

freshwater or marine aquatic life, Tables C11 and C12, respectively, are held to apply to all surface waters. Also, EPA criteria for the protection of human health apply to all surface waters.

### C2.3.3 Existing Water Quality.

C2.3.3.1 Water Use Designations. The Louisiana Department of Environmental Quality (LDEQ) has established seven water use designations for surface waters in the State. The seven designated water uses follow.

- A = Primary Contact Recreation
- B = Secondary Contact Recreation
- C = Fish and Wildlife Propagation
- D = Drinking Water Supply
- E = Oyster Propagation
- F = Agriculture
- G = Outstanding Natural Resource Waters

Specifically, LDEQ has designated the waters of the Intracoastal Waterway in the vicinity of the Bayou Sorrel Lock according to the following uses:

- Primary Contact Recreation
- Secondary Contact Recreation
- Fish and Wildlife Propagation

For the primary contact recreation designation, a waterbody should be suitable for activities such as swimming, water skiing, and skin diving. A waterbody designated for Secondary Contact Recreation should be suitable for activities such as boating, fishing, and limited contact incident to shoreline activities. The fish and wildlife propagation designation means the waterbody should also be suitable for preservation and reproduction of aquatic biota such as indigenous species of fish, invertebrates, reptiles, amphibians, and other wildlife associated with the aquatic environment.

C2.3.3.2 Water Use Support Classification. LDEQ classifies water use support based upon either an evaluation of land use, citizen complaints, etc., or upon actual monitored data. Both evaluated

and monitored assessments are available for the study area, and the results of both are discussed below.

a. Evaluated Assessment. In 1996, the LDEQ assessed the Alternate Route from Port Allen Locks to Bayou Sorrel Locks as partially supportive of its designated water uses. The Alternate Route was found to be partially supportive of primary contact recreation, secondary contact recreation and fish and wildlife propagation due to minor industrial point sources, package plants, nonirrigated crop production, animal holding/management area, urban runoff/storm sewers, petroleum activities, wastewater, septic tanks, hazardous waste, channelization, dredging, dam construction, flow regulations/modifications, removal of riparian vegetation, waste storage/storage tank leaks, highway maintenance runoff, spills and recreational activities. The evaluated assessments for the Alternate Route at Bayou Sorrel Lock were based on information other than current site-specific ambient water quality data. This information included but was not limited to direct observations and general knowledge of the water body, location of pollution sources, citizen complaints, fish kill investigations, fishing success, and short-term intensive surveys and fisheries surveys. The suspected causes for assessing the water body as partially supportive were pesticides, priority organics, nonpriority organics, nutrients, organic enrichment/low dissolved oxygen, flow alteration, habitat alterations, pathogenic indicators and oil and grease.

b. Monitored Assessment. This classification is based on nearby water quality monitoring stations for the years 1991 through 1995. LDEQ uses a computer driven use-impairment index program described below. Note that metals, toxins and organic/inorganic compound data are not utilized in the program. Support classification for a waterbody segment involves four levels of support classification as follows:

1. Parametric use support - keys on frequency of exceedances of criteria for primary and secondary parameters for each designated use of a waterbody.
2. Designated use support - determined by the least supporting parameter(s) within a designated use.
3. Station use support - determined by averaging all designated use supports at a monitoring station.

c. Waterbody use support - determined by the least supporting station(s) within a waterbody segment where there are multiple stations.

The segment of the Intracoastal Waterway Alternate Route from Port Allen Locks to Bayou Sorrel Locks was not given a monitored assessment in the 1996 Water Quality Management Plan.

C2.3.3.3 Gulf Intracoastal Waterway Alternate Route Water Quality Data. The following paragraphs will discuss the existing water quality of the Gulf Intracoastal Waterway (GIWW) Alternate Route Port Allen to Morgan City (Alternate Route). The data were obtained from 1996 US Army Corps of Engineers water and sediment sampling data and STORET data from USEPA (LDEQ Station 58010080), State of Louisiana Management Plan Water Quality Inventory 1996 and the Louisiana Department of Environmental Quality Environmental Regulatory Code 1997.

a. LDEQ Station 51010080. There is one sampling station located at the lock in the segment of the Alternate Route considered in this study. Values for the Intracoastal Waterway water quality parameters at this station for the time frame, January 1977 to December 1996, are shown in Table C13.

TABLE C13  
WATER QUALITY DATA – LDEQ Station 51010080  
INTRACOASTAL WATERWAY PORT ALLEN TO MORGAN CITY ALTERNATE ROUTE  
AT BAYOU SORREL LOCK  
PERIOD OF RECORD: JANUARY 1977 THROUGH DECEMBER 1996

DATE	END DATE	PARAMETER	MEDIUM	RMK	NUMBER	MEAN	VARIANCE	STAN DEV	MAXIMUM	MINIMUM	BEG
00010	96/12/09	WATER TEMP	CENT		214	20.17800	52.50900	7.246300	32.0	3.0	
00011	96/12/09	WATER TEMP	FAHN		214	68.31900	170.3100	13.05000	89.6	37.4	
00070	96/12/09	TURB	JKSN		22	61.81800	696.6300	26.39400	120.0	27.0	
00076	78/11/13	TURB	TRBIDMTR		76	50.85300	1083.000	32.90900	170.0	5.0	
00077	85/12/10	TRANSP	SECCHI		185	8.369200	21.08700	4.592100	35	2	
00077	96/12/09				185	8.369200	21.08700	4.592100	35	2	
00077	96/12/09			K	5	8.400000	48.30000	6.949800	16	1	
00077	96/12/09			TOT	190	8.370000	21.55200	4.642400	35	1	
00080	96/12/09	COLOR	PT-CO		222	38.85100	452.1800	21.26500	150	10	
00095	96/12/09	CNDUCTVY	AT 25C		215	353.1600	23220.00	152.3800	1260	125	
00300	96/12/09	DO			212	5.812000	4.143000	2.035400	12.2	.6	
00301	96/12/09	DO	SATUR		69	60.02000	288.1500	16.97500	101.0	14.6	
00301	96/12/09				69	60.02000	288.1500	16.97500	101.0	14.6	
00301	96/12/09			C	142	63.55600	273.6600	16.54300	98.0	6.0	
00301	96/12/09			TOT	211	62.39900	279.8100	16.72800	101.0	6.0	
00340	96/12/09	COD	HI LEVEL		116	31.17400	215.9900	14.69700	87	0	
00340	96/12/09				116	31.17400	215.9900	14.69700	87	0	
00340	96/12/09			K	10	15.00000	.0000000	.0000000	15	15	
00340	96/12/09			TOT	126	29.89100	217.9800	14.76400	87	0	
00400	90/12/11	PH			215	7.354900	.1431800	.3783900	8.99	6.30	
00400	90/12/11		SU		215	7.354900	.1431800	.3783900	8.99	6.30	
00403	96/12/09	PH	LAB		65	7.617800	.2683500	.5180300	8.4	6.0	
00410	85/06/11	T ALK	CACO3		190	102.5800	592.3600	24.33900	215	7	
00500	96/12/09	RESIDUE	TOTAL		145	322.9000	6743.400	82.11800	710	121	
00515	90/12/11	RESIDUE	DISS-105 C		205	239.5300	4176.600	64.62600	434	50	
00530	96/12/09	RESIDUE	TOT NFLT		205	71.44400	2196.500	46.86700	276	2	
00625	96/12/09	TOT KJEL	N		200	1.080200	.9776200	.9887500	13.960	.270	
00625	96/12/09				200	1.080200	.9776200	.9887500	13.960	.270	
00625	96/12/09			K	1	2.000000			2.000	2.000	
00625	96/12/09			TOT	201	1.084800	.9769400	.9884000	13.960	.270	
00630	96/12/09	NO2&NO3	N-TOTAL		211	.7885300	.2479400	.4979300	2.32	.03	
00665	96/12/09	PHOS-TOT			201	.2507400	.0151930	.1232600	1.070	.030	
00680	96/12/09	T ORG C	C		191	7.273800	7.790600	2.791200	26.2	1.8	
00900	96/12/09	TOT HARD	CACO3		192	128.4700	1093.500	33.06800	210	16	
00940	96/12/09	CHLORIDE	TOTAL		209	27.06600	816.1400	28.56800	376	5	
00945	96/12/09	SULFATE	SO4-TOT		181	28.89100	263.4200	16.23000	89	0	
01000	96/12/09	ARSENIC	AS,DISS		57	2.756100	1.227100	1.107800	5	.9	
01000	96/12/09				57	2.756100	1.227100	1.107800	5	.9	
01000	96/12/09			K	4	2.400000	2.673300	1.635000	4	.7	
01000	96/12/09			TOT	61	2.732800	1.286900	1.134400	5	.7	
01002	96/12/09	ARSENIC	AS,TOT		88	6.063600	35.38700	5.948700	31	.8	
01025	90/11/14	CADMIUM	CD,DISS		48	.2208300	.0612590	.2475100	2	.1	
01025	96/12/09				48	.2208300	.0612590	.2475100	2	.1	
01025	96/12/09			K	13	.1000000	.0000000	.0000000	.1	.1	
01025	96/12/09			TOT	61	.1950800	.0504750	.2246700	2	.1	
01027	96/12/09	CADMIUM	CD,TOT		75	.9133300	1.104400	1.050900	6	.1	
01027	96/12/09				75	.9133300	1.104400	1.050900	6	.1	

DATE	END DATE	PARAMETER	MEDIUM	RMK	NUMBER	MEAN	VARIANCE	STAN DEV	MAXIMUM	MINIMUM	BEG
83/08/09	89/05/09	01027 CADMIUM CD,TOT	UG/L WATER	K	20	.1000000	.0000000	.0000000	.1	.1	
78/03/07	90/11/14	01027 CADMIUM CD,TOT	UG/L WATER	TOT	95	.7421000	.9805500	.9902300	6	.1	
91/06/11	96/12/09	01030 CHROMIUM CR,DISS	UG/L WATER	K	38	.5552600	.2365900	.4864100	3	.2	
91/03/12	96/11/19			TOT	23	.3304400	.0431230	.2076600	1	.2	
91/03/12	96/12/09	01034 CHROMIUM CR,TOT	UG/L WATER	K	61	.4704900	.1737800	.4168700	3	.2	
78/03/07	90/11/14	01040 COPPER CU,DISS	UG/L WATER	TOT	92	9.452100	42.80800	6.542800	33	.2	
87/11/17	90/07/10			K	2	.6500000	.6050000	.7778200	1	.1	
78/03/07	90/11/14	01040 COPPER CU,DISS	UG/L WATER	TOT	94	9.264800	43.52400	6.597300	33	.1	
91/03/12	96/12/09	01042 COPPER CU,TOT	UG/L WATER	K	60	4.340000	13.34800	3.653500	27	1	
96/05/13	96/05/13			TOT	1	.7000000			.7	.7	
91/03/12	96/12/09	01042 COPPER CU,TOT	UG/L WATER	K	61	4.280300	13.34300	3.652800	27	.7	
78/03/07	90/11/14	01049 LEAD PB,DISS	UG/L WATER	TOT	98	62.79900	8867.900	94.16900	409	.4	
87/11/17	87/11/17			K	1	.1000000			.1	.1	
78/03/07	90/11/14	01049 LEAD PB,DISS	UG/L WATER	TOT	99	62.16600	8817.100	93.89900	409	.1	
91/03/12	96/11/19	01051 LEAD PB,TOT	UG/L WATER	K	43	1.602300	3.001200	1.732400	8	.3	
92/02/11	96/12/09			TOT	18	.4333300	.0435300	.2086400	.7	.2	
91/03/12	96/12/09	01051 LEAD PB,TOT	UG/L WATER	K	61	1.257400	2.402200	1.549900	8	.2	
79/02/13	90/11/14	01065 NICKEL NI,DISS	UG/L WATER	TOT	90	13.10900	719.4600	26.82300	189	.4	
85/08/13	85/08/13			K	1	.1000000			.1	.1	
79/02/13	90/11/14	01065 NICKEL NI,DISS	UG/L WATER	TOT	91	12.96600	713.3300	26.70800	189	.1	
92/01/06	96/12/09			K	55	3.081800	3.798500	1.949000	12	.4	
92/04/07	92/04/07			TOT	1	1.500000			2	2	
92/01/06	96/12/09	31508 TOT COLI MPN COMP	TUBECODE WATER	K	56	3.053600	3.774200	1.942700	12	.4	
78/05/08	79/04/16	31615 FEC COLI MPNECMED	/100ML WATER	TOT	12	2004.200	6275700	2505.100	9200	80	
78/05/08	91/10/15			K	133	737.3700	2670400	1634.100	16000	20	
80/05/12	80/05/12			TOT	1	20.00000			20	20	
78/05/08	91/10/15	71890 MERCURY HG,DISS	UG/L WATER	K	134	732.0200	2654200	1629.200	16000	20	
93/10/11	96/05/13			TOT	4	.0700000	.0004666	.0216030	.1	.05	
91/03/12	96/12/09	71900 MERCURY HG,TOTAL	UG/L WATER	K	57	.1096500	.0045036	.0671090	.2	.05	
91/03/12	96/12/09			TOT	61	.1070500	.0043246	.0657620	.2	.05	
84/05/15	86/04/14			K	11	.4909100	.0729090	.2700200	1.1	.2	
81/04/14	90/11/14			TOT	43	.1953500	.0004540	.0213090	.2	.1	
81/04/14	90/11/14	74041 WQF	SAMPLE UPDATED WATER	K	54	.2555600	.0285540	.1689800	1.1	.1	
77/01/10	96/12/09	82079 TURBIDTY	LAB NTU WATER	TOT	248	900140.0	7604E+05	27577.00	970508	880728	
86/01/14	96/12/09			K	120	43.26700	650.7400	25.51000	136.0	7.4	

DATE	END DATE	PARAMETER	MEDIUM	RMK	NUMBER	MEAN	VARIANCE	STAN DEV	MAXIMUM	MINIMUM	BEG
00010		WATER TEMP	CENT WATER		31	21.53800	50.07800	7.076600	30.5	8.1	
91/03/11	96/11/18	00011 WATER TEMP	FAHN WATER	\$	31	70.76900	162.2400	12.73800	86.9	46.7	
91/03/11	96/11/18	00077 TRANSP SECCHI	INCHES WATER		4	7.875000	1.729200	1.315000	9	6	
91/03/11	96/11/18	00080 COLOR FT-CO	UNITS WATER		31	47.74200	398.0700	19.95200	100	10	
91/03/11	96/11/18	00095 CONDUCTVY AT 25C	MICROMHO WATER		30	304.8000	10083.00	100.4200	581	104	
91/03/11	96/11/18	00300 DO	MG/L WATER		31	5.575500	3.957700	1.989400	9.2	1.8	
91/03/11	96/11/18	00301 DO	SATUR PERCENT WATER	\$	31	60.53600	301.6000	17.36700	91.5	21.2	
91/03/11	96/11/18	00400 PH	SU WATER		29	7.192100	.0997660	.3158600	7.80	6.50	
91/03/11	96/11/18	00410 T ALK CACO3	MG/L WATER		31	93.64200	363.1300	19.05600	131	41	
91/03/11	96/11/18	00480 SALINITY	PPTH WATER		1	.2000000			.2	.2	
96/11/18	96/11/18	00515 RESIDUE DISS-105 C	MG/L WATER		31	227.9000	6098.900	78.09500	544	122	
91/03/11	96/11/18	00530 RESIDUE TOT NFLT	MG/L WATER		31	31.83900	374.9400	19.36300	80	2	
91/03/11	96/11/18	00625 TOT KJEL N	MG/L WATER		30	.9746600	.4024100	.6343600	3.890	.420	
91/03/11	96/11/18			K	1	.0200000			.020	.020	
93/05/10	93/05/10			TOT	31	.9438700	.4183900	.6468300	3.890	.020	
91/03/11	96/11/18	00630 NO2&NO3 N-TOTAL	MG/L WATER		31	.4880700	.0720760	.2684700	1.34	.12	
91/03/11	96/11/18	00665 PHOS-TOT	MG/L P WATER		31	.2006500	.0102260	.1011300	.540	.020	
91/03/11	96/11/18	00680 T ORG C	C MG/L WATER		31	8.884200	5.497100	2.344600	13.2	4.2	
91/03/11	96/11/18	00900 TOT HARD CACO3	MG/L WATER		31	114.7200	876.9800	29.61400	173	44	
91/03/11	96/11/18	00940 CHLORIDE TOTAL	MG/L WATER		31	27.71600	1316.000	36.27700	203	3	
91/03/11	96/11/18	00945 SULFATE SO4-TOT	MG/L WATER		31	23.27400	156.1100	12.49400	55	4	
91/03/11	96/11/18	01000 ARSENIC AS, DISS	UG/L WATER		28	2.775000	1.608600	1.268300	6	.9	
91/03/11	96/11/18			K	2	2.600000	2.880000	1.697100	4	1	
94/11/14	95/01/09			TOT	30	2.763300	1.599000	1.264500	6	.9	
91/03/11	96/11/18	01025 CADMIUM CD, DISS	UG/L WATER		17	.2117700	.0498530	.2232800	1	.1	
91/03/11	96/09/09			K	13	.1000000	.0000000	.0000000	.1	.1	
91/03/11	96/11/18	01030 CHROMIUM CR, DISS	UG/L WATER		30	.1633300	.0306780	.1751500	1	.1	
91/03/11	96/11/18			K	10	.3200000	.0062224	.0788820	.4	.2	
92/01/06	96/09/09			TOT	30	.4566700	.1473700	.3838900	2	.2	
91/03/11	96/11/18	01040 COPPER CU, DISS	UG/L WATER		28	2.160700	.6832300	.8265800	5	1	
91/03/11	96/11/18			K	2	.4000000	.0200000	.1414200	.5	.3	
93/07/12	96/07/08			TOT	30	2.043300	.8363500	.9145200	5	.3	
91/03/11	96/11/18	01049 LEAD PB, DISS	UG/L WATER		8	.9500000	1.265700	1.125000	4	.2	
91/03/11	96/11/18			K	22	.4181800	.0396540	.1991300	.7	.2	
91/03/11	96/11/18	01065 NICKEL NI, DISS	UG/L WATER		30	.5600000	.3914500	.6256600	4	.2	
92/01/06	96/11/18			K	2	1.200000	.1800000	.4242700	2	.9	
92/05/11	96/09/09			TOT	27	2.122200	1.396400	1.181700	6	.7	
92/01/06	96/11/18										

K - Actual value is known to be less than the value reported  
 \$ - Calculated by retrieval software  
 C - Value calculated

As footnoted in Table C13, many parameter values were reported as "actual value known to be less than value shown" because of detection limits. Also, because of the sampling interval stated in some of the criteria and the detection limits, exceedances can only be regarded as "possible exceedances." The applicable criteria are the EPA freshwater acute aquatic life criteria due to the short term nature of the project. For metals only, the EPA recommends comparing the dissolved fraction, not the total concentration to the criteria. The recorded mean concentrations of heavy metals were below the maximum chronic and acute LDEQ values. The mean concentration of fecal coliform exceeded the maximum LDEQ level of 200 col/100 mL. This value could be a result of urban runoff, septic tanks, and animal management areas.

Table C14 shows a comparison of water quality data for several parameters with established state and federal criteria. Minimum DO levels were extremely low, however, with values as low as 0.6 mg/L. Such levels could result from a combination of high BOD industrial wastes, stormwater discharge from the stormwater pumping stations, and local domestic wastes all being discharged into the Alternate Route. The mean concentration of fecal coliform exceeded the maximum LDEQ criteria for reasons as stated above.

TABLE C14

WATER QUALITY DATA – LDEQ Station 51010080  
Comparison with State and Federal Criteria

	CRITERIA		RECORDED DATA		
	STATE <sup>2</sup>	EPA <sup>3</sup>	MEAN	MAXIMUM	MINIMUM
Temperature (°C)	32	--	20.1	32.0	3.0
Dissolved Oxygen (mg/L)	5.0 (min)	5.0 (min)	5.8	12.2	0.6
BOD <sub>5</sub> (mg/L)	--	--			
pH	6.0 - 8.5	6.5 - 9.0	7.35	8.99	6.30
NO <sub>3</sub> - Nitrogen (mg/L)	--	--	0.79	2.32	0.03
Phosphorous - Total (ug/L)	--	50	0.25	1.07	0.03
Total Coliform per 100 mL	--	--	2004	9200	80
Fecal Coliform per 100 mL	200 <sup>4</sup>	200 <sup>4</sup>	737	16000	20
Total Dissolved Solids (mg/L)	--	--			
Chlorides (mg/L)	--	--	27.07	376	5
Sulfates (mg/L)	--	--	28.9	89	0

- 1 LDEQ Station 58010080, 1977 - 1996
- 2 LDEQ 1996 numerical criteria for Water
- 3 EPA Quality Criteria for Water, 1996
- 4 Monthly log mean

b. 1996 US Army Corps of Engineers Water Quality Data. Four sediment and two water samples were collected and analyzed in June of 1996. The locations of these samples are indicated in Figure C1. The results of this analysis are presented in Tables C15 through C18 below. All constituents that had possible exceedances of the LDEQ criteria are printed in bold letters and are described below.

1. At site 2BS96, the mercury concentration (0.210 ug/L) exceeded the LDEQ chronic criteria (0.1210 ug/L). The concentration of PPDDD (<0.20 ug/L) possibly exceeded the acute and chronic criteria ( 0.030 ug/L and 0.006 ug/L respectively). The concentration of PPDDT (< 0.20 ug/L) possibly exceeded the LDEQ chronic value (0.0010 ug/L). The concentration of dieldrin (< 0.20 ug/L) possibly exceeded the LDEQ chronic value (0.0019 ug/L). The concentration of endrin (< 0.20 ug/L) possibly exceeded the LDEQ acute and chronic criteria (0.18 ug/L and 0.0023 ug/L, respectively). The concentration of chlordane (< 0.050 ug/L) possibly exceeded the LDEQ chronic value (0.0043 ug/L). The concentration of PCB's (< 0.20 ug/L) possibly exceeded the LDEQ chronic value (0.0140 ug/L). The concentration of heptachlor (0.025 ug/L) exceeded the LDEQ chronic value (0.0038 ug/L). The concentration of A and B endosulfan (<0.10 ug/L) possibly exceeded the LDEQ chronic value (0.056 ug/L). The concentration of hexachlorobutadien (<10 ug/L) possibly exceeded the LDEQ acute and chronic criteria (5.1 ug/L and 1.02 ug/L, respectively).

2. At site 3BS96, the mercury concentration (<0.20 ug/L) possibly exceeded the LDEQ chronic criteria (0.1210 ug/L). The concentration of PPDDD (<0.20 ug/L) possibly exceeded the acute and chronic criteria (0.030 ug/L and 0.006 ug/L respectively). The concentration of PPDDT (< 0.20 ug/L) possibly exceeded the LDEQ chronic value (0.0010 ug/L). The concentration of dieldrin (< 0.20 ug/L) possibly exceeded the LDEQ chronic value (0.0019 ug/L). The concentration of endrin (< 0.20 ug/L) possibly exceeded the LDEQ acute and chronic criteria (0.18 ug/L and 0.0023 ug/L, respectively). The concentration of chlordane (< 0.050 ug/L) possibly exceeded the LDEQ chronic value (0.0043 ug/L). The concentration of PCB's (< 0.20 ug/L) possibly exceeded the LDEQ chronic value (0.0140 ug/L). The concentration of heptachlor (<0.10 ug/L) possibly exceeded the LDEQ chronic value (0.0038 ug/L). The concentration of A and B endosulfan (<0.10 ug/L) possibly exceeded the LDEQ chronic value (0.056 ug/L). The concentration of hexachlorobutadien (<10 ug/L) possibly exceeded the LDEQ acute and chronic criteria (5.1 ug/L and 1.02 ug/L, respectively).

C2.3.3.4 Summary and Discussion. LDEQ water quality data on the Alternate Route indicated that while some metals, pesticides, and PCB's possibly exceeded the LDEQ criteria, most constituent levels were below the LDEQ acute and chronic criteria. The mean concentration of fecal coliform exceeded the maximum LDEQ level of 200 col/100 mL. This value could be a result of urban runoff, septic tanks and animal management areas. Minimum DO levels were below the minimum LDEQ level of 5 mg/L. Such levels could result from a combination of high BOD industrial wastes, stormwater discharge from the stormwater pumping stations and local domestic wastes all being discharged into the Alternate Route.

The 1996 US Army Corps of Engineers (USACE) water quality analysis indicated possible exceedances from the LDEQ criteria in concentrations of mercury, PPDDD, PPDDT, dieldrin, endrin, chlordane, PCB's, A and B endosulfan, and hexachlorobutadien. However, these constituents are indicated as possibly exceeding the LDEQ criteria because the concentrations are known to be less than the value reported. Levels of mercury and heptachlor exceeded the LDEQ chronic criteria in sample 2BS96.

C2.3.4 Projected Water Quality. This section sets forth the projected impacts to water quality in the study area which might be reasonably expected as a result of the construction of a new lock at Bayou Sorrel and the closure of the existing lock. The subject feasibility study includes the following alternatives:

- a. Earthen chambered with sector gates
  1. 75 feet X 1,200 feet
  2. 110 feet X 1,200 feet
  3. 56 feet X 790 feet (replacement in-kind)
  
- b. Concrete chambered with miter gates
  1. 75 feet X 1,200 feet
  2. 110 feet X 1,200 feet

The proposed plan will include the construction of an earthen cofferdam and the dewatering of the new lock site. The lock chamber, inflow channel and outflow channel will be hydraulically