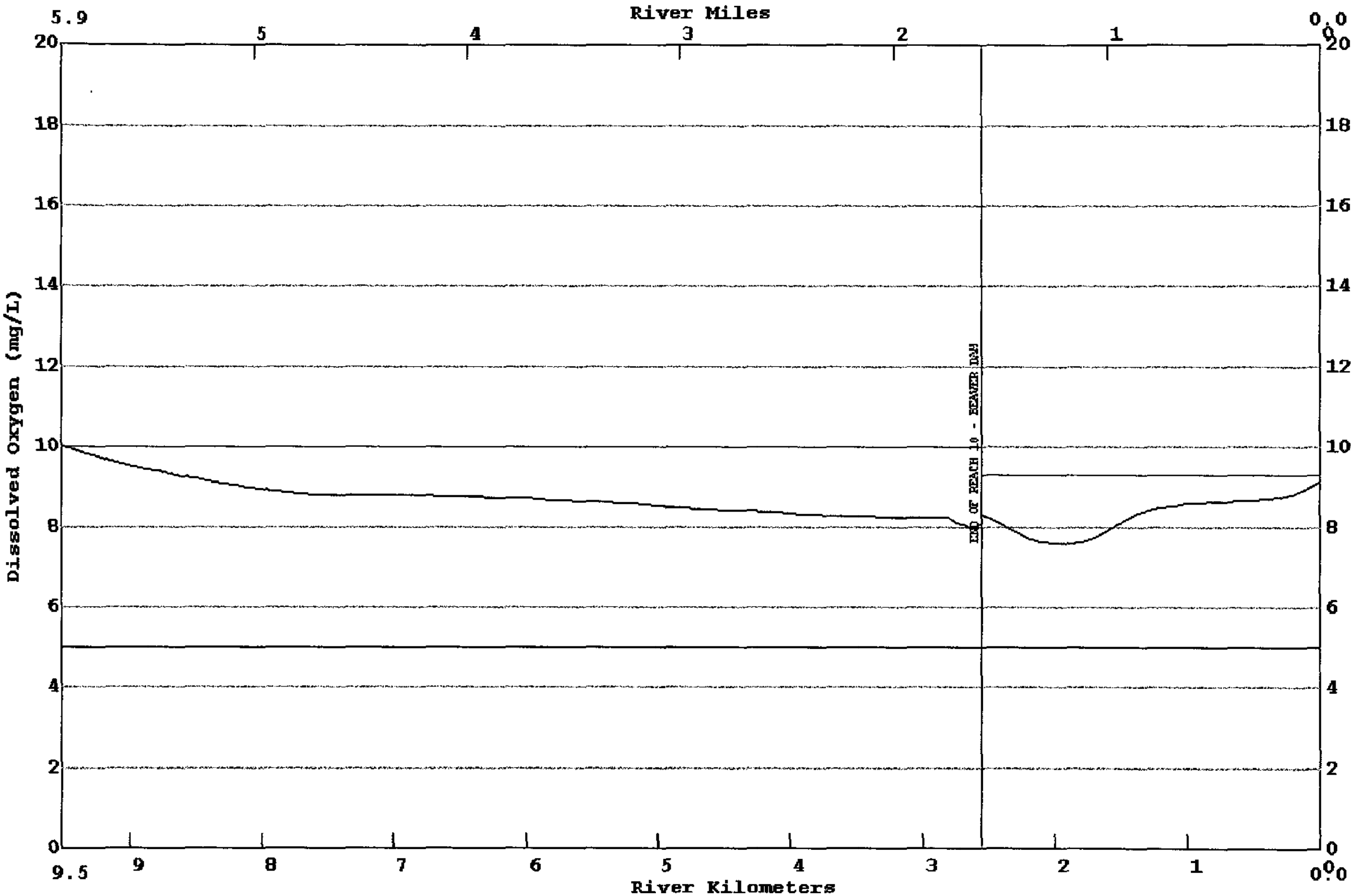
Marsh Bayou: Welcome Rd.-Calcasieu R.



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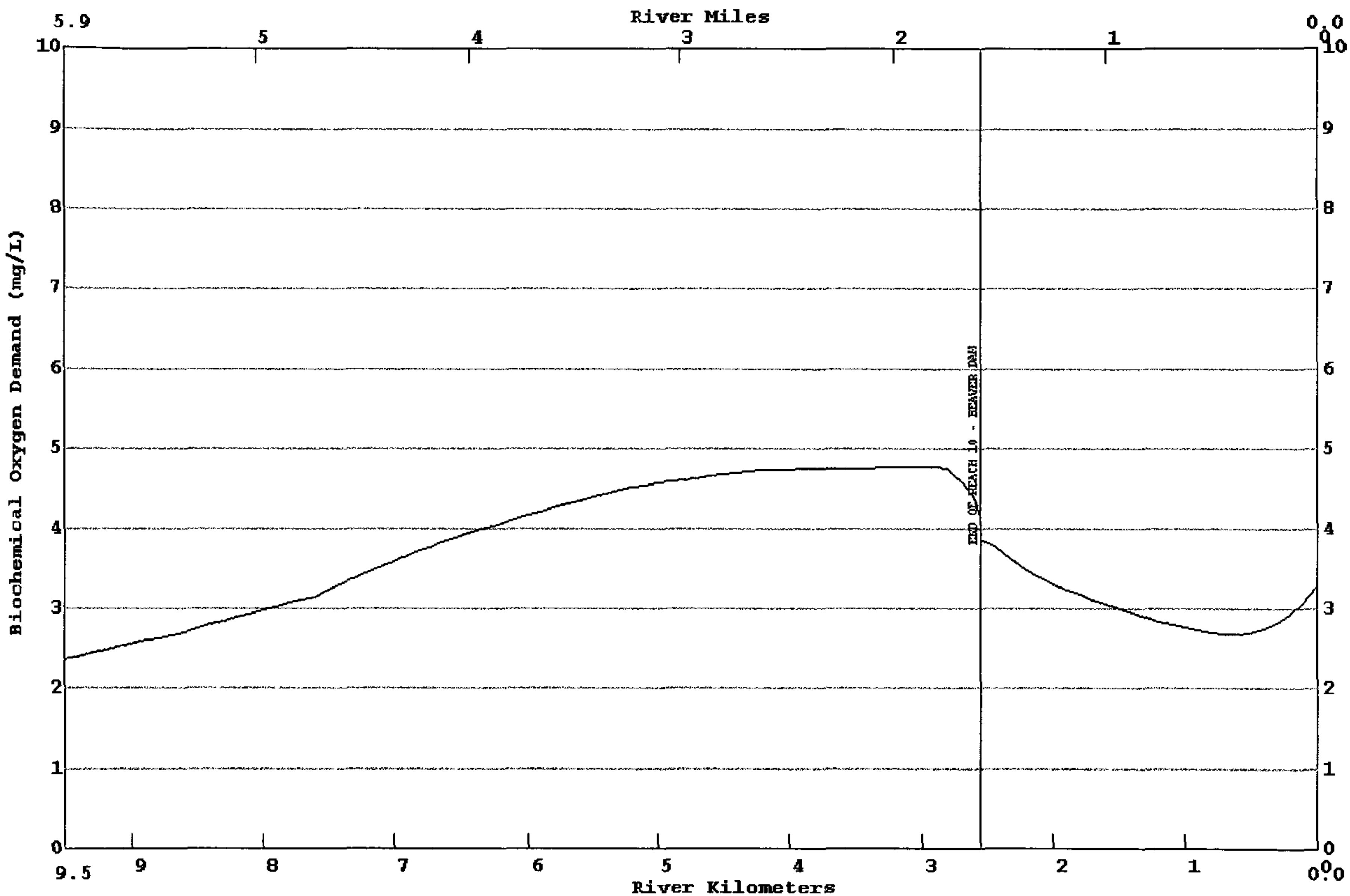
Marsh Bayou: Welcome Rd.-Calcasieu R.



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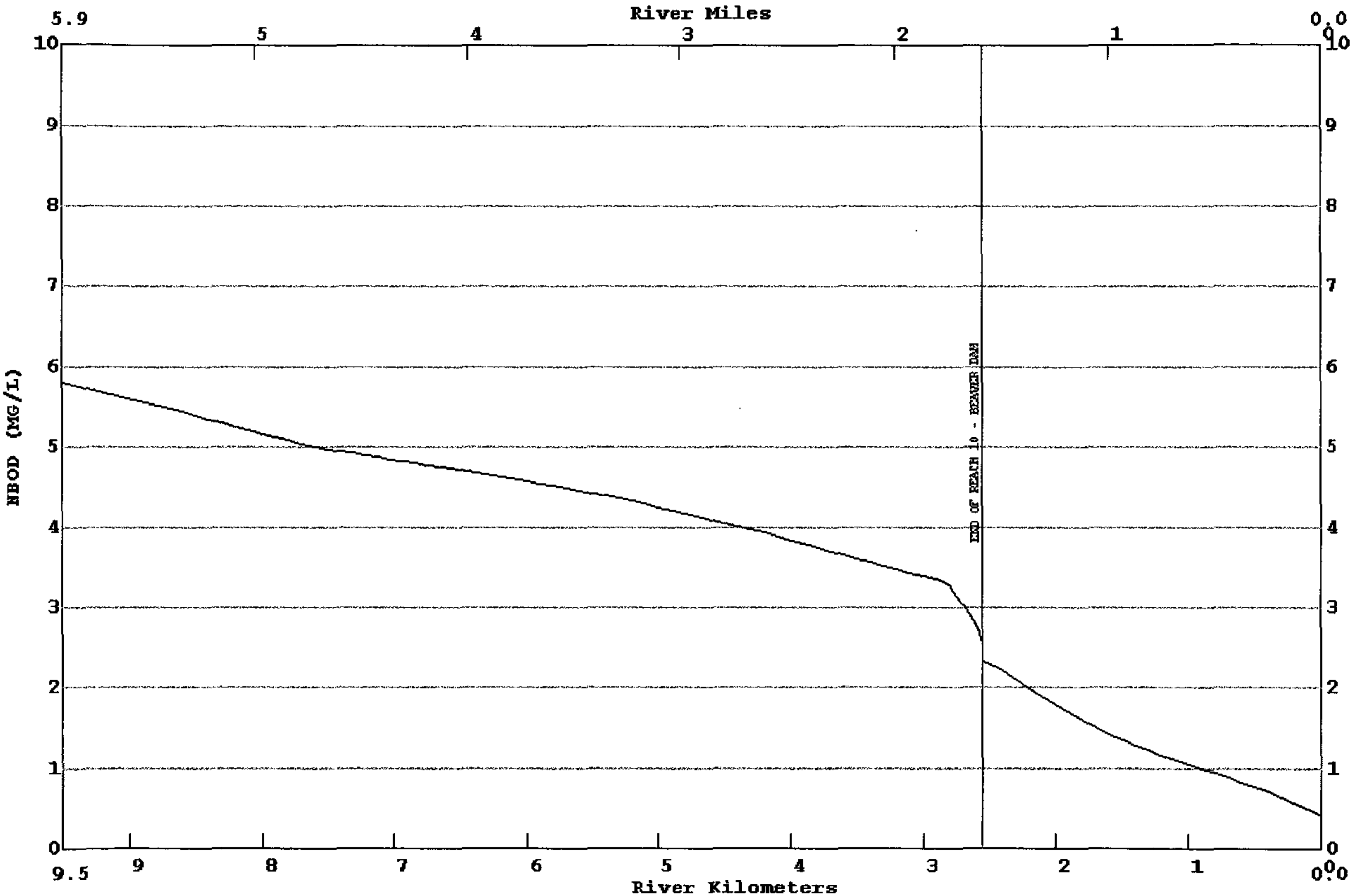
Marsh Bayou: Welcome Rd.-Calcasieu R.



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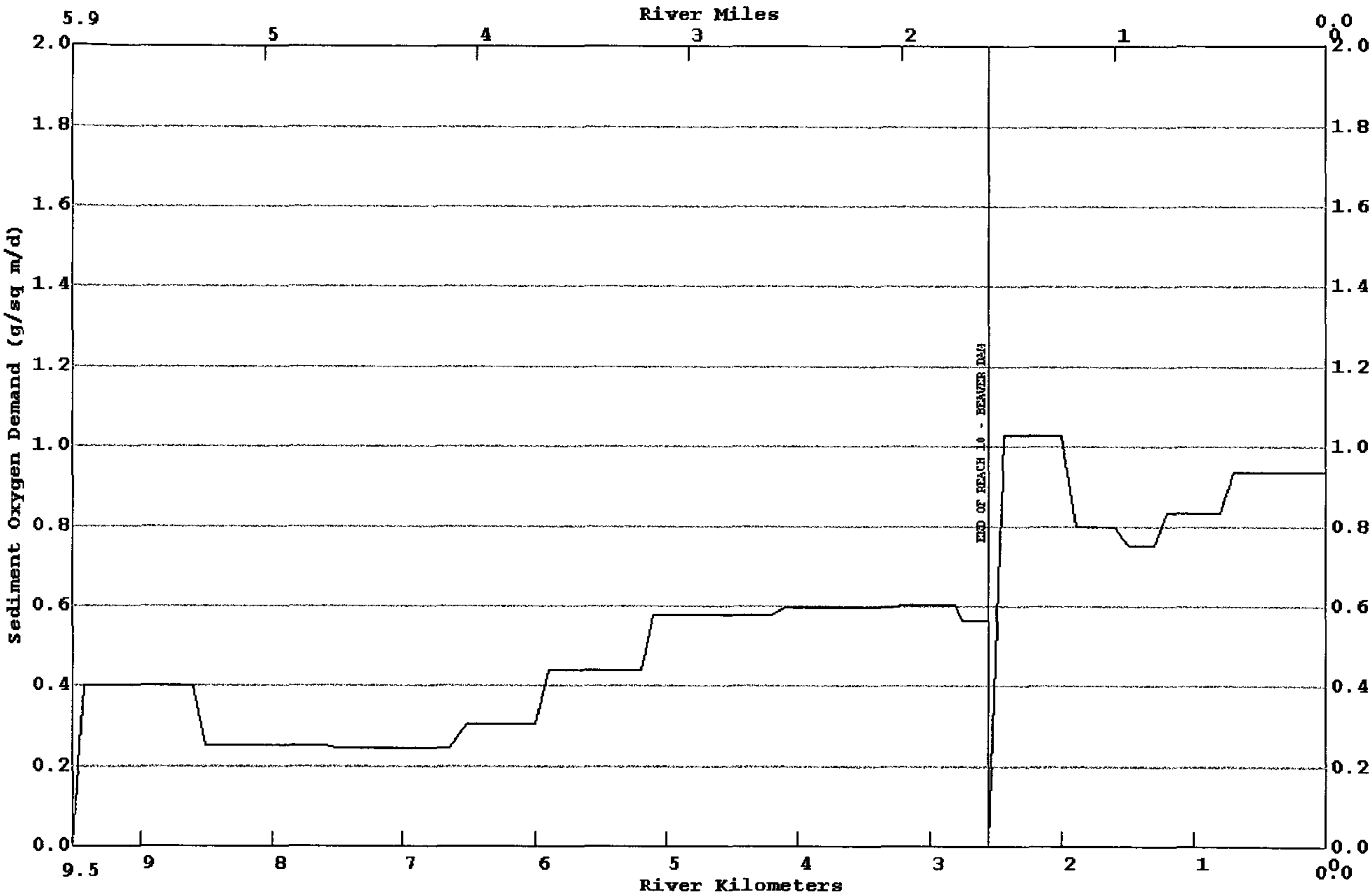
Marsh Bayou: Welcome Rd.-Calcasieu R.



Marsh Bayou Winter Water Quality Model Input Description
(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 9, Advective Hydraulic Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Width "a"	Unitless	4.450	Determined by Best Professional Judgement (BPJ) and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	4.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.400	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
2	Marsh Bayou, RKM 8.6-UT LDB	Width "a"	Unitless	4.450	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.550	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
3	Marsh Bayou, UT (LDB) to Site 4	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	9.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.650	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
6	Marsh Bayou, RKM 5.2-UT LDB	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	11.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration

		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.600	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
7	Marsh Bayou, UT (LDB)-Site 3	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.00020	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
8	Marsh Bayou, Site 3-Little Marsh Bayou	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.200	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.760	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
10	Marsh Bayou, Beaver Dam	Width "a"	Unitless	32.790	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.050	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.3047	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
11	Marsh Bayou, Beaver Dam-RKM 2.0	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
12	Marsh Bayou, RKM 2.0-UT LDB	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.800	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps

		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.930	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.940	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.950	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113

Marsh Bayou Winter Water Quality Model Input Description

(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 10, Dispersive Hydraulic Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
2	Marsh Bayou, RKM 8.6-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
3	Marsh Bayou, UT (LDB) to Site 4	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
6	Marsh Bayou, RKM 5.2-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
7	Marsh Bayou, UT (LDB)-Site 3	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

8	Marsh Bayou, Site 3-Little Marsh Bayou	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.05	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
10	Marsh Bayou, Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.50	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
11	Marsh Bayou, Beaver Dam-RKM 2.0	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
12	Marsh Bayou, RKM 2.0-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.95	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

Marsh Bayou Winter Water Quality Model Input Description
(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 11, INITIAL CONDITIONS					
Reach #	NAME	Initial Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
2	Marsh Bayou, RKM 8.6-UT LDB	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
3	Marsh Bayou, UT (LDB) to Site 4	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839,
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		

5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
6	Marsh Bayou, RKM 5.2-UT LDB	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
7	Marsh Bayou, UT (LDB)-Site 3	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
8	Marsh Bayou, Site 3-Little Marsh Bayou	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		

		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
10	Marsh Bayou, Beaver Dam	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
11	Marsh Bayou, Beaver Dam-RKM 2.0	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the Winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
12	Marsh Bayou, RKM 2.0-UT LDB	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the Winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the Winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		

		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the Winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the Winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		

Marsh Bayou Winter Water Quality Model Input Description

(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 12, Reaeration, Sediment Oxygen Demand and BOD Coeff.

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	0.54	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
2	Marsh Bayou, RKM 8.6-UT LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_{+C139} "C"	Unitless		
		Background SOD	g/m^2-day	0.34	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
3	Marsh Bayou, UT (LDB) to Site 4	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.33	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		

4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.41	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	0.59	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
6	Marsh Bayou, RKM 5.2-UT LDB	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.78	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
7	Marsh Bayou, UT (LDB)-Site 3	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		

		Background SOD	g/m^2-day	0.80	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.81	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	0.76	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
10	Marsh Bayou, Beaver Dam	K2 option	Unitless	1.00	$K_2 = a$
		K2 "A"	Unitless	500.00	Manually input reaeration value used for Reach 10 used to simulate the beaver dam. The value was determined by calibration.
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Aerobic BOD decay	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		BOD Settling rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11

		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.11	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
12	Marsh Bayou, RKM 2.0-UT LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	0.86	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	K2 option	Unitless	20.00	$K_2 = a/D$, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.81	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	K2 option	Unitless	20.00	$K_2 = a/D$, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)

		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.90	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	K_2 option	Unitless	20.00	$K_2 = a/D$, where D = depth
		K_2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.01	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction of the esitmated natural background benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		

Marsh Bayou Winter Water Quality Model Input Description

(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 15, Coliform and Nonconservative Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
2	Marsh Bayou, RKM 8.6-UT LDB	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
3	Marsh Bayou, UT (LDB) to Site 4	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
6	Marsh Bayou, RKM 5.2-UT LDB	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
7	Marsh Bayou, UT (LDB)-Site 3	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
8	Marsh Bayou, Site 3-Little Marsh Bayou	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
10	Marsh Bayou, Beaver Dam	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Settled nonconservative material conversion to sediment oxygen demand			
11	Marsh Bayou, Beaver Dam-RKM 2.0	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

12	Marsh Bayou, RKM 2.0-UT LDB	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)

		Settled nonconservative material conversion to sediment oxygen demand			
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

Marsh Bayou Winter Water Quality Model Input Description
(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 19, Nonpoint Source Data

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	BOD	kg/day	3.88	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.71	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
2	Marsh Bayou, RKM 8.6-UT LDB	BOD	kg/day	5.79	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	2.71	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
3	Marsh Bayou, UT (LDB) to Site 4	BOD	kg/day	8.73	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	2.45	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	BOD	kg/day	5.59	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	2.45	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		

5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	BOD	kg/day	7.49	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.87	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
6	Marsh Bayou, RKM 5.2-UT LDB	BOD	kg/day	9.16	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.97	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
7	Marsh Bayou, UT (LDB)-Site 3	BOD	kg/day	8.61	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.51	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	BOD	kg/day	4.76	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.79	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	BOD	kg/day	5.71	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.03	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading

		Dissolved O_2	kg/day		
10	Marsh Bayou, Beaver Dam	BOD	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Dissolved O_2	kg/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	BOD	kg/day	7.01	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.39	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
12	Marsh Bayou, RKM 2.0-UT LDB	BOD	kg/day	7.97	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.40	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	BOD	kg/day	6.50	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.37	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	BOD	kg/day	9.68	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		

		Nonconservative matl.	kg/day	0.55	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	BOD	kg/day	13.44	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.77	Reduced value based upon the calibration value, and a 100 percent reduction of the estimated man-made portion of the benthic loading, and a 20 percent reduction in the estimated natural background loading
		Dissolved O_2	kg/day		

Marsh Bayou Winter Water Quality Model Input Description

(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 20, Headwater Data for Flow, Temperature, Salinity, and Conservatives					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input	#	1	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater name		Marsh Bayou @ Welcome Road	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater flow	cms	0.071	Winter 7Q10 value for Marsh Bayou estimated by multiplying the average of the winter 7Q10/drainage area ratios for Bundick Crk. near Dry Crk. and Bundick Crk. near DeRidder by the drainage area of Marsh Bayou @ Welcome Rd.
		Temperature	°Celcius	15.3	Winter 90^{th} percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Conservative Matl. I	mg/l	20.4	Marsh Bayou Survey at Welcome Road (Site 5)
		Conservative Matl. II	mg/l	5.4	Marsh Bayou Survey at Welcome Road (Site 5)

Marsh Bayou Winter Water Quality Model Input Description (No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)					
DATA TYPE 21, Headwater Data for DO, BOD, and Nitrogen					
Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		BOD	mg/l	2.36	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the load, and a 20 percent reduction of the estimated natural background load
		Org.- N	mg/l		
		NH_3-N	mg/l		
		NO_{2+3}-N	mg/l		

Marsh Bayou Winter Water Quality Model Input Description (No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)					
DATA TYPE 22, Headwater Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Phosphorus	mg/L		
		Chlorophyll a	ug/L	11.9	Marsh Bayou Survey at Welcome Road (Site 5)
		Coliform	#/100 mL		
		Nonconservative Material	mg/l	5.81	Reduced value based upon the calibration value, a 100 percent reduction of the estimated man-made portion of the load, and a 20 percent reduction of the estimated natural background load

Marsh Bayou Winter Water Quality Model Input Description
(No Man-Made Loads & Estimated Natural Background Loads Reduced by 20%)

DATA TYPE 27, Lower Boundary Conditions

Reach #	NAME	Parameter	Units	Value	Source/Justification
	Calcasieu River	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt	0.00	
		Conservative Matl. I	mg/l	6.40	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Conservative Matl. II	mg/l	2.80	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		BOD	mg/l	3.42	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Org.- N	mg/l	0.22	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		NH_3-N	mg/l	0.00	
		NO_{2+3}-N	mg/l	0.03	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Phosphorus	mg/l	0.12	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Chlorophyl A	mg/l	3.93	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Coliform	mg/l		
		Nonconservative Material	mg/L	0.36	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)

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LA-QUAL Version 4.10
Louisiana Department of Environmental Quality

Input file is D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not applied to the natural
background\WINTER\MARS_WIN_70_NOBCKGRNDMOS.txt
Output produced at 00:14 on 03/31/2001

$$$ DATA TYPE 1 (TITLES AND CONTROL CARDS) $$$

CARD TYPE        CONTROL TITLES

TITLE01          MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
TITLE02          02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR
CNTROL11   NO    SEQUENCING OUTPUT
CNTROL12  YES    METRIC UNITS
CNTROL13  YES    OXYGEN DEPENDENT RATES
ENDATA01

$$$ DATA TYPE 2 (MODEL OPTIONS) $$$

CARD TYPE        MODEL OPTION

MODOPT01   NO    TEMPERATURE
MODOPT02   NO    SALINITY
MODOPT03  YES    CONSERVATIVE MATERIAL  I = CHLORIDES                IN MG/L
MODOPT04  YES    CONSERVATIVE MATERIAL II = SULFATES                 IN MG/L
MODOPT05  YES    DISSOLVED OXYGEN
MODOPT06  YES    BIOCHEMICAL OXYGEN DEMAND = UCBOD
MODOPT07   NO    NITROGEN
MODOPT08   NO    PHOSPHORUS
MODOPT09   NO    CHLOROPHYLL A
MODOPT10   NO    MACROPHYTES
MODOPT11   NO    COLIFORM
MODOPT12  YES    NONCONSERVATIVE MATERIAL = NBOD                     IN MG/L
ENDATA02

$$$ DATA TYPE 3 (PROGRAM CONSTANTS) $$$

CARD TYPE        DESCRIPTION OF CONSTANT                      VALUE

PROGRAM          HYDRAULIC CALCULATION METHOD      =        2.00000
PROGRAM          MAXIMUM ITERATION LIMIT           =      500.00000
PROGRAM          PLOT CONTROL VALUE                =        3.00000
PROGRAM          INTERMEDIATE REPORT TYPE          =        4.00000
PROGRAM          FINAL REPORT TYPE                 =        1.00000
PROGRAM          BOD OXYGEN UPTAKE RATE            =        1.00000
PROGRAM          NCM OXYGEN UPTAKE RATE            =        1.00000
PROGRAM          INHIBITION CONTROL VALUE          =        2.00000
PROGRAM          TIDE HEIGHT (METERS)              =        0.07600
PROGRAM          TIDAL PERIOD                      =       25.00000
PROGRAM          PERIOD OF TIDAL RISE              =       12.50000
PROGRAM          DISPERSION EQUATION               =        1.00000
PROGRAM          ALGAE OXYGEN PROD                 =        0.00000
PROGRAM          OCEAN EXCHANGE RATIO              =        1.00000
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PROGRAM        KL MINIMUM                       =      0.70000
PROGRAM        K2 MAXIMUM                       =     25.00000
PROGRAM        INHIBITION CONTROL VALUE         =      3.00000
PROGRAM        N INHIBITION EQUATION            =      2.00000
PROGRAM        OXYGEN DEPENDENCE THRESHOLD      =      2.00000
PROFRAM        SETTLING RATE UNITS              =      2.00000
PROGRAM        O ERROR CLOSURE LIMIT            =      0.75000
PROGRAM        O RELAXATION COEFFICIENT         =      0.25000
PROGRAM        O ITERATIONS PER CYCLE           =      0.00000
PROGRAM        EFFECTIVE BOD DUE TO ALGAE       =      0.00000
ENDATA03

$$$ DATA TYPE 4 (TEMPERATURE CORRECTION CONSTANTS FOR RATE COEFFICIENTS) $$$

 CARD TYPE      RATE CODE      THETA VALUE

TEMP           BOD SETT       1.02400
TEMP           NCM DECA       1.07000
TEMP           NCM SETT       1.02400
TEMP           PO4 SRCE       1.06500
TEMP           NH3 SRCE       1.06500
TEMP           BENTHAL        1.06500
TEMP           NH3 DECA       1.07000
TEMP           ORGN SET       1.07000
ENDATA04

$$$ CONSTANTS TYPE 5 (TEMPERATURE DATA) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                VALUE

ENDATA05

$$$ DATA TYPE 6 (ALGAE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                VALUE

ENDATA06

$$$ DATA TYPE 7 (MACROPHYTE CONSTANTS) $$$

CARD TYPE       DESCRIPTION OF CONSTANT                VALUE

ENDATA07

$$$ DATA TYPE 8 (REACH IDENTIFICATION DATA) $$$
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CARD TYPE	REACH	ID	NAME	BEGIN REACH km		END REACH km	ELEM LENGTH km	REACH LENGTH km	ELEMS PER RCH	BEGIN ELEM NUM	END ELEM NUM
REACH ID	1	MB	E. WELCOME RD.-RKM 8.6	9.52	TO	8.60	0.0920	0.92	10	1	10
REACH ID	2	MB	RKM 8.6-UT LDB	8.60	TO	7.60	0.1000	1.00	10	11	20
REACH ID	3	MB	UT LDB-SITE 4	7.60	TO	6.65	0.0950	0.95	10	21	30
REACH ID	4	MB	RKM 6.65-E. OF TOPSY RD.	6.65	TO	6.00	0.1300	0.65	5	31	35
REACH ID	5	MB	EAST OF TOPSY RD.-RKM 5.2	6.00	TO	5.20	0.1000	0.80	8	36	43

REACH ID	6	MB	RKM 5.2-UT LDB	5.20	TO	4.20	0.1000	1.00	10	44	53
REACH ID	7	MB	UT LDB-SITE 3	4.20	TO	3.30	0.1000	0.90	9	54	62
REACH ID	8	MB	SITE 3-LITTLE MARSH B.	3.30	TO	2.80	0.1000	0.50	5	63	67
REACH ID	9	MB	LITTLE MARSH B.-BEAVER DAM	2.80	TO	2.55	0.0500	0.25	5	68	72
REACH ID	10	MB	BEAVER DAM	2.55	TO	2.55	0.0010	0.00	1	73	73
REACH ID	11	MB	BEAVER DAM-RKM 2.0	2.55	TO	2.00	0.1100	0.55	5	74	78
REACH ID	12	MB	RKM 2.0-UT LDB	2.00	TO	1.60	0.1000	0.40	4	79	82
REACH ID	13	MB	UT LDB-NATURAL DIV. TO CAL.R.	1.60	TO	1.30	0.1000	0.30	3	83	85
REACH ID	14	MB	NAT. DIV. TO CAL.R.-RKM RKM 0.8	1.30	TO	0.80	0.1000	0.50	5	86	90
REACH ID	15	MB	UPPER OUTLET-LOWER OUTLET	0.80	TO	0.00	0.1000	0.80	8	91	98

ENDATA08

$$$ DATA TYPE 9 (ADVECTIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	WIDTH "A"	WIDTH "B"	WIDTH "C"	DEPTH "D"	DEPTH "E"	DEPTH "F"	SLOPE	MANNINGS "N"
HYDR-1	1	MB	4.450	0.360	4.000	2.100	0.480	0.400	0.00020	0.040
HYDR-1	2	MB	4.450	0.360	5.000	2.100	0.480	0.550	0.00020	0.040
HYDR-1	3	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	4	MB	5.000	0.360	7.300	1.400	0.480	0.700	0.00100	0.040
HYDR-1	5	MB	5.400	0.360	9.500	1.150	0.480	0.650	0.00020	0.040
HYDR-1	6	MB	5.400	0.360	11.500	1.150	0.480	0.600	0.00020	0.040
HYDR-1	7	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	8	MB	2.700	0.360	13.000	1.000	0.480	0.560	0.00020	0.040
HYDR-1	9	MB	16.500	0.500	23.000	1.200	0.200	0.760	0.00020	0.040
HYDR-1	10	MB	32.790	0.050	0.000	1.100	0.200	0.000	0.30470	0.040
HYDR-1	11	MB	16.500	0.500	23.000	1.400	0.480	0.700	0.00020	0.040
HYDR-1	12	MB	16.500	0.500	24.000	1.400	0.480	0.800	0.00020	0.040
HYDR-1	13	MB	16.500	0.500	24.500	1.400	0.480	0.930	0.00020	0.040
HYDR-1	14	MB	16.500	0.500	25.000	1.400	0.480	0.940	0.00020	0.040
HYDR-1	15	MB	16.500	0.500	25.500	1.400	0.480	0.950	0.00020	0.040

ENDATA09

$$$ DATA TYPE 10 (DISPERSIVE HYDRAULIC COEFFICIENTS) $$$

CARD TYPE	REACH	ID	TIDAL RANGE	DISPERSION "A"	DISPERSION "B"	DISPERSION "C"	DISPERSION "D"
HYDR	1	MB	0.00	0.000	0.000	0.000	0.000
HYDR	2	MB	0.00	0.000	0.000	0.000	0.000
HYDR	3	MB	0.00	0.000	0.000	0.000	0.000
HYDR	4	MB	0.00	0.000	0.000	0.000	0.000
HYDR	5	MB	0.00	0.000	0.000	0.000	0.000
HYDR	6	MB	0.00	0.000	0.000	0.000	0.000
HYDR	7	MB	0.00	0.000	0.000	0.000	0.000
HYDR	8	MB	0.00	0.000	0.000	0.000	0.000
HYDR	9	MB	0.00	0.050	0.000	0.000	0.000
HYDR	10	MB	0.00	0.500	0.000	0.000	0.000
HYDR	11	MB	0.00	0.900	0.000	0.000	0.000
HYDR	12	MB	0.00	0.900	0.000	0.000	0.000
HYDR	13	MB	0.00	0.950	0.000	0.000	0.000
HYDR	14	MB	0.00	1.000	0.000	0.000	0.000
HYDR	15	MB	0.00	1.000	0.000	0.000	0.000

ENDATA10

$$$ DATA TYPE 11 (INITIAL CONDITIONS) $$$

CARD TYPE	REACH	ID	TEMP	SALIN	DO	NH3	NO3+2	PHOS	CHL A	MACRO
INITIAL	1	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	2	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	3	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	4	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	5	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	6	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	7	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	8	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	9	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	10	MB	15.30	0.00	10.02	0.00	0.00	0.00	11.90	0.00
INITIAL	11	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00
INITIAL	12	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00
INITIAL	13	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00
INITIAL	14	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00
INITIAL	15	MB	18.80	0.00	9.31	0.00	0.00	0.00	11.90	0.00

ENDATA11

$$$ DATA TYPE 12 (REAERATION, SEDIMENT OXYGEN DEMAND, BOD COEFFICIENTS) $$$

CARD TYPE	REACH	ID	K2 OPT	K2 "A"	K2 "B"	K2 "C"	BKGRND SOD	AEROB BOD DECAY	BOD SETT	BOD CONV TO SOD	ANAER BOD DECAY
COEF-1	1	MB	15 LOUISIANA	0.000	0.000	0.000	1.100	0.100	0.060	0.000	0.000
COEF-1	2	MB	15 LOUISIANA	0.000	0.000	0.000	0.690	0.100	0.060	0.000	0.000
COEF-1	3	MB	15 LOUISIANA	0.000	0.000	0.000	0.690	0.100	0.060	0.000	0.000
COEF-1	4	MB	15 LOUISIANA	0.000	0.000	0.000	0.850	0.100	0.060	0.000	0.000
COEF-1	5	MB	15 LOUISIANA	0.000	0.000	0.000	1.210	0.100	0.060	0.000	0.000
COEF-1	6	MB	15 LOUISIANA	0.000	0.000	0.000	1.580	0.100	0.060	0.000	0.000
COEF-1	7	MB	15 LOUISIANA	0.000	0.000	0.000	1.690	0.130	0.070	0.000	0.000
COEF-1	8	MB	15 LOUISIANA	0.000	0.000	0.000	1.640	0.130	0.070	0.000	0.000
COEF-1	9	MB	15 LOUISIANA	2.300	0.000	0.000	1.760	0.130	0.070	0.000	0.000
COEF-1	10	MB	1 K2=a	500.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEF-1	11	MB	15 LOUISIANA	0.000	0.000	0.000	2.100	0.150	0.080	0.000	0.000
COEF-1	12	MB	15 LOUISIANA	0.000	0.000	0.000	1.420	0.150	0.080	0.000	0.000
COEF-1	13	MB	20 K2=a/D	2.300	0.000	0.000	1.380	0.150	0.080	0.000	0.000
COEF-1	14	MB	20 K2=a/D	2.300	0.000	0.000	1.270	0.150	0.080	0.000	0.000
COEF-1	15	MB	20 K2=a/D	2.300	0.000	0.000	1.200	0.150	0.080	0.000	0.000

ENDATA12

$$$ DATA TYPE 13 (NITROGEN AND PHOSPHORUS COEFFICIENTS) $$$

CARD TYPE	REACH	ID	ORG-N DECA	ORG-N SETT	ORGN CONV TO NH3 SRCE	NH3 DECA	NH3 SRCE	PHOS SRCE	DENIT RATE

ENDATA13

$$$ DATA TYPE 14 (ALGAE AND MACROPHYTE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	SECCHI DEPTH	ALGAE: CHL A	ALGAE SETT	ALG CONV TO SOD	ALGAE GROW	ALGAE RESP	MACRO GROW	MACRO RESP

ENDATA14

$$$ DATA TYPE 15 (COLIFORM AND NONCONSERVATIVE COEFFICIENTS) $$$

CARD TYPE	REACH	ID	COLIFORM DIE-OFF	NCM DECAY	NCM SETT	NCM CONV TO SOD
COEF-4	1	MB	0.00	0.15	0.03	0.00
COEF-4	2	MB	0.00	0.15	0.03	0.00
COEF-4	3	MB	0.00	0.08	0.03	0.00
COEF-4	4	MB	0.00	0.08	0.03	0.00
COEF-4	5	MB	0.00	0.08	0.03	0.00
COEF-4	6	MB	0.00	0.08	0.03	0.00
COEF-4	7	MB	0.00	0.10	0.04	0.00
COEF-4	8	MB	0.00	0.10	0.04	0.00
COEF-4	9	MB	0.00	0.10	0.04	0.00
COEF-4	10	MB	0.00	0.00	0.00	0.00
COEF-4	11	MB	0.00	0.10	0.04	0.00
COEF-4	12	MB	0.00	0.10	0.04	0.00
COEF-4	13	MB	0.00	0.10	0.04	0.00
COEF-4	14	MB	0.00	0.08	0.04	0.00
COEF-4	15	MB	0.00	0.08	0.04	0.00

ENDATA15

$$$ DATA TYPE 16 (INCREMENTAL DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE	REACH	ID	OUTFLOW	INFLOW	TEMP	SALIN	CM-I	CM-II	IN/DIST	OUT/DIST

ENDATA16

$$$ DATA TYPE 17 (INCREMENTAL DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE	REACH	ID	DO	BOD	ORG-N	NH3	NO3+2

ENDATA17

$$$ DATA TYPE 18 (INCREMENTAL DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE	REACH	ID	PHOS	CHL A	COLI	NCM

ENDATA18

$$$ DATA TYPE 19 (NONPOINT SOURCE DATA) $$$

CARD TYPE	REACH	ID	BOD	ORG-N	COLI	NCM	DO
NONPOINT	1	MB	7.88	0.00	0.00	3.47	0.00
NONPOINT	2	MB	11.96	0.00	0.00	5.61	0.00
NONPOINT	3	MB	18.40	0.00	0.00	5.17	0.00
NONPOINT	4	MB	11.50	0.00	0.00	3.16	0.00
NONPOINT	5	MB	15.40	0.00	0.00	3.85	0.00

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NONPOINT           6   MB        18.61      0.00      0.00      4.00      0.00
NONPOINT           7   MB        18.25      0.00      0.00      3.21      0.00
NONPOINT           8   MB         9.68      0.00      0.00      1.61      0.00
NONPOINT           9   MB        13.16      0.00      0.00      0.07      0.00
NONPOINT          10   MB         0.00      0.00      0.00      0.00      0.00
NONPOINT          11   MB        13.31      0.00      0.00      0.74      0.00
NONPOINT          12   MB        13.15      0.00      0.00      0.66      0.00
NONPOINT          13   MB        11.12      0.00      0.00      0.64      0.00
NONPOINT          14   MB        13.59      0.00      0.00      0.78      0.00
NONPOINT          15   MB        16.03      0.00      0.00      0.92      0.00
ENDATA19

$$$ DATA TYPE 20 (HEADWATER FOR FLOW, TEMPERATURE, SALINITY AND CONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                     UNIT         FLOW      TEMP      SALIN      CM-I      CM-II

HDWTR-1            1     Marsh @ Welcome Rd.       0        0.07100    15.300     0.000     20.400     5.400
ENDATA20

$$$ DATA TYPE 21 (HEADWATER DATA FOR DO, BOD, AND NITROGEN) $$$

CARD TYPE      ELEMENT   NAME                           DO        BOD      ORG-N       NH3     NO3+2

HDWTR-2            1     Marsh @ Welcome Rd.         10.02       6.41      0.00       0.00      0.00
ENDATA21

$$$ DATA TYPE 22 (HEADWATER DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$

CARD TYPE      ELEMENT   NAME                          PHOS      CHL A      COLI       NCM

HDWTR-3            1     Marsh @ Welcome Rd.           0.00      11.90      0.00      8.84
ENDATA22

$$$ DATA TYPE 23 (JUNCTION DATA) $$$

CARD TYPE    JUNCTION   UPSTRM     RIVER     NAME
              ELEMENT  ELEMENT     KILOM

ENDATA23

$$$ DATA TYPE 24 (WASTELOAD DATA FOR FLOW, TEMPERATURE, SALINITY, AND CONSERVATIVES) $$$

CARD TYPE  ELEMENT    RKILO  NAME                              FLOW      TEMP       SAL      CM-I      CM-II

ENDATA24

$$$ DATA TYPE 25 (WASTELOAD DATA FOR DO, BOD, AND NITROGEN) $$$

                                                                      % BOD                        %
CARD TYPE      ELEMENT   NAME                           DO        BOD      RMVL      ORG-N      NH3   NITRIF     NO3+2

ENDATA25

$$$ DATA TYPE 26 (WASTELOAD DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) $$$
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CARD TYPE      ELEMENT   NAME                           PHOS      CHL A      COLI       NCM

ENDATA26

$$$ DATA TYPE 27 (LOWER BOUNDARY CONDITIONS) $$$

CARD TYPE     CONSTITUENT                       CONCENTRATION

LOWER BC      TEMPERATURE                          =      18.800 deg C
LOWER BC      SALINITY                             =       0.000 ppt
LOWER BC      CONSERVATIVE MATERIAL  I             =       6.400 MG/L
LOWER BC      CONSERVATIVE MATERIAL II             =       2.800 MG/L
LOWER BC      DISSOLVED OXYGEN                     =       9.310 mg/L
LOWER BC      BIOCHEMICAL OXYGEN DEMAND            =       3.420 mg/L
LOWER BC      ORGANIC NITROGEN                     =       0.220 mg/L
LOWER BC      AMMONIA NITROGEN                     =       0.000 mg/L
LOWER BC      NITRATE+NITRITE NITROGEN             =       0.030 mg/L
LOWER BC      PHOSPHORUS                           =       0.120 mg/L
LOWER BC      CHLOROPHYLL A                        =       3.930 µg/L
LOWER BC      COLIFORM                             =       0.000 #/100 mL
LOWER BC      NONCONSERVATIVE MATERIAL             =       0.360 MG/L
ENDATA27

$$$ DATA TYPE 28 (RESERVED FOR FUTURE DATA INPUT) $$$

 CARD TYPE

ENDATA28

$$$ DATA TYPE 29 (SENSITIVITY ANALYSIS DATA) $$$

CARD TYPE       PARAMETER    COL 1     COL 2     COL 3     COL 4     COL 5     COL 6     COL 7     COL 8

ENDATA29

$$$ DATA TYPE 30 (PLOT CONTROL CARDS) $$$


NUMBER OF PLOTS =  5
NUMBER OF REACHES IN PLOT 1 =   4
PLOT RCH  1  2  3  4
NUMBER OF REACHES IN PLOT 2 =   4
PLOT RCH  5  6  7  8
NUMBER OF REACHES IN PLOT 3 =   4
PLOT RCH  9 10 11 12
NUMBER OF REACHES IN PLOT 4 =   3
PLOT RCH 13 14 15
NUMBER OF REACHES IN PLOT 5 =  15
PLOT RCH  1  2  3  4  5  6  7  8  9 10 11 12 13 14 15
ENDATA30

$$$ DATA TYPE 31 (OVERLAY PLOT DATA) $$$
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OVERLAY 1  marshwinpresentation.ovl        Marsh Bayou: Welcome Rd.-RKM 6.0
OVERLAY 2  marshwinpresentation.ovl        Marsh Bayou: RKM 6.0-RKM 2.8
OVERLAY 3  marshwinpresentation.ovl        Marsh Bayou: RKM 2.8-UT LDB (RKM 1.6)
OVERLAY 4  marshwinpresentation.ovl        Marsh Bayou: UT LDB(RKM 1.6)-CAL. R.
OVERLAY 5  marshwinpresentation.ovl        Marsh Bayou: Welcome Rd.-Calcasieu R.
ENDATA31


     .....NO ERRORS DETECTED IN INPUT DATA
     .....HYDRAULIC CALCULATIONS COMPLETED
     .....TRIDIAGONAL MATRIX TERMS INITIALIZED
     .....OXYGEN DEPENDENT RATES CONVERGENT IN    1 ITERATIONS
     .....CONSTITUENT CALCULATIONS COMPLETED
     .....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11
     .....GRAPHICS DATA FOR PLOT 2 WRITTEN TO UNIT 12
     .....GRAPHICS DATA FOR PLOT 3 WRITTEN TO UNIT 13
     .....GRAPHICS DATA FOR PLOT 4 WRITTEN TO UNIT 14
     .....GRAPHICS DATA FOR PLOT 5 WRITTEN TO UNIT 15
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CAPSULE SUMMARY
Marsh @ Welcome Rd.

DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD
HDWTR	0.07100	15.30	0.00	10.02	6.41	0.00	0.00	11.90					
9.43	0.07100	15.30	0.00	9.84	6.46	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
9.34	0.07100	15.30	0.00	9.66	6.52	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
9.24	0.07100	15.30	0.00	9.50	6.57	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
9.15	0.07100	15.30	0.00	9.35	6.63	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
9.06	0.07100	15.30	0.00	9.21	6.68	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
8.97	0.07100	15.30	0.00	9.07	6.73	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
8.88	0.07100	15.30	0.00	8.95	6.78	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
8.78	0.07100	15.30	0.00	8.83	6.83	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
8.69	0.07100	15.30	0.00	8.72	6.88	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
8.60	0.07100	15.30	0.00	8.62	6.93	0.00	0.00	11.90	0.77	0.08	0.05	0.00	0.82
8.50	0.07100	15.30	0.00	8.50	7.01	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
8.40	0.07100	15.30	0.00	8.39	7.08	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
8.30	0.07100	15.30	0.00	8.28	7.16	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
8.20	0.07100	15.30	0.00	8.19	7.23	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
8.10	0.07100	15.30	0.00	8.10	7.31	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
8.00	0.07100	15.30	0.00	8.01	7.38	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
7.90	0.07100	15.30	0.00	7.94	7.45	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
7.80	0.07100	15.30	0.00	7.87	7.52	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
7.70	0.07100	15.30	0.00	7.80	7.58	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
7.60	0.07100	15.30	0.00	7.74	7.65	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
7.51	0.07100	15.30	0.00	7.72	7.79	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
7.41	0.07100	15.30	0.00	7.71	7.92	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
7.32	0.07100	15.30	0.00	7.69	8.05	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
7.22	0.07100	15.30	0.00	7.68	8.18	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51

7.13	0.07100	15.30	0.00	7.66	8.31	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
7.03	0.07100	15.30	0.00	7.65	8.43	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
6.94	0.07100	15.30	0.00	7.63	8.55	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
6.84	0.07100	15.30	0.00	7.62	8.67	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
6.75	0.07100	15.30	0.00	7.60	8.78	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
6.65	0.07100	15.30	0.00	7.59	8.90	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.51
6.52	0.07100	15.30	0.00	7.55	9.01	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.63
6.39	0.07100	15.30	0.00	7.51	9.13	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.63
6.26	0.07100	15.30	0.00	7.48	9.24	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.63
6.13	0.07100	15.30	0.00	7.45	9.34	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.63
6.00	0.07100	15.30	0.00	7.42	9.45	0.00	0.00	11.90	0.63	0.08	0.05	0.00	0.63
5.90	0.07100	15.30	0.00	7.37	9.53	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.90
5.80	0.07100	15.30	0.00	7.33	9.60	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.90
5.70	0.07100	15.30	0.00	7.29	9.68	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.90
5.60	0.07100	15.30	0.00	7.25	9.75	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.90
5.50	0.07100	15.30	0.00	7.22	9.82	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.90
5.40	0.07100	15.30	0.00	7.19	9.89	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.90
5.30	0.07100	15.30	0.00	7.16	9.96	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.90
5.20	0.07100	15.30	0.00	7.14	10.03	0.00	0.00	11.90	0.70	0.08	0.05	0.00	0.90
5.10	0.07100	15.30	0.00	7.07	10.05	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
5.00	0.07100	15.30	0.00	7.01	10.08	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
4.90	0.07100	15.30	0.00	6.95	10.11	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
4.80	0.07100	15.30	0.00	6.91	10.13	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
4.70	0.07100	15.30	0.00	6.87	10.16	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
4.60	0.07100	15.30	0.00	6.84	10.18	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
4.50	0.07100	15.30	0.00	6.81	10.20	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
4.40	0.07100	15.30	0.00	6.78	10.23	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
4.30	0.07100	15.30	0.00	6.76	10.25	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
4.20	0.07100	15.30	0.00	6.74	10.27	0.00	0.00	11.90	0.73	0.08	0.05	0.00	1.18
4.10	0.07100	15.30	0.00	6.67	10.27	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.26
4.00	0.07100	15.30	0.00	6.62	10.27	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.26
3.90	0.07100	15.30	0.00	6.57	10.27	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.26
3.80	0.07100	15.30	0.00	6.53	10.27	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.26
3.70	0.07100	15.30	0.00	6.49	10.27	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.26
3.60	0.07100	15.30	0.00	6.46	10.27	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.26
3.50	0.07100	15.30	0.00	6.44	10.27	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.26
3.40	0.07100	15.30	0.00	6.42	10.27	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.26
3.30	0.07100	15.30	0.00	6.40	10.27	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.26
3.20	0.07100	15.30	0.00	6.40	10.25	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.22
3.10	0.07100	15.30	0.00	6.39	10.24	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.22
3.00	0.07100	15.30	0.00	6.39	10.22	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.22
2.90	0.07100	15.30	0.00	6.39	10.21	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.22
2.80	0.07100	15.30	0.00	6.36	10.18	0.00	0.00	11.90	0.81	0.10	0.06	0.00	1.22
2.75	0.07100	15.30	0.00	6.10	10.01	0.00	0.00	11.90	0.43	0.10	0.06	0.00	1.31
2.70	0.07100	15.30	0.00	5.96	9.88	0.00	0.00	11.90	0.43	0.10	0.06	0.00	1.31
2.65	0.07100	15.30	0.00	5.87	9.72	0.00	0.00	11.90	0.43	0.10	0.06	0.00	1.31
2.60	0.07100	15.30	0.00	5.92	9.45	0.00	0.00	11.90	0.43	0.10	0.06	0.00	1.31
2.55	0.07100	15.30	0.00	6.33	8.89	0.00	0.00	11.90	0.43	0.10	0.06	0.00	1.31
2.55	0.07100	18.80	0.00	7.02	8.19	0.00	0.00	11.90	488.11	0.00	0.00	0.00	0.00
2.44	0.07100	18.80	0.00	6.75	7.96	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.95
2.33	0.07100	18.80	0.00	6.38	7.60	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.95
2.22	0.07100	18.80	0.00	6.13	7.27	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.95
2.11	0.07100	18.80	0.00	5.97	6.96	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.95
2.00	0.07100	18.80	0.00	5.93	6.68	0.00	0.00	11.90	0.63	0.14	0.08	0.00	1.95

1.90	0.07100	18.80	0.00	6.01	6.44	0.00	0.00	11.90	0.57	0.14	0.08	0.00	1.32
1.80	0.07100	18.80	0.00	6.14	6.23	0.00	0.00	11.90	0.57	0.14	0.08	0.00	1.32
1.70	0.07100	18.80	0.00	6.37	6.03	0.00	0.00	11.90	0.57	0.14	0.08	0.00	1.32
1.60	0.07100	18.80	0.00	6.71	5.82	0.00	0.00	11.90	0.57	0.14	0.08	0.00	1.32
1.50	0.07100	18.80	0.00	7.17	5.62	0.00	0.00	11.90	1.70	0.14	0.08	0.00	1.28
1.40	0.07100	18.80	0.00	7.49	5.43	0.00	0.00	11.90	1.70	0.14	0.08	0.00	1.28
1.30	0.07100	18.80	0.00	7.72	5.24	0.00	0.00	11.90	1.70	0.14	0.08	0.00	1.28
1.20	0.07100	18.80	0.00	7.90	5.03	0.00	0.00	11.90	1.68	0.14	0.08	0.00	1.18
1.10	0.07100	18.80	0.00	8.03	4.84	0.00	0.00	11.90	1.68	0.14	0.08	0.00	1.18
1.00	0.07100	18.80	0.00	8.12	4.66	0.00	0.00	11.90	1.68	0.14	0.08	0.00	1.18
0.90	0.07100	18.80	0.00	8.20	4.49	0.00	0.00	11.90	1.68	0.14	0.08	0.00	1.18
0.80	0.07100	18.80	0.00	8.26	4.32	0.00	0.00	11.90	1.68	0.14	0.08	0.00	1.18
0.70	0.07100	18.80	0.00	8.32	4.14	0.00	0.00	10.90	1.67	0.14	0.08	0.00	1.11
0.60	0.07100	18.80	0.00	8.37	3.99	0.00	0.00	9.91	1.67	0.14	0.08	0.00	1.11
0.50	0.07100	18.80	0.00	8.43	3.86	0.00	0.00	8.91	1.67	0.14	0.08	0.00	1.11
0.40	0.07100	18.80	0.00	8.49	3.74	0.00	0.00	7.91	1.67	0.14	0.08	0.00	1.11
0.30	0.07100	18.80	0.00	8.56	3.64	0.00	0.00	6.92	1.67	0.14	0.08	0.00	1.11
0.20	0.07100	18.80	0.00	8.67	3.55	0.00	0.00	5.92	1.67	0.14	0.08	0.00	1.11
0.10	0.07100	18.80	0.00	8.84	3.48	0.00	0.00	4.93	1.67	0.14	0.08	0.00	1.11
0.00	0.07100	18.80	0.00	9.10	3.43	0.00	0.00	3.93	1.67	0.14	0.08	0.00	1.11

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH		DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
			HDWTR	0.071	15.3	0.0	10.0	6.4	0.0	0.0	11.9											
1	MB	1	9.43	0.071	15.3	0.0	9.8	6.5	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
2	MB	1	9.34	0.071	15.3	0.0	9.7	6.5	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
3	MB	1	9.24	0.071	15.3	0.0	9.5	6.6	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
4	MB	1	9.15	0.071	15.3	0.0	9.3	6.6	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
5	MB	1	9.06	0.071	15.3	0.0	9.2	6.7	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
6	MB	1	8.97	0.071	15.3	0.0	9.1	6.7	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
7	MB	1	8.88	0.071	15.3	0.0	8.9	6.8	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
8	MB	1	8.78	0.071	15.3	0.0	8.8	6.8	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
9	MB	1	8.69	0.071	15.3	0.0	8.7	6.9	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
10	MB	1	8.60	0.071	15.3	0.0	8.6	6.9	0.0	0.0	11.9	0.0	0.99	5.7	0.013	0.013	10.0	0.773	0.08	0.05	0.00	0.82
11	MB	2	8.50	0.071	15.3	0.0	8.5	7.0	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
12	MB	2	8.40	0.071	15.3	0.0	8.4	7.1	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
13	MB	2	8.30	0.071	15.3	0.0	8.3	7.2	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
14	MB	2	8.20	0.071	15.3	0.0	8.2	7.2	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
15	MB	2	8.10	0.071	15.3	0.0	8.1	7.3	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
16	MB	2	8.00	0.071	15.3	0.0	8.0	7.4	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
17	MB	2	7.90	0.071	15.3	0.0	7.9	7.4	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
18	MB	2	7.80	0.071	15.3	0.0	7.9	7.5	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
19	MB	2	7.70	0.071	15.3	0.0	7.8	7.6	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
20	MB	2	7.60	0.071	15.3	0.0	7.7	7.7	0.0	0.0	11.9	0.0	1.14	6.7	0.009	0.009	10.0	0.634	0.08	0.05	0.00	0.51
21	MB	3	7.51	0.071	15.3	0.0	7.7	7.8	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51
22	MB	3	7.41	0.071	15.3	0.0	7.7	7.9	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51
23	MB	3	7.32	0.071	15.3	0.0	7.7	8.1	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51
24	MB	3	7.22	0.071	15.3	0.0	7.7	8.2	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51
25	MB	3	7.13	0.071	15.3	0.0	7.7	8.3	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51
26	MB	3	7.03	0.071	15.3	0.0	7.6	8.4	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51
27	MB	3	6.94	0.071	15.3	0.0	7.6	8.6	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51

28	MB 3	6.84	0.071	15.3	0.0	7.6	8.7	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51
29	MB 3	6.75	0.071	15.3	0.0	7.6	8.8	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51
30	MB 3	6.65	0.071	15.3	0.0	7.6	8.9	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.51
31	MB 4	6.52	0.071	15.3	0.0	7.5	9.0	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.63
32	MB 4	6.39	0.071	15.3	0.0	7.5	9.1	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.63
33	MB 4	6.26	0.071	15.3	0.0	7.5	9.2	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.63
34	MB 4	6.13	0.071	15.3	0.0	7.4	9.3	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.63
35	MB 4	6.00	0.071	15.3	0.0	7.4	9.4	0.0	0.0	11.9	0.0	1.09	9.2	0.007	0.007	10.0	0.635	0.08	0.05	0.00	0.63
36	MB 5	5.90	0.071	15.3	0.0	7.4	9.5	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.90
37	MB 5	5.80	0.071	15.3	0.0	7.3	9.6	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.90
38	MB 5	5.70	0.071	15.3	0.0	7.3	9.7	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.90
39	MB 5	5.60	0.071	15.3	0.0	7.3	9.8	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.90
40	MB 5	5.50	0.071	15.3	0.0	7.2	9.8	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.90
41	MB 5	5.40	0.071	15.3	0.0	7.2	9.9	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.90
42	MB 5	5.30	0.071	15.3	0.0	7.2	10.0	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.90
43	MB 5	5.20	0.071	15.3	0.0	7.1	10.0	0.0	0.0	11.9	0.0	0.97	11.6	0.006	0.006	10.0	0.703	0.08	0.05	0.00	0.90
44	MB 6	5.10	0.071	15.3	0.0	7.1	10.1	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
45	MB 6	5.00	0.071	15.3	0.0	7.0	10.1	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
46	MB 6	4.90	0.071	15.3	0.0	7.0	10.1	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
47	MB 6	4.80	0.071	15.3	0.0	6.9	10.1	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
48	MB 6	4.70	0.071	15.3	0.0	6.9	10.2	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
49	MB 6	4.60	0.071	15.3	0.0	6.8	10.2	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
50	MB 6	4.50	0.071	15.3	0.0	6.8	10.2	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
51	MB 6	4.40	0.071	15.3	0.0	6.8	10.2	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
52	MB 6	4.30	0.071	15.3	0.0	6.8	10.2	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
53	MB 6	4.20	0.071	15.3	0.0	6.7	10.3	0.0	0.0	11.9	0.0	0.92	13.6	0.006	0.006	10.0	0.732	0.08	0.05	0.00	1.18
54	MB 7	4.10	0.071	15.3	0.0	6.7	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.26
55	MB 7	4.00	0.071	15.3	0.0	6.6	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.26
56	MB 7	3.90	0.071	15.3	0.0	6.6	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.26
57	MB 7	3.80	0.071	15.3	0.0	6.5	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.26
58	MB 7	3.70	0.071	15.3	0.0	6.5	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.26
59	MB 7	3.60	0.071	15.3	0.0	6.5	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.26
60	MB 7	3.50	0.071	15.3	0.0	6.4	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.26
61	MB 7	3.40	0.071	15.3	0.0	6.4	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.26
62	MB 7	3.30	0.071	15.3	0.0	6.4	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.26
63	MB 8	3.20	0.071	15.3	0.0	6.4	10.3	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.22
64	MB 8	3.10	0.071	15.3	0.0	6.4	10.2	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.22
65	MB 8	3.00	0.071	15.3	0.0	6.4	10.2	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.22
66	MB 8	2.90	0.071	15.3	0.0	6.4	10.2	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.22
67	MB 8	2.80	0.071	15.3	0.0	6.4	10.2	0.0	0.0	11.9	0.0	0.84	14.0	0.006	0.006	10.0	0.809	0.10	0.06	0.00	1.22
68	MB 9	2.75	0.071	15.3	0.0	6.1	10.0	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	1.31
69	MB 9	2.70	0.071	15.3	0.0	6.0	9.9	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	1.31
70	MB 9	2.65	0.071	15.3	0.0	5.9	9.7	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	1.31
71	MB 9	2.60	0.071	15.3	0.0	5.9	9.5	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	1.31
72	MB 9	2.55	0.071	15.3	0.0	6.3	8.9	0.0	0.0	11.9	0.1	1.47	27.4	0.002	0.002	10.0	0.433	0.10	0.06	0.00	1.31
73	MB 10	2.55	0.071	18.8	0.0	7.0	8.2	0.0	0.0	11.9	0.5	0.65	28.7	0.004	0.004	9.348	8.106	0.00	0.00	0.00	0.00

SPECIAL CAPSULE SUMMARY OF Marsh @ Welcome Rd.

IOR	REACH	DIST km	FLOW cms	TEMP deg C	SALN ppt	DO mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	CHLA µg/L	DISP sq m/s	DEPTH m	WIDTH m	VELO m/s	VM m/s	DOSAT mg/L	REAER RATE 1/da	CBOD DECA 1/da	CBOD SETT 1/da	NH3 DECA 1/da	SOD g/sq m/d
74	MB 11	2.44	0.071	18.8	0.0	6.7	8.0	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.95
75	MB 11	2.33	0.071	18.8	0.0	6.4	7.6	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.95

76	MB	11	2.22	0.071	18.8	0.0	6.1	7.3	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.95
77	MB	11	2.11	0.071	18.8	0.0	6.0	7.0	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.95
78	MB	11	2.00	0.071	18.8	0.0	5.9	6.7	0.0	0.0	11.9	0.9	1.09	27.4	0.002	0.002	9.3	0.625	0.14	0.08	0.00	1.95
79	MB	12	1.90	0.071	18.8	0.0	6.0	6.4	0.0	0.0	11.9	0.9	1.19	28.4	0.002	0.002	9.3	0.573	0.14	0.08	0.00	1.32
80	MB	12	1.80	0.071	18.8	0.0	6.1	6.2	0.0	0.0	11.9	0.9	1.19	28.4	0.002	0.002	9.3	0.573	0.14	0.08	0.00	1.32
81	MB	12	1.70	0.071	18.8	0.0	6.4	6.0	0.0	0.0	11.9	0.9	1.19	28.4	0.002	0.002	9.3	0.573	0.14	0.08	0.00	1.32
82	MB	12	1.60	0.071	18.8	0.0	6.7	5.8	0.0	0.0	11.9	0.9	1.19	28.4	0.002	0.002	9.3	0.573	0.14	0.08	0.00	1.32
83	MB	13	1.50	0.071	18.8	0.0	7.2	5.6	0.0	0.0	11.9	0.9	1.32	28.9	0.002	0.002	9.3	1.697	0.14	0.08	0.00	1.28
84	MB	13	1.40	0.071	18.8	0.0	7.5	5.4	0.0	0.0	11.9	0.9	1.32	28.9	0.002	0.002	9.3	1.697	0.14	0.08	0.00	1.28
85	MB	13	1.30	0.071	18.8	0.0	7.7	5.2	0.0	0.0	11.9	0.9	1.32	28.9	0.002	0.002	9.3	1.697	0.14	0.08	0.00	1.28
86	MB	14	1.20	0.071	18.8	0.0	7.9	5.0	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	1.18
87	MB	14	1.10	0.071	18.8	0.0	8.0	4.8	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	1.18
88	MB	14	1.00	0.071	18.8	0.0	8.1	4.7	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	1.18
89	MB	14	0.90	0.071	18.8	0.0	8.2	4.5	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	1.18
90	MB	14	0.80	0.071	18.8	0.0	8.3	4.3	0.0	0.0	11.9	1.0	1.33	29.4	0.002	0.002	9.3	1.684	0.14	0.08	0.00	1.18
91	MB	15	0.70	0.071	18.8	0.0	8.3	4.1	0.0	0.0	10.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	1.11
92	MB	15	0.60	0.071	18.8	0.0	8.4	4.0	0.0	0.0	9.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	1.11
93	MB	15	0.50	0.071	18.8	0.0	8.4	3.9	0.0	0.0	8.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	1.11
94	MB	15	0.40	0.071	18.8	0.0	8.5	3.7	0.0	0.0	7.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	1.11
95	MB	15	0.30	0.071	18.8	0.0	8.6	3.6	0.0	0.0	6.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	1.11
96	MB	15	0.20	0.071	18.8	0.0	8.7	3.6	0.0	0.0	5.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	1.11
97	MB	15	0.10	0.071	18.8	0.0	8.8	3.5	0.0	0.0	4.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	1.11
98	MB	15	0.00	0.071	18.8	0.0	9.1	3.4	0.0	0.0	3.9	1.0	1.34	29.9	0.002	0.002	9.3	1.671	0.14	0.08	0.00	1.11

FINAL REPORT Marsh @ Welcome Rd.
REACH NO. 1 E. WELCOME RD.-RKM 8.6

MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
1	HDWTR	0.07100	15.30	0.00	20.40	5.40	10.02	6.41	6.41	0.00	0.00	0.00	0.00	11.90	0.00	8.84

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
1	9.52	9.43	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
2	9.43	9.34	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
3	9.34	9.24	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
4	9.24	9.15	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	

															0.013
5	9.15	9.06	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
6	9.06	8.97	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
7	8.97	8.88	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
8	8.88	8.78	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
9	8.78	8.69	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
10	8.69	8.60	0.07100	0.00	0.01254	0.08	0.99	5.72	520.70	525.98	5.66	0.00	0.000	0.000	0.013
TOT						0.85			5206.99	5259.80					
AVG					0.01254		0.99	5.72			5.66				
CUM						0.85									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
1	9.428	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
2	9.336	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
3	9.244	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
4	9.152	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
5	9.060	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
6	8.968	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
7	8.876	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
8	8.784	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
9	8.692	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
10	8.600	10.02	0.77	0.08	0.05	0.00	0.82	0.82	0.82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.03
20 DEG C RATE				0.10		0.00		1.10	0.00		0.00	0.00	0.00	0.00			0.00	8.80		
AVG 20 DEG C RATE			0.85		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
1	9.428	15.30	0.00	20.40	5.40	9.84	6.46	6.46	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.80
2	9.336	15.30	0.00	20.40	5.40	9.66	6.52	6.52	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.75
3	9.244	15.30	0.00	20.40	5.40	9.50	6.57	6.57	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.71
4	9.152	15.30	0.00	20.40	5.40	9.35	6.63	6.63	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.66
5	9.060	15.30	0.00	20.40	5.40	9.21	6.68	6.68	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.62
6	8.968	15.30	0.00	20.40	5.40	9.07	6.73	6.73	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.58
7	8.876	15.30	0.00	20.40	5.40	8.95	6.78	6.78	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.54
8	8.784	15.30	0.00	20.40	5.40	8.83	6.83	6.83	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.49
9	8.692	15.30	0.00	20.40	5.40	8.72	6.88	6.88	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.45
10	8.600	15.30	0.00	20.40	5.40	8.62	6.93	6.93	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.41

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 2   RKM 8.6-UT LDB   02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
11	UPR RCH	0.07100	15.30	0.00	20.40	5.40	8.62	6.93	6.93	0.00	0.00	0.00	0.00	11.90	0.00	8.41

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
11	8.60	8.50	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
12	8.50	8.40	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
13	8.40	8.30	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
14	8.30	8.20	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009
15	8.20	8.10	0.07100	0.00	0.00927	0.12	1.14	6.72	765.73	671.72	7.66	0.00	0.000	0.000	0.009

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  16    8.10      8.00     0.07100    0.00  0.00927      0.12   1.14   6.72     765.73      671.72     7.66       0.00  0.000       0.000
0.009
  17    8.00      7.90     0.07100    0.00  0.00927      0.12   1.14   6.72     765.73      671.72     7.66       0.00  0.000       0.000
0.009
  18    7.90      7.80     0.07100    0.00  0.00927      0.12   1.14   6.72     765.73      671.72     7.66       0.00  0.000       0.000
0.009
  19    7.80      7.70     0.07100    0.00  0.00927      0.12   1.14   6.72     765.73      671.72     7.66       0.00  0.000       0.000
0.009
  20    7.70      7.60     0.07100    0.00  0.00927      0.12   1.14   6.72     765.73      671.72     7.66       0.00  0.000       0.000
0.009

 TOT                                                  1.25               7657.31     6717.17
 AVG                                     0.00927             1.14   6.72                          7.66
 CUM                                                  2.10

*********************************************** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***********************************************

 ELEM  ENDING  SAT    REAER   CBOD  CBOD  ANBOD  BKGD  FULL  CORR   ORGN  ORGN   NH3   NH3  DENIT  PO4   ALG   MAC   COLI    NCM
NCM
 NO.     DIST  D.O.    RATE  DECAY  SETT  DECAY   SOD   SOD   SOD  DECAY  SETT  DECAY  SRCE  RATE  SRCE  PROD  PROD  DECAY  DECAY
SETT
              mg/L    1/da   1/da  1/da   1/da     *     *     *    1/da  1/da   1/da    *    1/da    *    **    **    1/da   1/da
1/da

  11   8.500 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03
  12   8.400 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03
  13   8.300 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03
  14   8.200 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03
  15   8.100 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03
  16   8.000 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03
  17   7.900 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03
  18   7.800 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03
  19   7.700 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03
  20   7.600 10.02    0.63   0.08  0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00  0.00  0.00  0.00  0.00   0.00   0.11
0.03

 20 DEG C RATE                 0.10         0.00        0.69  0.00        0.00  0.00   0.00  0.00              0.00   8.75
 AVG 20 DEG C RATE    0.70           0.06                            0.00                                                   0.03

 * g/sq m/d           ** mg/L/day

************************************************ WATER QUALITY CONSTITUENT VALUES ************************************************
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ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
11	8.500	15.30	0.00	20.40	5.40	8.50	7.01	7.01	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.36
12	8.400	15.30	0.00	20.40	5.40	8.39	7.08	7.08	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.31
13	8.300	15.30	0.00	20.40	5.40	8.28	7.16	7.16	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.26
14	8.200	15.30	0.00	20.40	5.40	8.19	7.23	7.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.22
15	8.100	15.30	0.00	20.40	5.40	8.10	7.31	7.31	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.17
16	8.000	15.30	0.00	20.40	5.40	8.01	7.38	7.38	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.12
17	7.900	15.30	0.00	20.40	5.40	7.94	7.45	7.45	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.08
18	7.800	15.30	0.00	20.40	5.40	7.87	7.52	7.52	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	8.03
19	7.700	15.30	0.00	20.40	5.40	7.80	7.58	7.58	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.99
20	7.600	15.30	0.00	20.40	5.40	7.74	7.65	7.65	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.94

* CM-I = CHLORIDES MG/L　　CM-II = SULFATES MG/L　　NCM = NBOD MG/L

** g/cu m

FINAL REPORT　Marsh @ Welcome Rd.　MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 3　UT LDB-SITE 4　02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
21	UPR RCH	0.07100	15.30	0.00	20.40	5.40	7.74	7.65	7.65	0.00	0.00	0.00	0.00	11.90	0.00	7.94

*** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
21	7.60	7.51	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
22	7.51	7.41	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
23	7.41	7.32	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
24	7.32	7.22	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
25	7.22	7.13	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
26	7.13	7.03	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	0.007
27	7.03	6.94	0.07100	0.00	0.00704	0.16	1.09	9.23	958.60	876.79	10.09	0.00	0.000	0.000	

```
0.007
  28    6.94     6.84     0.07100   0.00  0.00704      0.16   1.09    9.23     958.60       876.79   10.09       0.00  0.000       0.000
0.007
  29    6.84     6.75     0.07100   0.00  0.00704      0.16   1.09    9.23     958.60       876.79   10.09       0.00  0.000       0.000
0.007
  30    6.75     6.65     0.07100   0.00  0.00704      0.16   1.09    9.23     958.60       876.79   10.09       0.00  0.000       0.000
0.007

 TOT                                              1.56                    9586.05    8767.93
 AVG                                  0.00704             1.09    9.23                          10.09
 CUM                                              3.66

********************************************** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***********************************************

 ELEM  ENDING  SAT    REAER   CBOD   CBOD  ANBOD  BKGD  FULL  CORR   ORGN  ORGN    NH3   NH3  DENIT   PO4   ALG   MAC   COLI    NCM
NCM
 NO.     DIST  D.O.    RATE  DECAY   SETT  DECAY   SOD   SOD   SOD  DECAY  SETT  DECAY  SRCE   RATE  SRCE  PROD  PROD  DECAY  DECAY
SETT
               mg/L    1/da   1/da   1/da   1/da    *     *     *    1/da  1/da   1/da    *     1/da    *     **    **    1/da   1/da
1/da

  21    7.505 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03
  22    7.410 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03
  23    7.315 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03
  24    7.220 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03
  25    7.125 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03
  26    7.030 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03
  27    6.935 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03
  28    6.840 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03
  29    6.745 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03
  30    6.650 10.02    0.63   0.08   0.05   0.00  0.51  0.51  0.51   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.06
0.03

 20 DEG C RATE                0.10          0.00        0.69  0.00         0.00  0.00   0.00  0.00              0.00   8.71
 AVG 20 DEG C RATE     0.70          0.06                             0.00                                                     0.03

 * g/sq m/d            ** mg/L/day

*********************************************** WATER QUALITY CONSTITUENT VALUES ***********************************************

 ELEM  ENDING   TEMP  SALN    CM-I    CM-II    DO    BOD   EBOD   ORGN   NH3  NO3+2   TOTN   PHOS  CHL A   MACRO    COLI      NCM
 NO.     DIST  DEG C   PPT     *        *     mg/L  mg/L   mg/L   mg/L  mg/L   mg/L   mg/L   mg/L   µg/L     **   #/100mL      *
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21	7.505	15.30	0.00	20.40	5.40	7.72	7.79	7.79	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.92
22	7.410	15.30	0.00	20.40	5.40	7.71	7.92	7.92	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.90
23	7.315	15.30	0.00	20.40	5.40	7.69	8.05	8.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.88
24	7.220	15.30	0.00	20.40	5.40	7.68	8.18	8.18	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.86
25	7.125	15.30	0.00	20.40	5.40	7.66	8.31	8.31	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.84
26	7.030	15.30	0.00	20.40	5.40	7.65	8.43	8.43	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.82
27	6.935	15.30	0.00	20.40	5.40	7.63	8.55	8.55	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.80
28	6.840	15.30	0.00	20.40	5.40	7.62	8.67	8.67	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.78
29	6.745	15.30	0.00	20.40	5.40	7.60	8.78	8.78	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.76
30	6.650	15.30	0.00	20.40	5.40	7.59	8.90	8.90	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.75

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 4   RKM 6.65-E. OF TOPSY RD.   02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
31	UPR RCH	0.07100	15.30	0.00	20.40	5.40	7.59	8.90	8.90	0.00	0.00	0.00	0.00	11.90	0.00	7.75

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
31	6.65	6.52	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
32	6.52	6.39	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
33	6.39	6.26	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
34	6.26	6.13	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
35	6.13	6.00	0.07100	0.00	0.00704	0.21	1.09	9.23	1311.77	1199.82	10.09	0.00	0.000	0.000	0.007
TOT						1.07			6558.87	5999.11					
AVG					0.00704		1.09	9.23			10.09				
CUM						4.73									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
31	6.520	10.02	0.63	0.08	0.05	0.00	0.63	0.63	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
32	6.390	10.02	0.63	0.08	0.05	0.00	0.63	0.63	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
33	6.260	10.02	0.63	0.08	0.05	0.00	0.63	0.63	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
34	6.130	10.02	0.63	0.08	0.05	0.00	0.63	0.63	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
35	6.000	10.02	0.63	0.08	0.05	0.00	0.63	0.63	0.63	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
20 DEG C RATE				0.10		0.00		0.85	0.00		0.00	0.00	0.00	0.00			0.00	8.66		
AVG 20 DEG C RATE			0.70		0.06					0.00									0.03	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
31	6.520	15.30	0.00	20.40	5.40	7.55	9.01	9.01	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.71
32	6.390	15.30	0.00	20.40	5.40	7.51	9.13	9.13	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.67
33	6.260	15.30	0.00	20.40	5.40	7.48	9.24	9.24	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.64
34	6.130	15.30	0.00	20.40	5.40	7.45	9.34	9.34	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.60
35	6.000	15.30	0.00	20.40	5.40	7.42	9.45	9.45	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.57

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 5 EAST OF TOPSY RD.-RKM 5.2 02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
36	UPR RCH	0.07100	15.30	0.00	20.40	5.40	7.42	9.45	9.45	0.00	0.00	0.00	0.00	11.90	0.00	7.57

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST	ENDING DIST	FLOW	PCT EFF	ADVCTV VELO	TRAVEL TIME	DEPTH	WIDTH	VOLUME	SURFACE AREA	X-SECT AREA	TIDAL PRISM	TIDAL VELO	DISPRSN	MEAN VELO
	km	km	cms		m/s	days	m	m	cu m	sq m	sq m	cu m	m/s	sq m/s	m/s
36	6.00	5.90	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
37	5.90	5.80	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
38	5.80	5.70	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
39	5.70	5.60	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
40	5.60	5.50	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
41	5.50	5.40	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
42	5.40	5.30	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
43	5.30	5.20	0.07100	0.00	0.00630	0.18	0.97	11.58	1127.18	1158.38	11.27	0.00	0.000	0.000	0.006
TOT						1.47			9017.48	9267.00					
AVG					0.00630		0.97	11.58			11.27				
CUM						6.20									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT
		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
36	5.900	10.02	0.70	0.08	0.05	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
37	5.800	10.02	0.70	0.08	0.05	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
38	5.700	10.02	0.70	0.08	0.05	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
39	5.600	10.02	0.70	0.08	0.05	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
40	5.500	10.02	0.70	0.08	0.05	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
41	5.400	10.02	0.70	0.08	0.05	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
42	5.300	10.02	0.70	0.08	0.05	0.00	0.90	0.90	0.90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	

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0.03
 43    5.200 10.02    0.70    0.08  0.05    0.00  0.90  0.90  0.90    0.00  0.00    0.00  0.00    0.00  0.00  0.00  0.00    0.00    0.06
0.03

 20 DEG C RATE                0.10          0.00        1.21   0.00           0.00  0.00    0.00  0.00                0.00   8.62
 AVG 20 DEG C RATE     0.77         0.06                              0.00                                                          0.03
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* g/sq m/d   ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
36	5.900	15.30	0.00	20.40	5.40	7.37	9.53	9.53	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.53
37	5.800	15.30	0.00	20.40	5.40	7.33	9.60	9.60	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.49
38	5.700	15.30	0.00	20.40	5.40	7.29	9.68	9.68	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.45
39	5.600	15.30	0.00	20.40	5.40	7.25	9.75	9.75	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.41
40	5.500	15.30	0.00	20.40	5.40	7.22	9.82	9.82	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.38
41	5.400	15.30	0.00	20.40	5.40	7.19	9.89	9.89	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.34
42	5.300	15.30	0.00	20.40	5.40	7.16	9.96	9.96	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.30
43	5.200	15.30	0.00	20.40	5.40	7.14	10.03	10.03	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.27

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 6   RKM 5.2-UT LDB   02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
44	UPR RCH	0.07100	15.30	0.00	20.40	5.40	7.14	10.03	10.03	0.00	0.00	0.00	0.00	11.90	0.00	7.27

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
44	5.20	5.10	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
45	5.10	5.00	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	

															0.006
46	5.00	4.90	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
47	4.90	4.80	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
48	4.80	4.70	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
49	4.70	4.60	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
50	4.60	4.50	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
51	4.50	4.40	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
52	4.40	4.30	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
53	4.30	4.20	0.07100	0.00	0.00566	0.20	0.92	13.58	1253.88	1358.38	12.54	0.00	0.000	0.000	0.006
TOT						2.04			12538.81	13583.75					
AVG					0.00566		0.92	13.58			12.54				
CUM						8.24									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
44	5.100	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
45	5.000	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
46	4.900	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
47	4.800	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
48	4.700	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
49	4.600	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
50	4.500	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
51	4.400	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
52	4.300	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
53	4.200	10.02	0.73	0.08	0.05	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.06	0.03
20 DEG C RATE				0.10		0.00		1.58	0.00		0.00	0.00	0.00	0.00			0.00	8.58		

AVG 20 DEG C RATE 0.81 0.06 0.00 0.03

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
44	5.100	15.30	0.00	20.40	5.40	7.07	10.05	10.05	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.21
45	5.000	15.30	0.00	20.40	5.40	7.01	10.08	10.08	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.15
46	4.900	15.30	0.00	20.40	5.40	6.95	10.11	10.11	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.09
47	4.800	15.30	0.00	20.40	5.40	6.91	10.13	10.13	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	7.04
48	4.700	15.30	0.00	20.40	5.40	6.87	10.16	10.16	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.98
49	4.600	15.30	0.00	20.40	5.40	6.84	10.18	10.18	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.92
50	4.500	15.30	0.00	20.40	5.40	6.81	10.20	10.20	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.87
51	4.400	15.30	0.00	20.40	5.40	6.78	10.23	10.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.82
52	4.300	15.30	0.00	20.40	5.40	6.76	10.25	10.25	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.76
53	4.200	15.30	0.00	20.40	5.40	6.74	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.71

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT *Marsh @ Welcome Rd.*
REACH NO. 7 UT LDB-SITE 3

MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

*** REACH INPUTS ***

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
54	UPR RCH	0.07100	15.30	0.00	20.40	5.40	6.74	10.27	10.27	0.00	0.00	0.00	0.00	11.90	0.00	6.71

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
54	4.20	4.10	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
55	4.10	4.00	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
56	4.00	3.90	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006

57	3.90	3.80	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
58	3.80	3.70	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
59	3.70	3.60	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
60	3.60	3.50	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
61	3.50	3.40	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
62	3.40	3.30	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
TOT						1.73			10627.46	12637.69					
AVG					0.00601		0.84	14.04			11.81				
CUM						9.98									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
54	4.100	10.02	0.81	0.10	0.06	0.00	1.26	1.26	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
55	4.000	10.02	0.81	0.10	0.06	0.00	1.26	1.26	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
56	3.900	10.02	0.81	0.10	0.06	0.00	1.26	1.26	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
57	3.800	10.02	0.81	0.10	0.06	0.00	1.26	1.26	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
58	3.700	10.02	0.81	0.10	0.06	0.00	1.26	1.26	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
59	3.600	10.02	0.81	0.10	0.06	0.00	1.26	1.26	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
60	3.500	10.02	0.81	0.10	0.06	0.00	1.26	1.26	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
61	3.400	10.02	0.81	0.10	0.06	0.00	1.26	1.26	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
62	3.300	10.02	0.81	0.10	0.06	0.00	1.26	1.26	1.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
20 DEG C RATE				0.13		0.00		1.69	0.00		0.00	0.00	0.00	0.00			0.00	8.54		
AVG 20 DEG C RATE			0.89		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
54	4.100	15.30	0.00	20.40	5.40	6.67	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.64
55	4.000	15.30	0.00	20.40	5.40	6.62	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.56
56	3.900	15.30	0.00	20.40	5.40	6.57	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.49
57	3.800	15.30	0.00	20.40	5.40	6.53	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.42
58	3.700	15.30	0.00	20.40	5.40	6.49	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.35
59	3.600	15.30	0.00	20.40	5.40	6.46	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.29
60	3.500	15.30	0.00	20.40	5.40	6.44	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.22
61	3.400	15.30	0.00	20.40	5.40	6.42	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.15
62	3.300	15.30	0.00	20.40	5.40	6.40	10.27	10.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.09

* *CM-I = CHLORIDES* MG/L   *CM-II = SULFATES* MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT *Marsh @ Welcome Rd.*
REACH NO. 8 SITE 3-LITTLE MARSH B.

MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
63	UPR RCH	0.07100	15.30	0.00	20.40	5.40	6.40	10.27	10.27	0.00	0.00	0.00	0.00	11.90	0.00	6.09

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
63	3.30	3.20	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
64	3.20	3.10	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
65	3.10	3.00	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
66	3.00	2.90	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
67	2.90	2.80	0.07100	0.00	0.00601	0.19	0.84	14.04	1180.83	1404.19	11.81	0.00	0.000	0.000	0.006
TOT						0.96			5904.15	7020.94					
AVG					0.00601		0.84	14.04			11.81				
CUM						10.94									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT
		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
63	3.200	10.02	0.81	0.10	0.06	0.00	1.22	1.22	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
64	3.100	10.02	0.81	0.10	0.06	0.00	1.22	1.22	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
65	3.000	10.02	0.81	0.10	0.06	0.00	1.22	1.22	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
66	2.900	10.02	0.81	0.10	0.06	0.00	1.22	1.22	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
67	2.800	10.02	0.81	0.10	0.06	0.00	1.22	1.22	1.22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
20 DEG C RATE				0.13		0.00		1.64	0.00		0.00	0.00	0.00	0.00			0.00	8.49		
AVG 20 DEG C RATE			0.89		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
63	3.200	15.30	0.00	20.40	5.40	6.40	10.25	10.25	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	6.02
64	3.100	15.30	0.00	20.40	5.40	6.39	10.24	10.24	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.95
65	3.000	15.30	0.00	20.40	5.40	6.39	10.22	10.22	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.89
66	2.900	15.30	0.00	20.40	5.40	6.39	10.21	10.21	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.83
67	2.800	15.30	0.00	20.40	5.40	6.36	10.18	10.18	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.73

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L
** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 9 LITTLE MARSH B.-BEAVER DAM 02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
68	UPR RCH	0.07100	15.30	0.00	20.40	5.40	6.36	10.18	10.18	0.00	0.00	0.00	0.00	11.90	0.00	

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
68	2.80	2.75	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
69	2.75	2.70	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
70	2.70	2.65	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
71	2.65	2.60	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
72	2.60	2.55	0.07100	0.00	0.00177	0.33	1.47	27.40	2009.57	1369.83	40.19	0.00	0.000	0.050	0.002
TOT						1.64			10047.84	6849.14					
AVG					0.00177		1.47	27.40			40.19				
CUM						12.58									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
68	2.750	10.02	0.43	0.10	0.06	0.00	1.31	1.31	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
69	2.700	10.02	0.43	0.10	0.06	0.00	1.31	1.31	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
70	2.650	10.02	0.43	0.10	0.06	0.00	1.31	1.31	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
71	2.600	10.02	0.43	0.10	0.06	0.00	1.31	1.31	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
72	2.550	10.02	0.43	0.10	0.06	0.00	1.31	1.31	1.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.03
20 DEG C RATE				0.13		0.00		1.76	0.00		0.00	0.00	0.00	0.00			0.00	8.45		
AVG 20 DEG C RATE			0.48		0.07					0.00									0.04	

* g/sq m/d ** mg/L/day

*** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
68	2.750	15.30	0.00	20.40	5.40	6.10	10.01	10.01	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.47
69	2.700	15.30	0.00	20.40	5.40	5.96	9.88	9.88	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.29
70	2.650	15.30	0.00	20.39	5.40	5.87	9.72	9.72	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	5.09
71	2.600	15.30	0.00	20.38	5.40	5.92	9.45	9.45	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.84
72	2.550	15.30	0.00	20.34	5.39	6.33	8.89	8.89	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.45

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 10   BEAVER DAM   02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

*** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
73	UPR RCH	0.07100	15.30	0.00	20.34	5.39	6.33	8.89	8.89	0.00	0.00	0.00	0.00	11.90	0.00	4.45

** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
73	2.55	2.55	0.07100	0.00	0.00381	0.00	0.65	28.73	18.62	28.73	18.62	0.00	0.000	0.500	0.004
TOT						0.00			18.62	28.73					
AVG					0.00381		0.65	28.73			18.62				
CUM						12.58									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da

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 73    2.549  9.31  488.11   0.00  0.00   0.00  0.00  0.00  0.00   0.00  0.00   0.00  0.00   0.00  0.00  0.00  0.00   0.00   0.00
0.00

 20 DEG C RATE                 0.00          0.00         0.00   0.00           0.00  0.00   0.00  0.00                  0.00   8.41
 AVG 20 DEG C RATE   500.00          0.00                               0.00                                                       0.00

 * g/sq m/d             ** mg/L/day
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** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
73	2.549	18.80	0.00	20.28	5.38	7.02	8.19	8.19	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	4.06

* CM-I = CHLORIDES MG/L　　CM-II = SULFATES MG/L　　NCM = NBOD MG/L
** g/cu m

FINAL REPORT　Marsh @ Welcome Rd.　　MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 11　BEAVER DAM-RKM 2.0　　02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
74	UPR RCH	0.07100	18.80	0.00	20.28	5.38	7.02	8.19	8.19	0.00	0.00	0.00	0.00	11.90	0.00	4.06

*** HYDRAULIC PARAMETER VALUES ***

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
74	2.55	2.44	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002
75	2.44	2.33	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002
76	2.33	2.22	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002
77	2.22	2.11	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002
78	2.11	2.00	0.07100	0.00	0.00237	0.54	1.09	27.40	3294.81	3013.62	29.95	0.00	0.000	0.900	0.002

TOT		2.69			16474.07	15068.11	
AVG	0.00237		1.09	27.40			29.95
CUM		15.26					

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT
		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
74	2.440	9.31	0.63	0.14	0.08	0.00	1.95	1.95	1.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
75	2.330	9.31	0.63	0.14	0.08	0.00	1.95	1.95	1.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
76	2.220	9.31	0.63	0.14	0.08	0.00	1.95	1.95	1.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
77	2.110	9.31	0.63	0.14	0.08	0.00	1.95	1.95	1.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
78	2.000	9.31	0.63	0.14	0.08	0.00	1.95	1.95	1.95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
20 DEG C RATE				0.15		0.00		2.10	0.00		0.00	0.00	0.00	0.00			0.00	8.36		
AVG 20 DEG C RATE			0.64		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
74	2.440	18.80	0.00	20.27	5.38	6.75	7.96	7.96	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.93
75	2.330	18.80	0.00	20.23	5.37	6.38	7.60	7.60	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.72
76	2.220	18.80	0.00	20.18	5.36	6.13	7.27	7.27	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.51
77	2.110	18.80	0.00	20.11	5.35	5.97	6.96	6.96	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.31
78	2.000	18.80	0.00	20.03	5.33	5.93	6.68	6.68	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	3.12

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 12   RKM 2.0-UT LDB   02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
79	UPR RCH	0.07100	18.80	0.00	20.03	5.33	5.93	6.68	6.68	0.00	0.00	0.00	0.00	11.90	0.00	3.12

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
79	2.00	1.90	0.07100	0.00	0.00210	0.55	1.19	28.40	3388.58	2839.66	33.89	0.00	0.000	0.900	0.002
80	1.90	1.80	0.07100	0.00	0.00210	0.55	1.19	28.40	3388.58	2839.66	33.89	0.00	0.000	0.900	0.002
81	1.80	1.70	0.07100	0.00	0.00210	0.55	1.19	28.40	3388.58	2839.66	33.89	0.00	0.000	0.900	0.002
82	1.70	1.60	0.07100	0.00	0.00210	0.55	1.19	28.40	3388.58	2839.66	33.89	0.00	0.000	0.900	0.002
TOT						2.21			13554.33	11358.62					
AVG					0.00210		1.19	28.40			33.89				
CUM						17.47									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
79	1.900	9.31	0.57	0.14	0.08	0.00	1.32	1.32	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
80	1.800	9.31	0.57	0.14	0.08	0.00	1.32	1.32	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
81	1.700	9.31	0.57	0.14	0.08	0.00	1.32	1.32	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
82	1.600	9.31	0.57	0.14	0.08	0.00	1.32	1.32	1.32	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
20 DEG C RATE				0.15		0.00		1.42	0.00		0.00	0.00	0.00	0.00			0.00	8.31		
AVG 20 DEG C RATE			0.59		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
79	1.900	18.80	0.00	19.93	5.31	6.01	6.44	6.44	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.94
80	1.800	18.80	0.00	19.83	5.29	6.14	6.23	6.23	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.78
81	1.700	18.80	0.00	19.69	5.27	6.37	6.03	6.03	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.63
82	1.600	18.80	0.00	19.53	5.24	6.71	5.82	5.82	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.48

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd. MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 13 UT LDB-NATURAL DIV. TO CAL.R. 02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
83	UPR RCH	0.07100	18.80	0.00	19.53	5.24	6.71	5.82	5.82	0.00	0.00	0.00	0.00	11.90	0.00	2.48

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
83	1.60	1.50	0.07100	0.00	0.00186	0.62	1.32	28.90	3823.90	2889.66	38.24	0.00	0.000	0.950	0.002
84	1.50	1.40	0.07100	0.00	0.00186	0.62	1.32	28.90	3823.90	2889.66	38.24	0.00	0.000	0.950	0.002
85	1.40	1.30	0.07100	0.00	0.00186	0.62	1.32	28.90	3823.90	2889.66	38.24	0.00	0.000	0.950	0.002
TOT						1.87			11471.71	8668.97					
AVG					0.00186		1.32	28.90			38.24				
CUM						19.34									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY

SETT

		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	1/da
83	1.500	9.31	1.70	0.14	0.08	0.00	1.28	1.28	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
84	1.400	9.31	1.70	0.14	0.08	0.00	1.28	1.28	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
85	1.300	9.31	1.70	0.14	0.08	0.00	1.28	1.28	1.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.09	0.04
20 DEG C RATE				0.15		0.00		1.38	0.00		0.00	0.00	0.00	0.00			0.00	8.26		
AVG 20 DEG C RATE			1.74		0.08					0.00									0.04	

* g/sq m/d   ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
83	1.500	18.80	0.00	19.34	5.20	7.17	5.62	5.62	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.34
84	1.400	18.80	0.00	19.14	5.17	7.49	5.43	5.43	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.22
85	1.300	18.80	0.00	18.89	5.12	7.72	5.24	5.24	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	2.10

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

FINAL REPORT   Marsh @ Welcome Rd.   MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
REACH NO. 14   NAT. DIV. TO CAL.R.-RKM RKM 0.8   02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
86	UPR RCH	0.07100	18.80	0.00	18.89	5.12	7.72	5.24	5.24	0.00	0.00	0.00	0.00	11.90	0.00	2.10

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
86	1.30	1.20	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	

0.002

87	1.20	1.10	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	0.002
88	1.10	1.00	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	0.002
89	1.00	0.90	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	0.002
90	0.90	0.80	0.07100	0.00	0.00181	0.64	1.33	29.40	3919.47	2939.66	39.19	0.00	0.000	1.000	0.002
TOT						3.19			19597.33	14698.28					
AVG					0.00181		1.33	29.40			39.19				
CUM						22.54									

** BIOLOGICAL AND PHYSICAL COEFFICIENTS **

ELEM NO.	ENDING DIST	SAT D.O. mg/L	REAER RATE 1/da	CBOD DECAY 1/da	CBOD SETT 1/da	ANBOD DECAY 1/da	BKGD SOD *	FULL SOD *	CORR SOD *	ORGN DECAY 1/da	ORGN SETT 1/da	NH3 DECAY 1/da	NH3 SRCE *	DENIT RATE 1/da	PO4 SRCE *	ALG PROD **	MAC PROD **	COLI DECAY 1/da	NCM DECAY 1/da	NCM SETT 1/da
86	1.200	9.31	1.68	0.14	0.08	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
87	1.100	9.31	1.68	0.14	0.08	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
88	1.000	9.31	1.68	0.14	0.08	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
89	0.900	9.31	1.68	0.14	0.08	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
90	0.800	9.31	1.68	0.14	0.08	0.00	1.18	1.18	1.18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
20 DEG C RATE				0.15		0.00		1.27	0.00		0.00	0.00	0.00	0.00			0.00	8.22		
AVG 20 DEG C RATE			1.73		0.08					0.00									0.04	

* g/sq m/d ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES **

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
86	1.200	18.80	0.00	18.61	5.07	7.90	5.03	5.03	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.99
87	1.100	18.80	0.00	18.28	5.01	8.03	4.84	4.84	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.88
88	1.000	18.80	0.00	17.90	4.94	8.12	4.66	4.66	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.78
89	0.900	18.80	0.00	17.44	4.85	8.20	4.49	4.49	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.67
90	0.800	18.80	0.00	16.91	4.75	8.26	4.32	4.32	0.00	0.00	0.00	0.00	0.00	11.90	0.00	0.00	1.57

* CM-I = CHLORIDES MG/L CM-II = SULFATES MG/L NCM = NBOD MG/L

** g/cu m

FINAL REPORT Marsh @ Welcome Rd.
REACH NO. 15 UPPER OUTLET-LOWER OUTLET

MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

** REACH INPUTS **

ELEM NO.	TYPE	FLOW cms	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	PHOS mg/L	CHL A µg/L	COLI #/100mL	NCM *
91	UPR RCH	0.07100	18.80	0.00	16.91	4.75	8.26	4.32	4.32	0.00	0.00	0.00	0.00	11.90	0.00	1.57

** HYDRAULIC PARAMETER VALUES **

ELEM NO.	BEGIN DIST km	ENDING DIST km	FLOW cms	PCT EFF	ADVCTV VELO m/s	TRAVEL TIME days	DEPTH m	WIDTH m	VOLUME cu m	SURFACE AREA sq m	X-SECT AREA sq m	TIDAL PRISM cu m	TIDAL VELO m/s	DISPRSN sq m/s	MEAN VELO m/s
91	0.80	0.70	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
92	0.70	0.60	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
93	0.60	0.50	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
94	0.50	0.40	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
95	0.40	0.30	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
96	0.30	0.20	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
97	0.20	0.10	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
98	0.10	0.00	0.07100	0.00	0.00177	0.65	1.34	29.90	4016.03	2989.66	40.16	0.00	0.000	1.000	0.002
TOT						5.24			32128.22	23917.25					
AVG					0.00177		1.34	29.90			40.16				
CUM						27.78									

*** BIOLOGICAL AND PHYSICAL COEFFICIENTS ***

ELEM NO.	ENDING DIST	SAT D.O.	REAER RATE	CBOD DECAY	CBOD SETT	ANBOD DECAY	BKGD SOD	FULL SOD	CORR SOD	ORGN DECAY	ORGN SETT	NH3 DECAY	NH3 SRCE	DENIT RATE	PO4 SRCE	ALG PROD	MAC PROD	COLI DECAY	NCM DECAY	NCM SETT
		mg/L	1/da	1/da	1/da	1/da	*	*	*	1/da	1/da	1/da	*	1/da	*	**	**	1/da	1/da	

1/da

91	0.700	9.31	1.67	0.14	0.08	0.00	1.11	1.11	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
92	0.600	9.31	1.67	0.14	0.08	0.00	1.11	1.11	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
93	0.500	9.31	1.67	0.14	0.08	0.00	1.11	1.11	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
94	0.400	9.31	1.67	0.14	0.08	0.00	1.11	1.11	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
95	0.300	9.31	1.67	0.14	0.08	0.00	1.11	1.11	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
96	0.200	9.31	1.67	0.14	0.08	0.00	1.11	1.11	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
97	0.100	9.31	1.67	0.14	0.08	0.00	1.11	1.11	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
98	0.000	9.31	1.67	0.14	0.08	0.00	1.11	1.11	1.11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.07	0.04
20 DEG C RATE				0.15		0.00		1.20	0.00		0.00	0.00	0.00	0.00			0.00	8.17		
AVG 20 DEG C RATE			1.71		0.08					0.00									0.04	

* g/sq m/d   ** mg/L/day

** WATER QUALITY CONSTITUENT VALUES ***

ELEM NO.	ENDING DIST	TEMP DEG C	SALN PPT	CM-I *	CM-II *	DO mg/L	BOD mg/L	EBOD mg/L	ORGN mg/L	NH3 mg/L	NO3+2 mg/L	TOTN mg/L	PHOS mg/L	CHL A µg/L	MACRO **	COLI #/100mL	NCM *
91	0.700	18.80	0.00	16.28	4.64	8.32	4.14	4.14	0.00	0.00	0.00	0.00	0.01	10.90	0.00	0.00	1.46
92	0.600	18.80	0.00	15.56	4.50	8.37	3.99	3.99	0.00	0.00	0.01	0.01	0.03	9.91	0.00	0.00	1.35
93	0.500	18.80	0.00	14.70	4.34	8.43	3.86	3.86	0.00	0.00	0.01	0.01	0.04	8.91	0.00	0.00	1.23
94	0.400	18.80	0.00	13.69	4.15	8.49	3.74	3.74	0.00	0.00	0.01	0.01	0.06	7.91	0.00	0.00	1.11
95	0.300	18.80	0.00	12.51	3.93	8.56	3.64	3.64	0.00	0.00	0.02	0.02	0.07	6.92	0.00	0.00	0.98
96	0.200	18.80	0.00	11.11	3.68	8.67	3.55	3.55	0.00	0.00	0.02	0.02	0.09	5.92	0.00	0.00	0.83
97	0.100	18.80	0.00	9.47	3.37	8.84	3.48	3.48	0.00	0.00	0.03	0.03	0.10	4.93	0.00	0.00	0.66
98	0.000	18.80	0.00	7.54	3.01	9.10	3.43	3.43	0.00	0.00	0.03	0.03	0.12	3.93	0.00	0.00	0.47

* CM-I = CHLORIDES MG/L   CM-II = SULFATES MG/L   NCM = NBOD MG/L

** g/cu m

STREAM SUMMARY
Marsh @ Welcome Rd.

MARSH BAYOU WATERSHED WINTER PROJECTION MODEL (FROM CAL.MODEL #2
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR

TRAVEL TIME = 27.78 DAYS

MAXIMUM EFFLUENT = 0.00 PERCENT

FLOW = 0.07100 TO 0.07100 cms
DISPERSION = 0.0000 TO 1.0000 sq m/s
VELOCITY = 0.00177 TO 0.01254 m/s

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DEPTH              =   0.65   TO    1.47    m
WIDTH              =   5.72   TO   29.90    m

BOD DECAY          =    0.00  TO    0.14    per day
NH3 DECAY          =    0.00  TO    0.00    per day
SDMNT OXYGEN DMND=      0.00  TO    1.95    g/sq m/d
NH3 SOURCE         =    0.00  TO    0.00    g/sq m/d
REAERATION         =    0.43  TO  488.11    per day
BOD SETTLING       =    0.00  TO    0.08    per day
ORGN DECAY         =    0.00  TO    0.00    per day
ORGN SETTLING      =    0.00  TO    0.00    per day

TEMPERATURE        =   15.30  TO   18.80    deg C
DISSOLVED OXYGEN =      5.87  TO    9.84    mg/L


    .....EXECUTION COMPLETED
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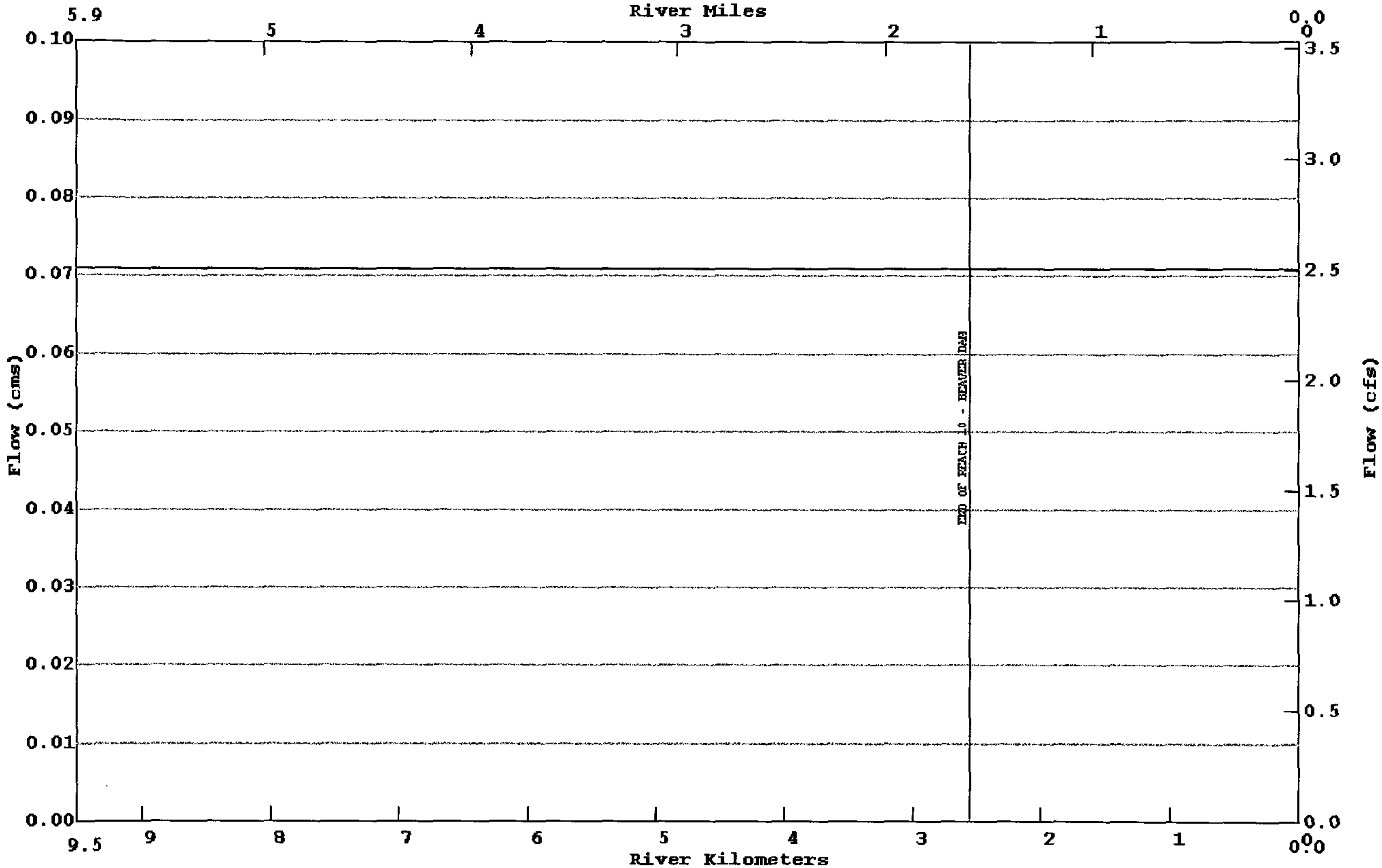
LA-QUAL Version 4.10 Run at 01:03 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap:
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR   min= 0.07   max= 0.07
Marsh Bayou: Welcome Rd.-Calcasieu R.



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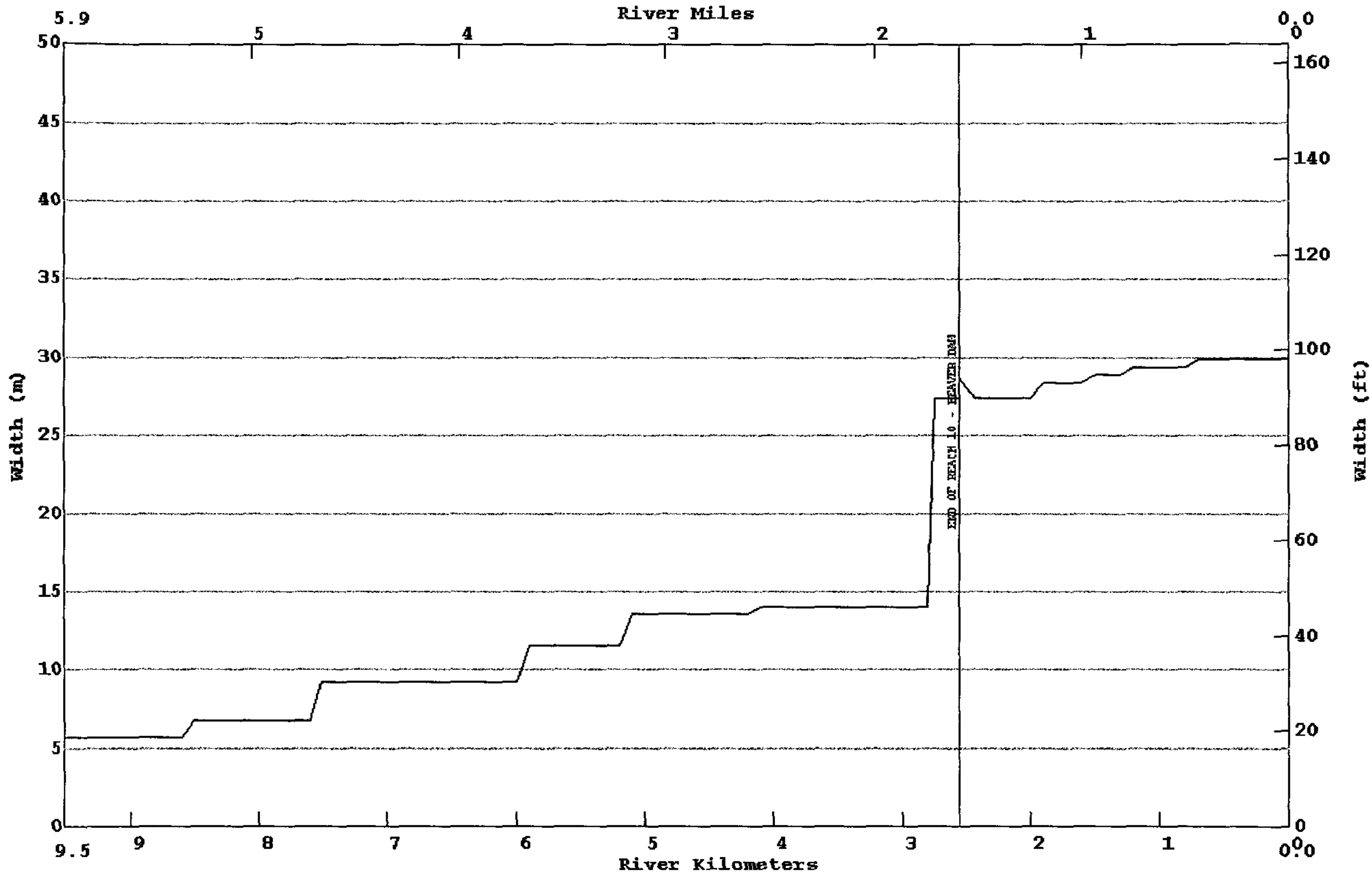
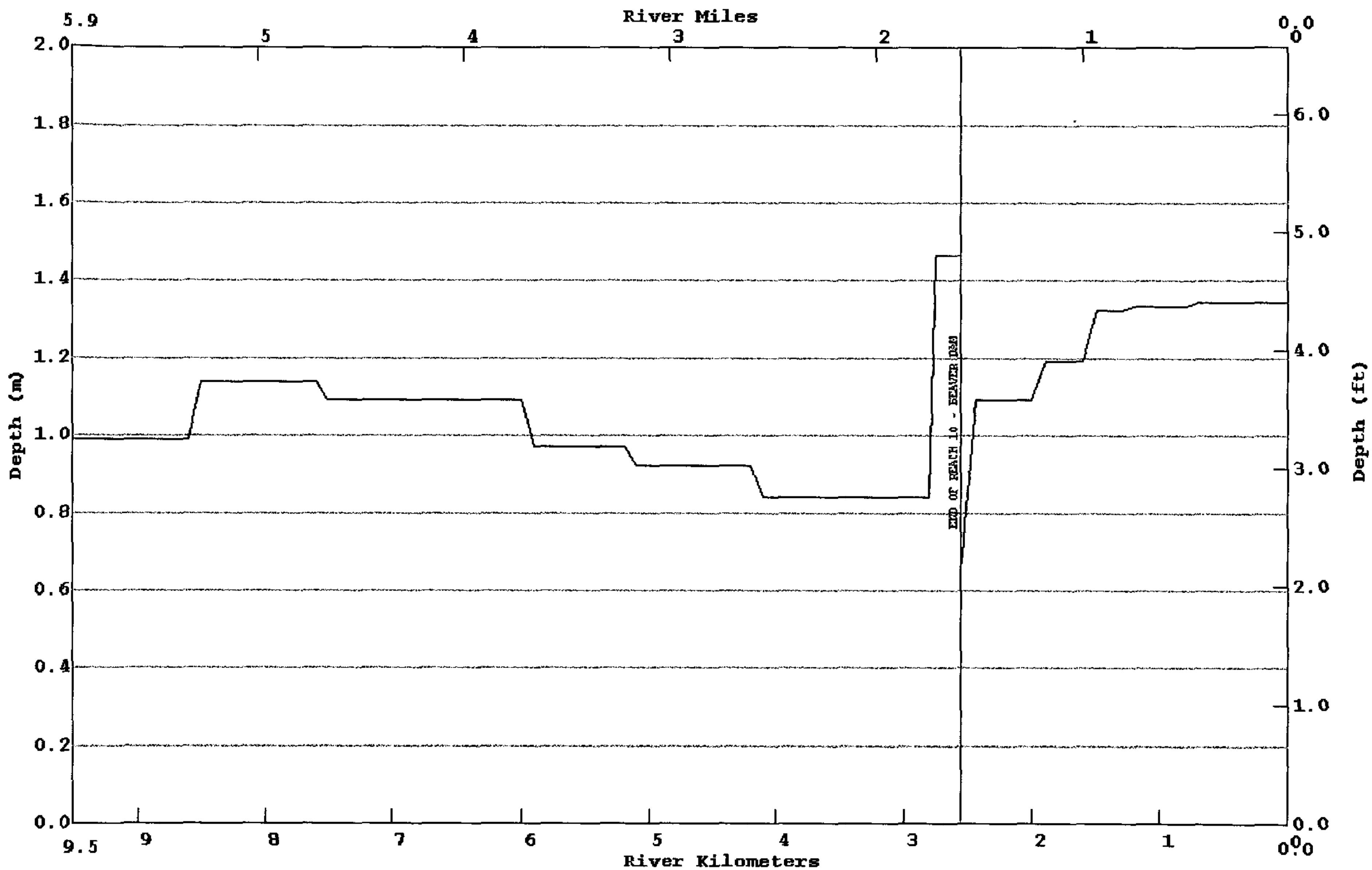
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR   min= 5.72   max= 29.90
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 01:03 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR   min= 0.65 max= 1.47
Marsh Bayou: Welcome Rd.-Calcasieu R.



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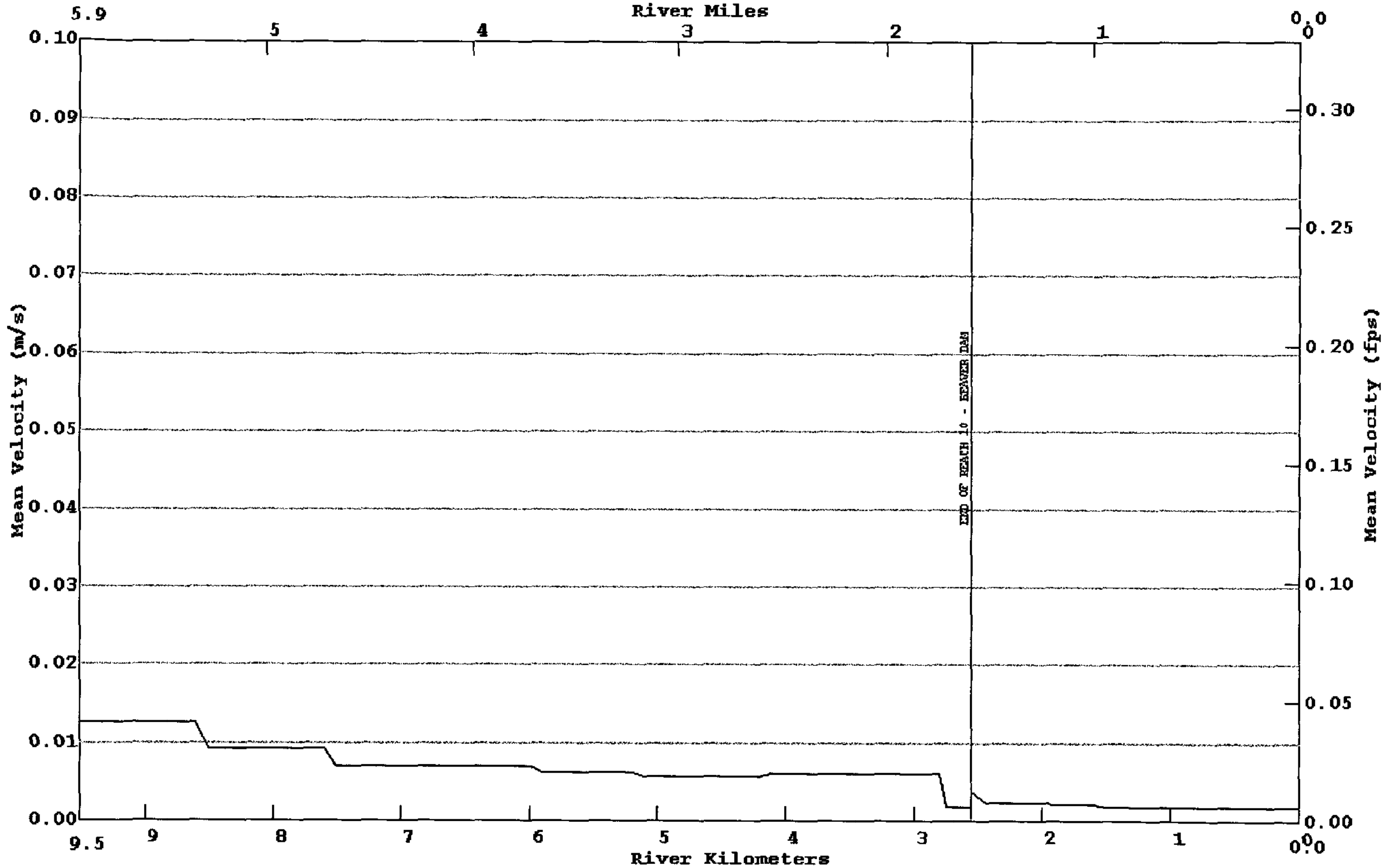
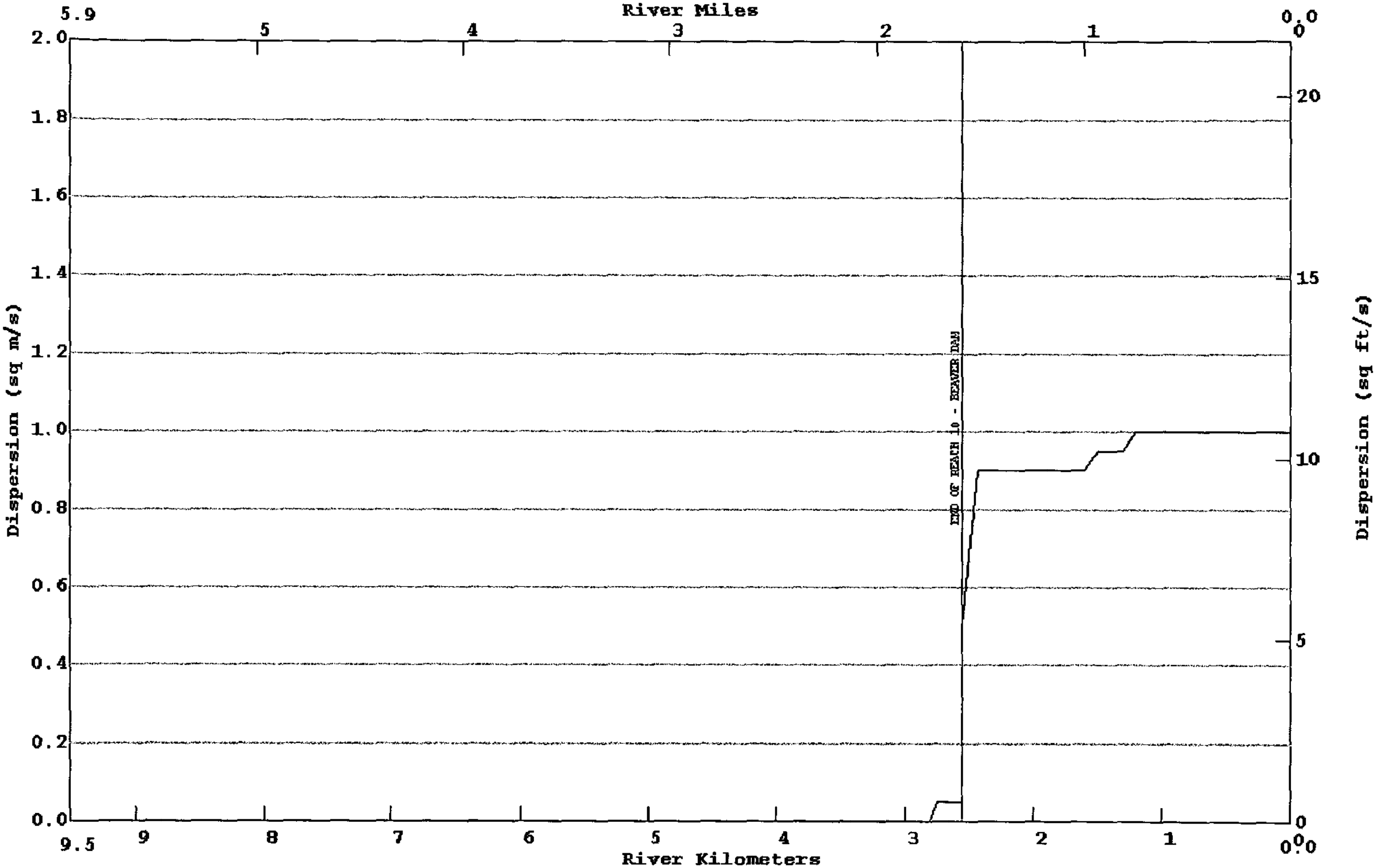
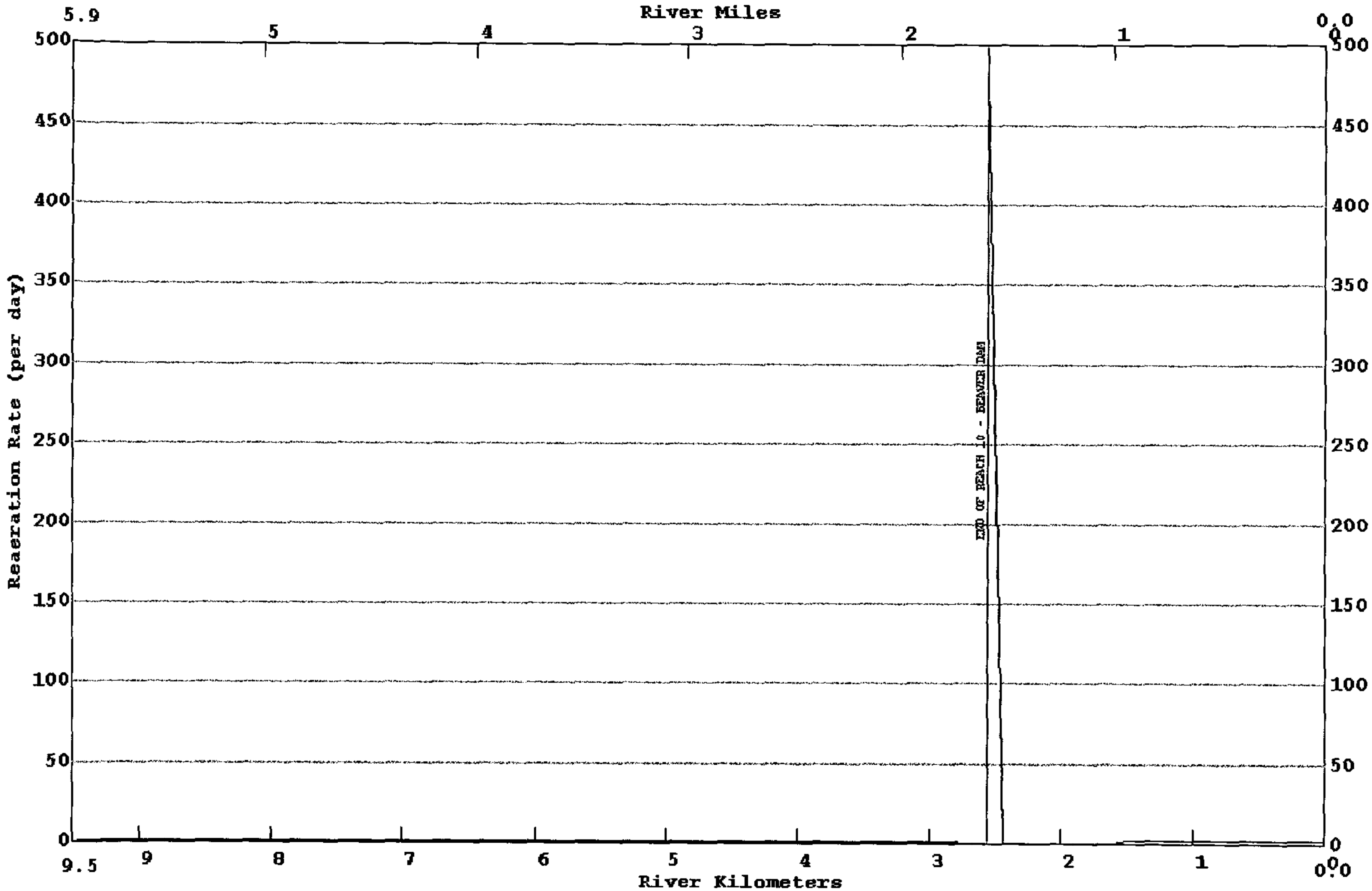
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR   min= 0.00 max= 0.01
Marsh Bayou: Welcome Rd.-Calcasieu R.



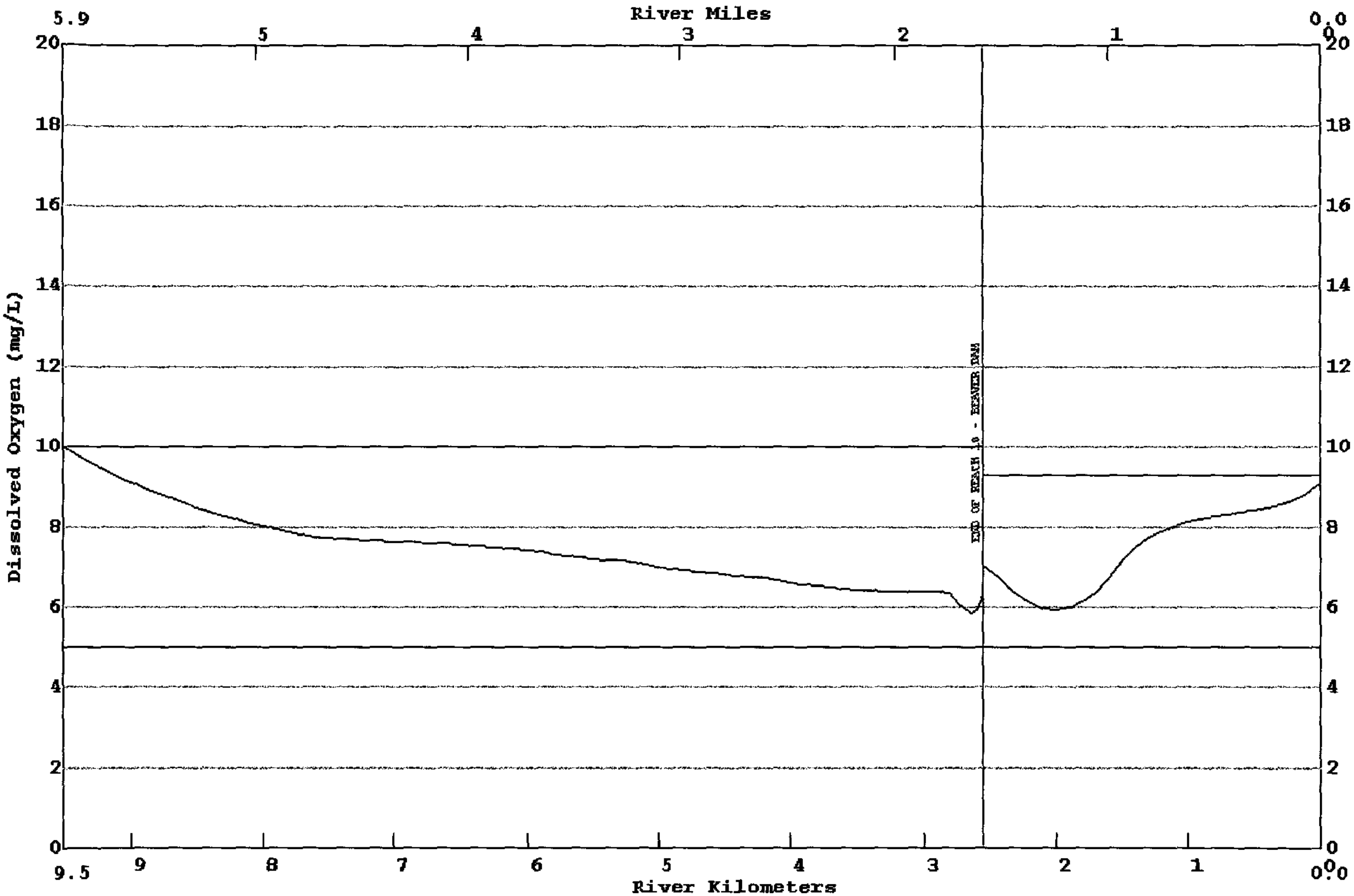
LA-QUAL Version 4.10 Run at 01:03 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR   min= 0.00   max= 1.00
Marsh Bayou: Welcome Rd.-Calcasieu R.



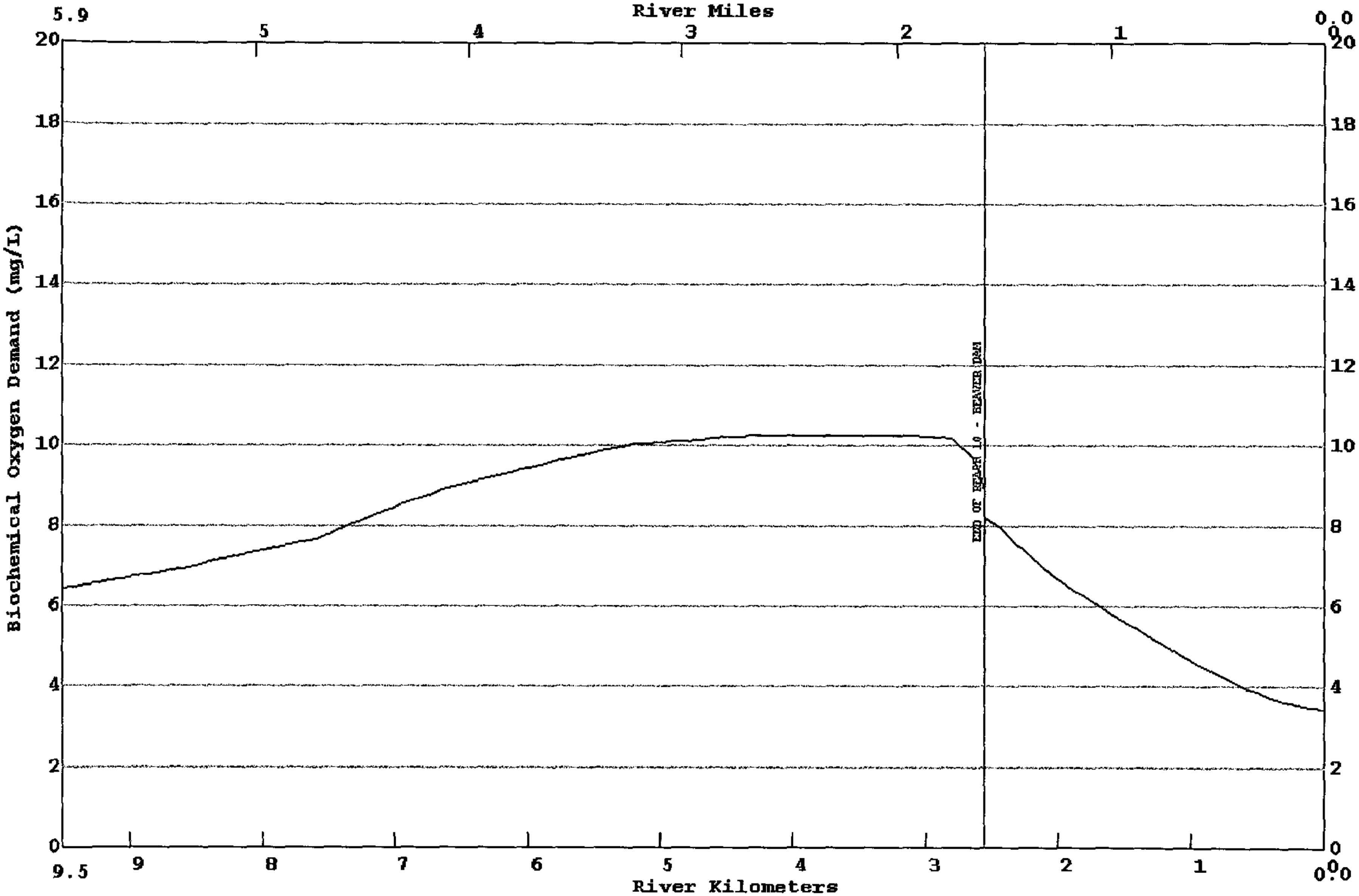
LA-QUAL Version 4.10 Run at 01:03 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR min= 0.00 max= 488.11
Marsh Bayou: Welcome Rd.-Calcasieu R.



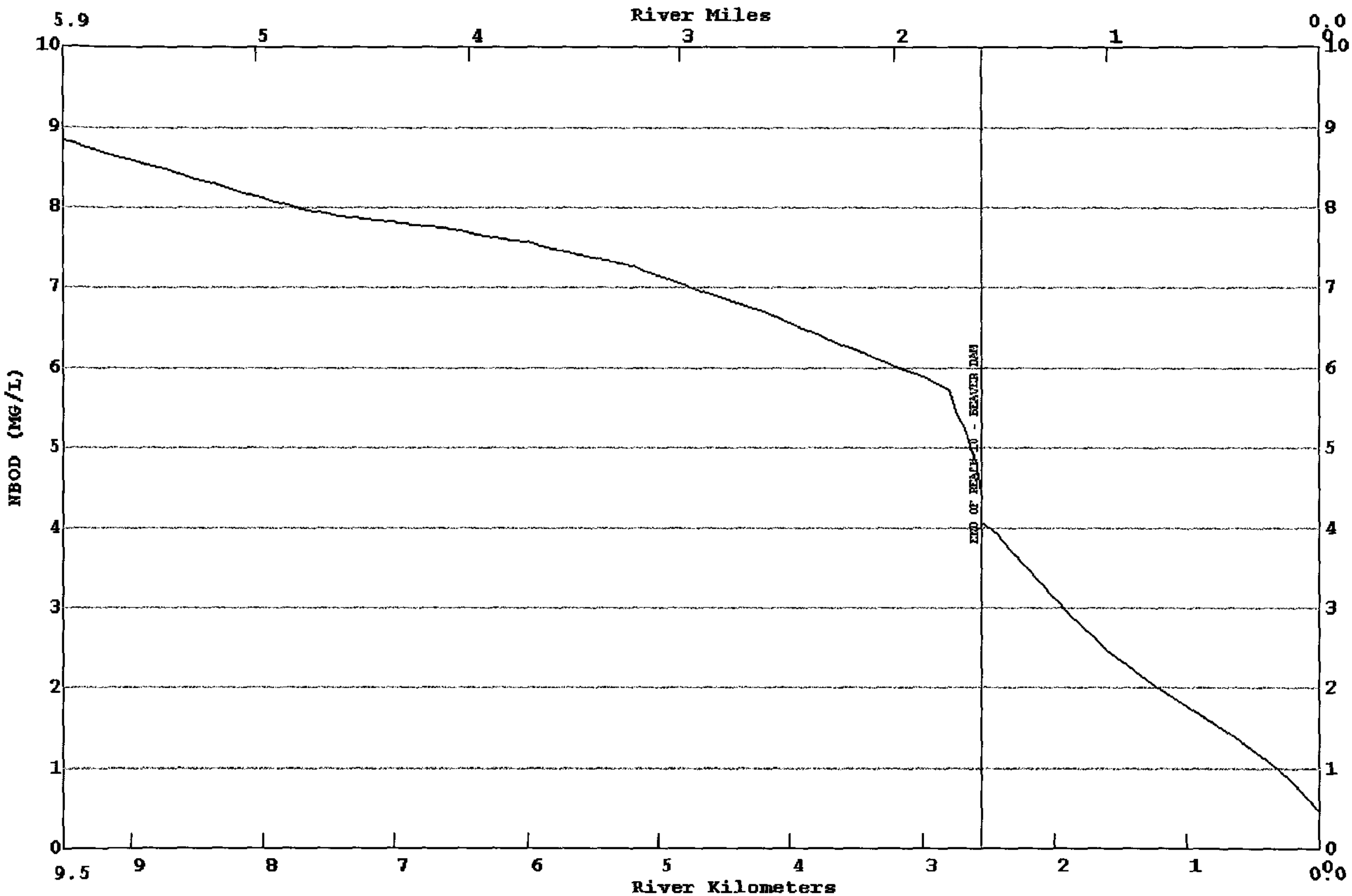
LA-QUAL Version 4.10 Run at 01:03 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR   min= 5.87   max= 10.02
Marsh Bayou: Welcome Rd.-Calcasieu R.



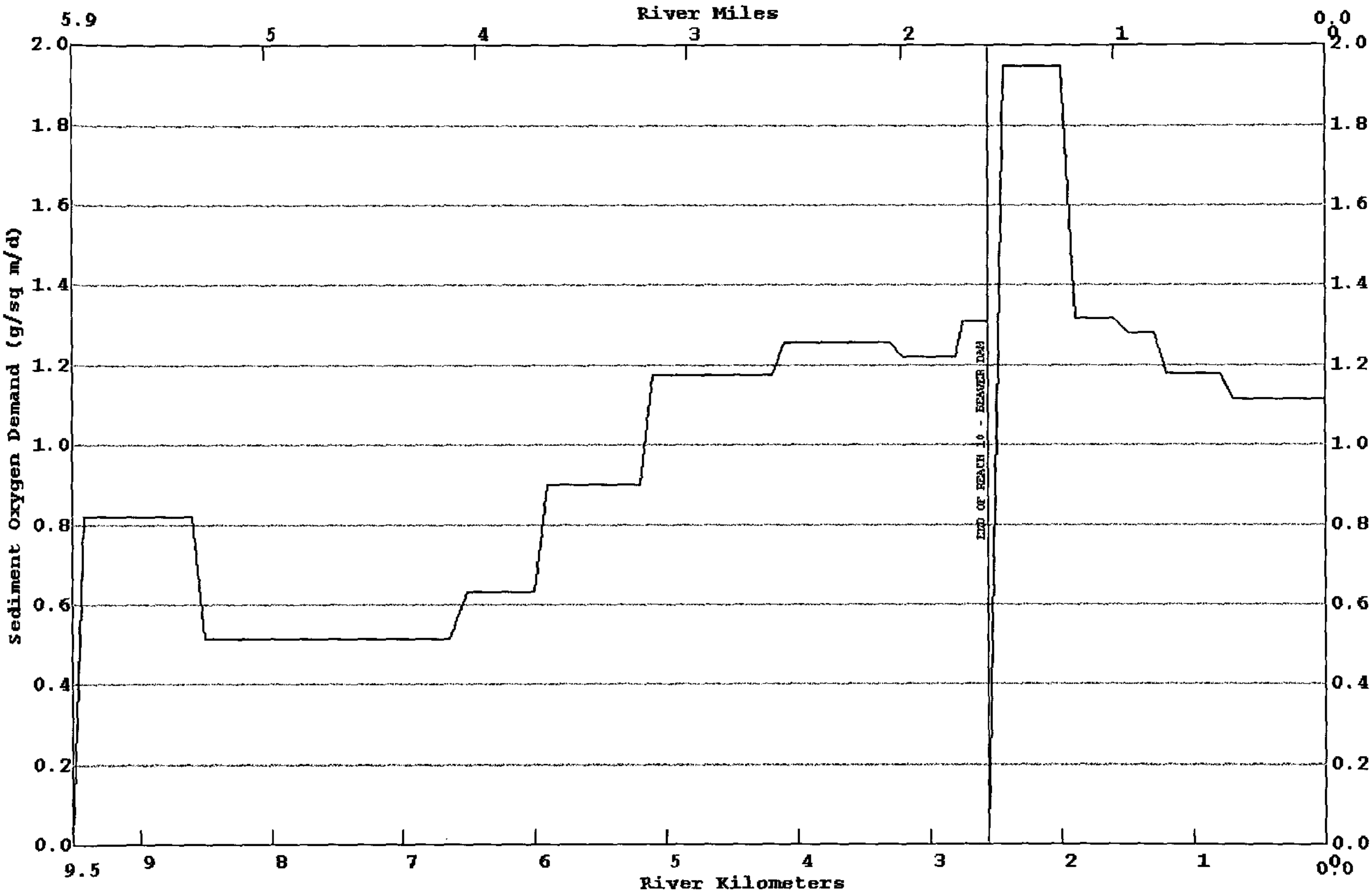
LA-QUAL Version 4.10 Run at 01:03 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR   min= 3.43   max= 10.27
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 01:03 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR   min= 0.47   max= 8.84
Marsh Bayou: Welcome Rd.-Calcasieu R.



LA-QUAL Version 4.10 Run at 01:03 on 03/31/2001 File D:\MODELED_WATERBODIES\MARSH\MODELS\LAQUAL\PROJECTIONS\MOS not ap
02/21/01;WIN PROJ.;70% RED. MAN-MADE NNPNT LOAD; W.C. BERGER, JR   min= 0.00   max= 1.95
Marsh Bayou: Welcome Rd.-Calcasieu R.



Marsh Bayou Winter Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 9, Advective Hydraulic Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Width "a"	Unitless	4.450	Determined by Best Professional Judgement (BPJ) and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	4.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.400	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
2	Marsh Bayou, RKM 8.6-UT LDB	Width "a"	Unitless	4.450	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	2.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.550	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
3	Marsh Bayou, UT (LDB) to Site 4	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Width "a"	Unitless	5.000	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	7.300	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0010	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	9.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.650	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
6	Marsh Bayou, RKM 5.2-UT LDB	Width "a"	Unitless	5.400	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	11.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.150	Determined by BPJ and hydrologic calibration

		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.600	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
7	Marsh Bayou, UT (LDB)-Site 3	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.00020	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
8	Marsh Bayou, Site 3-Little Marsh Bayou	Width "a"	Unitless	2.700	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.360	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	13.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.000	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.560	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.200	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.760	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
10	Marsh Bayou, Beaver Dam	Width "a"	Unitless	32.790	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.050	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.100	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.200	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.000	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.3047	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
11	Marsh Bayou, Beaver Dam-RKM 2.0	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	23.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.700	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
12	Marsh Bayou, RKM 2.0-UT LDB	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.800	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps

		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	24.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.930	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.000	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.940	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Width "a"	Unitless	16.500	Determined by BPJ and hydrologic calibration
		Width "b"	Unitless	0.500	Determined by BPJ and hydrologic calibration
		Width "c"	Unitless	25.500	Determined by BPJ and hydrologic calibration
		Depth "d"	Unitless	1.400	Determined by BPJ and hydrologic calibration
		Depth "e"	Unitless	0.480	Determined by BPJ and hydrologic calibration
		Depth "f"	Unitless	0.950	Determined by BPJ and hydrologic calibration
		Slope	Unitless	0.0002	Estimated value based upon USGS topography maps
		Manning's - N	Unitless	0.040	Envr. Engr. Examination Guide and Handbook, Table 5-4, p. 113

Marsh Bayou Winter Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 10, Dispersive Hydraulic Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
2	Marsh Bayou, RKM 8.6-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
3	Marsh Bayou, UT (LDB) to Site 4	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
6	Marsh Bayou, RKM 5.2-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
7	Marsh Bayou, UT (LDB)-Site 3	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

8	Marsh Bayou, Site 3-Little Marsh Bayou	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.00	Estimated value based on the observation that the waterbody is not tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.05	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
10	Marsh Bayou, Beaver Dam	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.50	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
11	Marsh Bayou, Beaver Dam-RKM 2.0	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
12	Marsh Bayou, RKM 2.0-UT LDB	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.90	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	0.95	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Tidal Range	Fraction		
		Dispersion "A"	Unitless	1.00	Estimated value based on the observation that the waterbody is tidally influenced in this reach
		Dispersion "B"	Unitless		
		Dispersion "C"	Unitless		
		Dispersion "D"	Unitless		

Marsh Bayou Winter Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 11, INITIAL CONDITIONS

Reach #	NAME	Initial Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
2	Marsh Bayou, RKM 8.6-UT LDB	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
3	Marsh Bayou, UT (LDB) to Site 4	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839,
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		

5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
6	Marsh Bayou, RKM 5.2-UT LDB	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
7	Marsh Bayou, UT (LDB)-Site 3	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
8	Marsh Bayou, Site 3-Little Marsh Bayou	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		

		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
10	Marsh Bayou, Beaver Dam	Temperature	°Celcius	15.30	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
11	Marsh Bayou, Beaver Dam-RKM 2.0	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
12	Marsh Bayou, RKM 2.0-UT LDB	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		

		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt		
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		NH_4-N	mg/l		
		NO_{2+3} - N	mg/l		
		Phosphorus	mg/l		
		Chlorophyll a	ug/l	11.90	Chlorophyll a value for Site 4
		Macrophytes	g/m^3 or mg/ft^3		

Marsh Bayou Winter Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 12, Reaeration, Sediment Oxygen Demand and BOD Coeff.

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.10	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
2	Marsh Bayou, RKM 8.6-UT LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_{+C139} "C"	Unitless		
		Background SOD	g/m^2-day	0.69	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
3	Marsh Bayou, UT (LDB) to Site 4	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.69	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		

		Background SOD	g/m^2-day	0.85	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.10	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.21	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
6	Marsh Bayou, RKM 5.2-UT LDB	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.58	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.100	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.06	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
7	Marsh Bayou, UT (LDB)-Site 3	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.69	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		

		Background SOD	g/m^2-day	1.64	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.76	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.13	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.07	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
10	Marsh Bayou, Beaver Dam	K2 option	Unitless	1.00	$K_2 = a$
		K2 "A"	Unitless	500.00	Manually input reaeration value used for Reach 10 used to simulate the beaver dam. The value was determined by calibration.
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Aerobic BOD decay	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		BOD Settling rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	K2 option	Unitless	15.00	Louisiana Equation (1995)
		K2 "A"	Unitless		
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	2.10	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
12	Marsh Bayou, RKM 2.0-UT LDB	K_2 option	Unitless	15.00	Louisiana Equation (1995)
		K_2 "A"	Unitless		
		K_2 "B"	Unitless		

		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.42	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	K2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.38	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	K2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K2 "B"	Unitless		
		K2 "C"	Unitless		
		Background SOD	g/m^2-day	1.27	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		
		Anaerobic BOD decay	1/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	K_2 option	Unitless	20.00	K_2 = a/D, where D = depth
		K_2 "A"	Unitless	2.30	Based upon the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		K_2 "B"	Unitless		
		K_2 "C"	Unitless		
		Background SOD	g/m^2-day	1.20	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Aerobic BOD decay	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $CBOD_U$ decay rates, and calibration
		BOD Settling rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		BOD conv. to SOD	Fraction		

		Anaerobic BOD decay	1/day		

Marsh Bayou Winter Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 15, Coliform and Nonconservative Coefficients

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
2	Marsh Bayou, RKM 8.6-UT LDB	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.15	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
3	Marsh Bayou, UT (LDB) to Site 4	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
6	Marsh Bayou, RKM 5.2-UT LDB	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.03	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
7	Marsh Bayou, UT (LDB)-Site 3	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
8	Marsh Bayou, Site 3-Little Marsh Bayou	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	Coliform decay rate	1/day		

		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.035	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
10	Marsh Bayou, Beaver Dam	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Settled nonconservative material conversion to sediment oxygen demand			
11	Marsh Bayou, Beaver Dam-RKM 2.0	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

12	Marsh Bayou, RKM 2.0-UT LDB	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.1	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)

		Settled nonconservative material conversion to sediment oxygen demand			
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	Coliform decay rate	1/day		
		Nonconservative material decay rate	1/day	0.08	Based upon Best Professional Judgement (BPJ), laboratory $NBOD_U$ decay rates, and calibration
		Nonconservative material settling rate	m/day, ft/day, or 1/day	0.04	Based upon Best Professional Judgement (BPJ), calibration, and the Louisiana Total Maximum Daily Load Technical Procedures Manual, Revision 6, (9/8/00)
		Settled nonconservative material conversion to sediment oxygen demand			

Marsh Bayou Winter Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 19, Nonpoint Source Data

Reach #	NAME	Parameter	Units	Value	Source/Justification
1	Marsh Bayou, E. Welcome Rd.-RKM 8.6	BOD	kg/day	7.88	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	3.47	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
2	Marsh Bayou, RKM 8.6-UT LDB	BOD	kg/day	11.96	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	5.61	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
3	Marsh Bayou, UT (LDB) to Site 4	BOD	kg/day	18.40	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	5.17	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
4	Marsh Bayou, RKM 6.65-E. of Topsy Rd.	BOD	kg/day	11.50	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	3.16	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
5	Marsh Bayou, E. of Topsy Rd.-RKM 5.2	BOD	kg/day	15.40	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	3.85	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		

6	Marsh Bayou, RKM 5.2-UT LDB	BOD	kg/day	18.61	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	4.00	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
7	Marsh Bayou, UT (LDB)-Site 3	BOD	kg/day	18.25	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	3.21	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
8	Marsh Bayou, Site 3-Little Marsh Bayou	BOD	kg/day	9.68	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	1.61	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
9	Marsh Bayou, Little Marsh Bayou-Beaver Dam	BOD	kg/day	13.16	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.07	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
10	Marsh Bayou, Beaver Dam	BOD	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.00	Value was set to "0.0". This reach was input to simulate the reaeration caused by the beaver dam. The reach overlapped Reach 11, therefore any loading in Reach 10 is already being simulated in Reach 11
		Dissolved O_2	kg/day		
11	Marsh Bayou, Beaver Dam-RKM 2.0	BOD	kg/day	13.31	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		

		Nonconservative matl.	kg/day	0.74	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
12	Marsh Bayou, RKM 2.0-UT LDB	BOD	kg/day	13.15	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.66	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
13	Marsh Bayou, UT LDB-Natural Diversion to the Calcasieu River	BOD	kg/day	11.12	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.64	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
14	Marsh Bayou, Natural Diversion to the Calcasieu River-RKM 0.8	BOD	kg/day	13.59	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.78	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		
15	Marsh Bayou, RKM 0.8-Lower outlet to the Calcasieu River	BOD	kg/day	16.03	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Org.-N	kg/day		
		Coliform	#/day		
		Nonconservative matl.	kg/day	0.92	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the benthic loading
		Dissolved O_2	kg/day		

Marsh Bayou Winter Water Quality Model Input Description

70% Reduction of the Estimated Man-Made Loads

DATA TYPE 20, Headwater Data for Flow, Temperature, Salinity, and Conservatives					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input	#	1	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater name		Marsh Bayou @ Welcome Road	Marsh Bayou Survey at Welcome Road (Site 5)
		Headwater flow	cms	0.071	Winter 7Q10 value for Marsh Bayou estimated by multiplying the average of the winter 7Q10/drainage area ratios for Bundick Crk. near Dry Crk. and Bundick Crk. near DeRidder by the drainage area of Marsh Bayou @ Welcome Rd.
		Temperature	°Celcius	15.3	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0839, Marsh Bayou Southeast of Topsy Rd.
		Salinity	ppt		
		Conservative Matl. I	mg/l	20.4	Marsh Bayou Survey at Welcome Road (Site 5)
		Conservative Matl. II	mg/l	5.4	Marsh Bayou Survey at Welcome Road (Site 5)

Marsh Bayou Winter Water Quality Model Input Description 70% Reduction of the Estimated Man-Made Loads					
DATA TYPE 21, Headwater Data for DO, BOD, and Nitrogen					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Dissolved O_2	mg/l	10.02	90 percent of the disssolved oxygen saturation concentration based upon the winter 90[th] percentile temperature value for the LA DEQ Water Quality Assessment Site 0839
		BOD	mg/l	6.41	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the load
		Org.- N	mg/l		
		NH_3-N	mg/l		
		NO_{2+3}-N	mg/l		

Marsh Bayou Winter Water Quality Model Input Description 70% Reduction of the Estimated Man-Made Loads					
DATA TYPE 22, Headwater Data for Phosphorus, Chlorophyll, Coliform, and Nonconservatives					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
1	Marsh Bayou @ Welcome Road	Element # of input		1	Marsh Bayou Survey at Welcome Road (Site 5)
		Phosphorus	mg/L		
		Chlorophyll a	ug/L	11.9	Marsh Bayou Survey at Welcome Road (Site 5)
		Coliform	#/100 mL		
		Nonconservative Material	mg/l	8.84	Reduced value based upon the calibration value and a 70 percent reduction of the estimated man-made portion of the load

Marsh Bayou Winter Water Quality Model Input Description 70% Reduction of the Estimated Man-Made Loads					
DATA TYPE 27, Lower Boundary Conditions					
Reach #	**NAME**	**Parameter**	**Units**	**Value**	**Source/Justification**
	Calcasieu River	Temperature	°Celcius	18.80	Winter 90th percentile temperature value based upon the data collected at the LA DEQ Water Quality Assessment Site 0093, Calcasieu River at Moss Bluff
		Salinity	ppt	0.00	
		Conservative Matl. I	mg/l	6.40	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Conservative Matl. II	mg/l	2.80	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Dissolved O_2	mg/l	9.31	90 percent of the disssolved oxygen saturation concentration based upon the winter 90th percentile temperature value for the LA DEQ Water Quality Assessment Site 0093
		BOD	mg/l	3.42	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Org.- N	mg/l	0.22	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		NH_3-N	mg/l	0.00	
		NO_{2+3}-N	mg/l	0.03	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Phosphorus	mg/l	0.12	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Chlorophyl A	mg/l	3.93	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)
		Coliform	mg/l		
		Nonconservative Material	mg/L	0.36	Marsh Bayou Survey, Calcasieu River downstream of the confluence with Marsh Bayou (Site 1)

APPENDIX G – TMDL CALCULATIONS

Summer TMDL Summary
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)
Winter TMDL Summary
(Estimated Man-Made Load Reduced 100% & Estimated Natural Background Load Reduced by 20%)

Summer TMDL Summary
(Estimated Man-Made Load Reduced 70%)
Winter TMDL Summary
(Estimated Man-Made Load Reduced 70%)

Summer TMDL Summary:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

[redacted]

Calculation of the TMDL - Kilograms per day			
Load description	WLA (kg/day)	LA (kg/day)	MOS Load (kg/day)
Point Source loads	0		0
Headwater / Tributatary loads		43	0
Benthic loads		324	0
Incremental Loads		0	0
SUB-TOTAL	**0**	**367**	**0**
TMDL = WLA + LA + MOS		***367 kg/day***	

Calculation of the TMDL - Pounds per day			
Load description	WLA (lbs/day) (1)	LA (lbs/day) (1)	MOS Load (lbs/day) (1)
Point Source loads	0		0
Headwater / Tributatary loads		95	0
Benthic loads		714	0
Incremental Loads		0	0
SUB-TOTAL	**0**	**809**	**0**
TMDL = WLA + LA + MOS		***809 lbs/day***	

Notes:

(1) - Load(lbs/day) = Load(kg/day) x 2.205

Calculation of the TMDL - Kilograms per day			
Load description	WLA (kg/day)	LA (kg/day)	MOS Load (kg/day)
Point Source loads	0		0
Natural Nonpoint Loads		367	
Manmade Nonpoint Loads		0	0
SUB-TOTAL	**0**	**367**	**0**
TMDL = WLA + LA + MOS		***367 lbs/day***	

Calculation of the TMDL - Pounds per day			
Load description	WLA (lbs/day)	LA (lbs/day)	MOS Load (lbs/day)
Point Source loads	0		0
Natural Nonpoint Loads		809	
Manmade Nonpoint Loads		0	0
SUB-TOTAL	**0**	**809**	**0**
TMDL = WLA + LA + MOS		***809 lbs/day***	

Winter TMDL Summary:

Estimated Man-Made Load Reduced 100 % & Estimated Natural Background Load Reduced by 20%

[redacted]

Calculation of the TMDL - Kilograms per day			
Load description	WLA (kg/day)	LA (kg/day)	MOS Load (kg/day)
Point Source loads	0		0
Headwater / Tributatary loads		50	0
Benthic loads		222	0
Incremental Loads		0	0
SUB-TOTAL	**0**	**272**	**0**
TMDL = WLA + LA + MOS	***272 kg/day***		

Calculation of the TMDL - Pounds per day			
Load description	WLA (lbs/day) (1)	LA (lbs/day) (1)	MOS Load (lbs/day) (1)
Point Source loads	0		0
Headwater / Tributatary loads		110	0
Benthic loads		490	0
Incremental Loads		0	0
SUB-TOTAL	**0**	**600**	**0**
TMDL = WLA + LA + MOS	***600 lbs/day***		

Notes:

(1) - Load(lbs/day) = Load(kg/day) x 2.205

Calculation of the TMDL - Kilograms per day			
Load description	WLA (kg/day)	LA (kg/day)	MOS Load (kg/day)
Point Source loads	0		0
Natural Nonpoint Loads		272	
Manmade Nonpoint Loads		0	0
SUB-TOTAL	**0**	**272**	**0**
TMDL = WLA + LA + MOS	***272 lbs/day***		

Calculation of the TMDL - Pounds per day			
Load description	WLA (lbs/day)	LA (lbs/day)	MOS Load (lbs/day)
Point Source loads	0		0
Natural Nonpoint Loads		600	
Manmade Nonpoint Loads		0	0
SUB-TOTAL	**0**	**600**	**0**
TMDL = WLA + LA + MOS	***600 lbs/day***		

Summer TMDL Summary:

Estimated Man-Made Load Reduced 70%

[redacted]

Calculation of the TMDL - Kilograms per day			
Load description	WLA (kg/day)	LA (kg/day)	MOS Load (kg/day)
Point Source loads	0		0
Headwater / Tributatary loads		76.00	5.35
Benthic loads		536.00	33.73
Incremental Loads		0	0
SUB-TOTAL	**0**	**612**	**39**
TMDL = WLA + LA + MOS		***651 kg/day***	

Calculation of the TMDL - Pounds per day			
Load description	WLA (lbs/day) (1)	LA (lbs/day) (1)	MOS Load (lbs/day) (1)
Point Source loads	0		0
Headwater / Tributatary loads		167.58	11.80
Benthic loads		1181.88	74.37
Incremental Loads		0	0
SUB-TOTAL	**0**	**1349**	**86**
TMDL = WLA + LA + MOS		***1,435 lbs/day***	

Notes:

(1) - Load(lbs/day) = Load(kg/day) x 2.205

Calculation of the TMDL - Kilograms per day			
Load description	WLA (kg/day)	LA (kg/day)	MOS Load (kg/day)
Point Source loads	0		0
Natural Nonpoint Loads		455.47	
Manmade Nonpoint Loads		156.34	39.08
SUB-TOTAL	**0**	**612**	**39**
TMDL = WLA + LA + MOS		***651 lbs/day***	

Calculation of the TMDL - Pounds per day			
Load description	WLA (lbs/day)	LA (lbs/day)	MOS Load (lbs/day)
Point Source loads	0		0
Natural Nonpoint Loads		1004.31	
Manmade Nonpoint Loads		344.73	86.17
SUB-TOTAL	**0**	**1349**	**86**
TMDL = WLA + LA + MOS		***1,435 lbs/day***	

Winter TMDL Summary:

Estimated Man-Made Load Reduced 70%

[redacted]

Calculation of the TMDL - Kilograms per day			
Load description	WLA (kg/day)	LA (kg/day)	MOS Load (kg/day)
Point Source loads	0		0
Headwater / Tributatary loads		87	6
Benthic loads		374	25
Incremental Loads		0	0
SUB-TOTAL	0	461	31
TMDL = WLA + LA + MOS		**492 kg/day**	

Calculation of the TMDL - Pounds per day			
Load description	WLA (lbs/day) (1)	LA (lbs/day) (1)	MOS Load (lbs/day) (1)
Point Source loads	0		0
Headwater / Tributatary loads		192	13
Benthic loads		825	55
Incremental Loads		0	0
SUB-TOTAL	0.00	1017.00	68.00
TMDL = WLA + LA + MOS		**1,085 lbs/day**	

Notes:

(1) - Load(lbs/day) = Load(kg/day) x 2.205

Calculation of the TMDL - Kilograms per day			
Load description	WLA (kg/day)	LA (kg/day)	MOS Load (kg/day)
Point Source loads	0		0
Natural Nonpoint Loads		339	
Manmade Nonpoint Loads		122	31
SUB-TOTAL	0	461	31
TMDL = WLA + LA + MOS		**492 lbs/day**	

Calculation of the TMDL - Pounds per day			
Load description	WLA (lbs/day)	LA (lbs/day)	MOS Load (lbs/day)
Point Source loads	0		0
Natural Nonpoint Loads		747	
Manmade Nonpoint Loads		269	68
SUB-TOTAL	0.00	1,016.00	68.00
TMDL = WLA + LA + MOS		**1,084 lbs/day**	