

APPENDIX A

Maps of Study Area

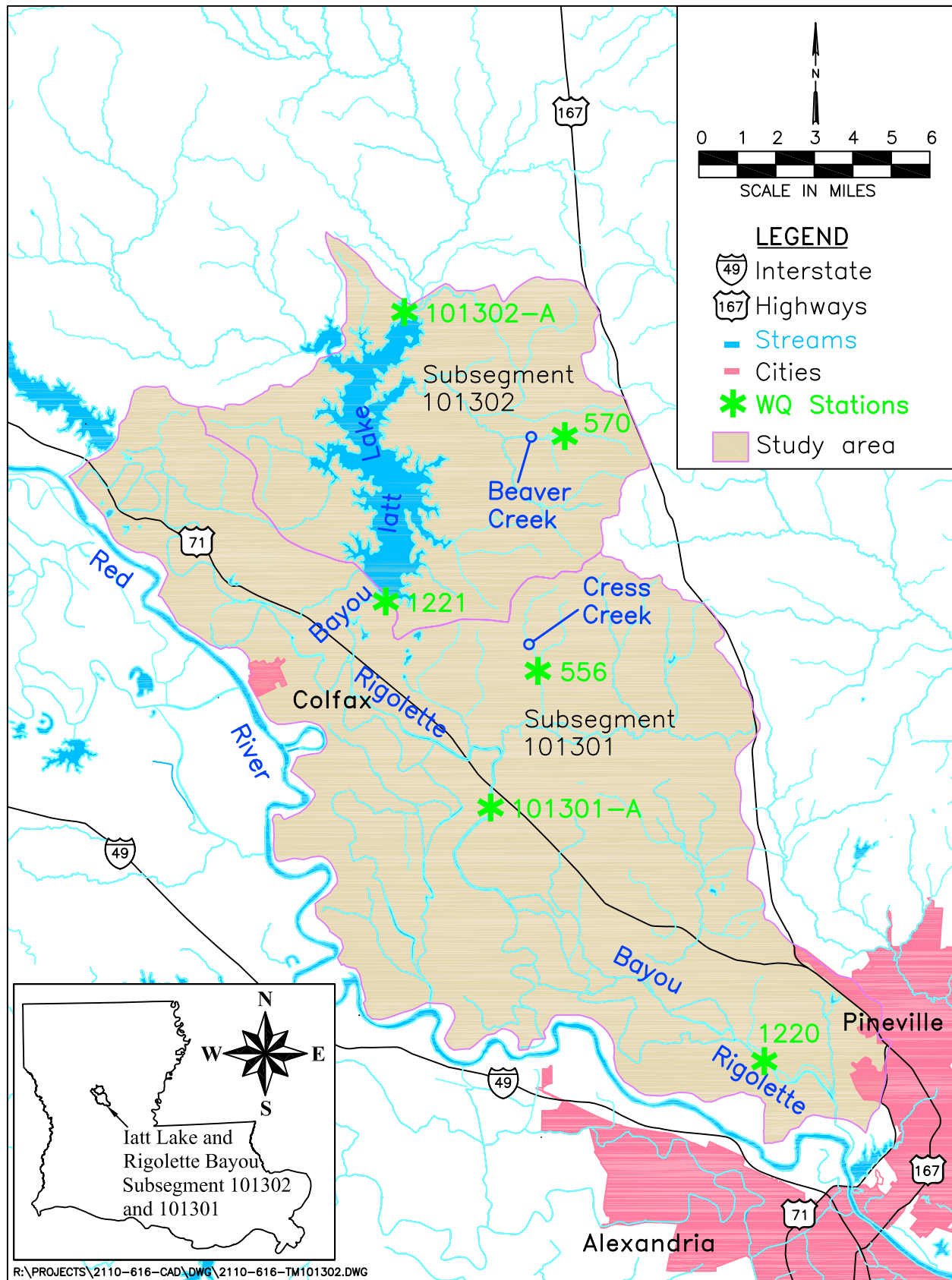


Figure A.1. Map of study area.

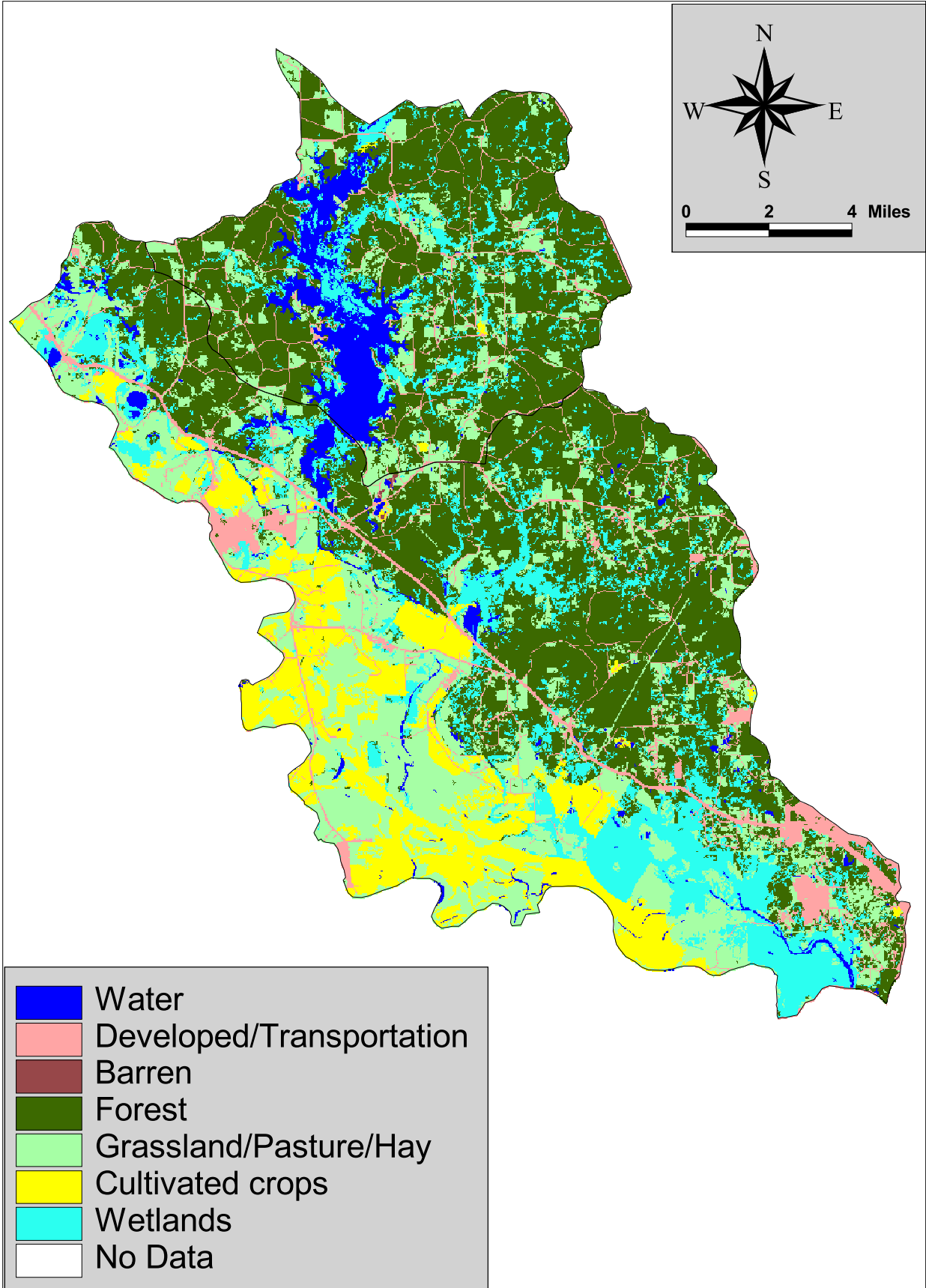


Figure A.2. Landuse in subsegments101301 and 101302.

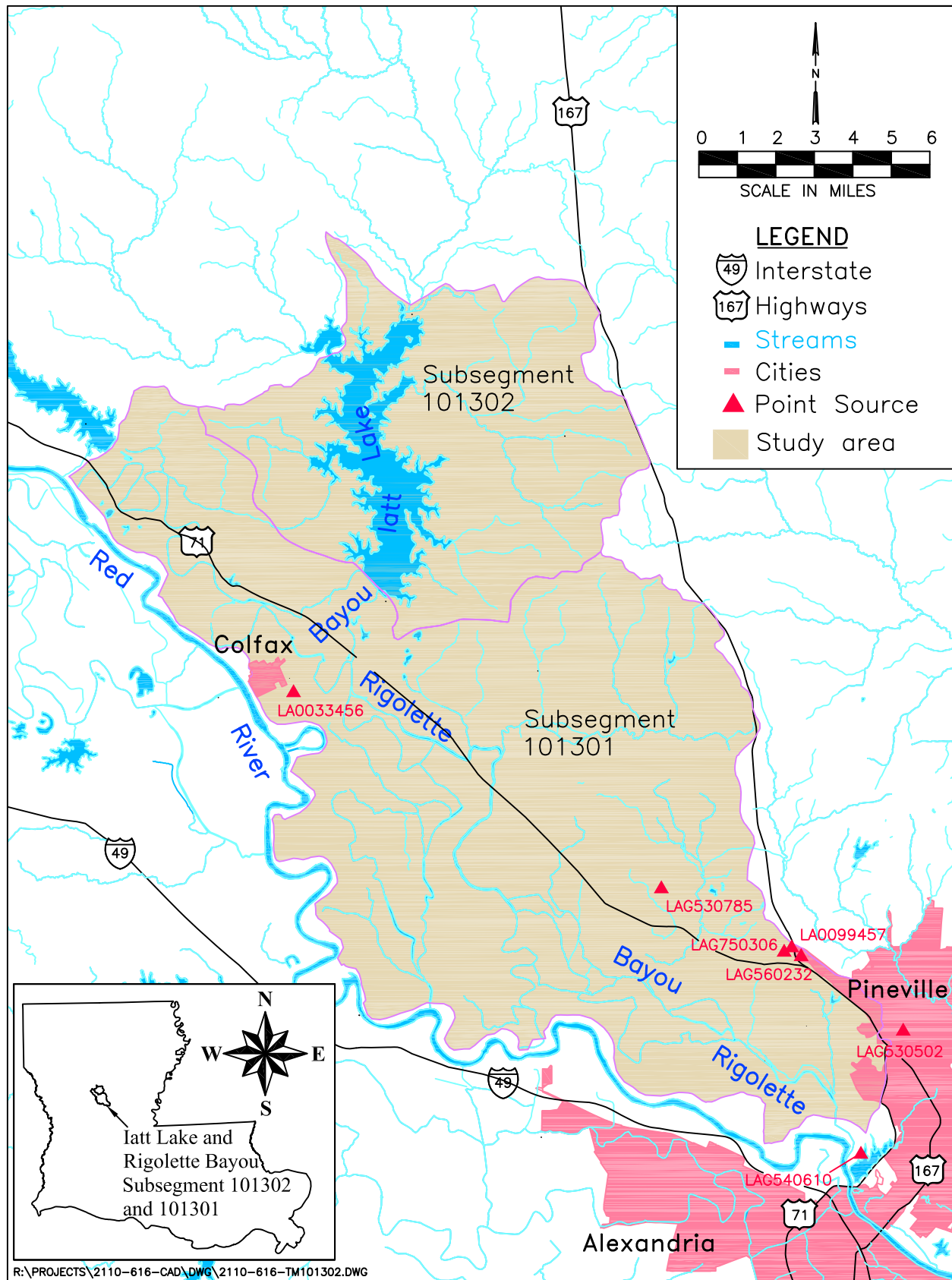


Figure A.3. Study area for segments 101301 and 101302.

APPENDIX B

LDEQ Routine Monitoring Data

Table B.1. Historical Water Quality Data for Beaver Creek west of Faircloth, Louisiana (570)

Collection Date	Collection Time	Sample Depth (meters)	DO (mg/L)
6-Mar-01	11:30	0	3.4
16-Nov-99	11:30	0	5.6
2-Feb-99	09:30	1	6.3
11-Aug-98	09:25	1	6.7
9-Jun-98	11:05	0	7.3
8-Sep-97	10:30	1	7.4
17-Aug-99	09:00	0	7.5
5-Dec-00	11:45	0	7.8
11-May-99	09:20	0	8.5
16-Nov-98	09:45	0	8.6
9-Feb-98	01:35	1	10.8
17-Nov-97	01:30	1	12.2

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Table B.2. Historical Water Quality Data for Cress Creek west of Oak Grove, Louisiana (556)

Collection Date	Collection Time	Sample Depth (meters)	DO (mg/L)
6-Mar-01	12:30	0	3.7
11-Aug-98	08:45	1	4.3
9-Jun-98	11:45	0	4.9
2-Feb-99	08:30	1	6.6
8-Sep-97	02:30	1	7.1
5-Dec-00	01:00	0	7.1
11-May-99	08:30	0	7.7
18-Nov-96	01:44	0	8.4
16-Nov-98	09:15	0	8.9
13-May-97	11:45	0	9.3
17-Feb-97	03:30	0	10.7
9-Feb-98	02:10	1	11.3
17-Nov-97	02:15	1	12.7

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Table B.3. Historical Water Quality Data for Iatt Lake southwest of Fairfield, Louisiana (1221)

Collection Date	Collection Time	Sample Depth (meters)	DO (mg/L)
19-Aug-02	08:50	1	4.3
16-Dec-02	09:22	0.5	4.5
23-Sep-02	09:03	0.5	4.6
19-Nov-02	08:35	1	4.9
17-Jun-02	08:40	1	5.2
21-Oct-02	08:30	1	5.4
22-Jul-02	08:50	1	6.9
20-May-02	09:10	1	6.9
25-Feb-02	09:25	1	7.9
25-Mar-02	09:40	1	8.8
15-Apr-02	10:20	1	10.2
28-Jan-02	08:55	1	15.4

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Table B.4. Historical Water Quality Data for Rigolette Bayou northwest of Pineville, Louisiana (1220)

Collection Date	Collection Time	Sample Depth (meters)	DO (mg/L)
20-Aug-02	10:25	1	4.6
18-Nov-02	01:13	1	6.0
18-Jun-02	10:22	1	6.4
22-Oct-02	08:45	1	6.5
22-Oct-02	09:00	1	6.5
17-Dec-02	09:10	1	7.0
24-Sep-02	11:00	1	7.0
18-Feb-02	09:45	1	7.1
21-May-02	09:40	1	7.5
26-Mar-02	10:10	1	7.9
22-Jan-02	09:45	1	9.1
22-Jan-02	09:47	1	9.1
16-Apr-02	10:25	1	10.8

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APPENDIX C

FTN Field Data

Table C.1. Field data collection sites for FTN Field survey for Red and Sabine basins.

SUBSEG. NUMBER	SITE NO.	SITE NAME	DIRECTIONS	TYPE OF DATA COLLECTED
Red River basin				
100404	100404-A	Cypress Bayou Reservoir at upper end	At LA Hwy 162 bridge east of Benton	In situ
100404	1181	Cypress Bayou Reservoir southeast of Benton, LA	At spillway on Parks Road, 3.1 miles southeast of Benton, 3.5 miles southwest of Bellevue, 9.1 miles north of Bossier	In situ, sample
100405	100405-A	Black Bayou near Benton, LA	At LA Hwy 162 on east edge of Benton	In situ, sample
100405	1182	Black Bayou Reservoir at Linton Road, southeast of Benton, LA	4.4 miles southeast of Benton, 3.2 miles northeast of Dukedale, 4.3 miles southwest of Linton	In situ, sample
100406	363	Flat River Drainage Canal north of Bossier City, LA	At Airline Drive bridge, 4.0 miles south-southeast of Benton, LA	In situ, sample, flow, width
100406	389	Flat River Drainage Canal northeast of Bossier City, LA	At Swan Lake Road bridge 7.5 miles north-northeast of City Hall in Bossier City, LA	In situ, width, flow
100406	390	Flat River Drainage Canal NE of Shreveport	At Deer Point Road bridge 5.75 miles southeast of Benton, LA	In situ, width
100406	272	Flat River east of Taylortown, LA	At State Highway 527 bridge, 13 miles southeast of Shreveport, LA	In situ, flow, width, contin.
100406	100406-A	Flat River east of Poole, LA	At Poole Rd, 3 miles southeast of intersection of Poole Rd and US Hwy 71	In situ, flow, width
100501	100501-A	Bayou Dorcheat south of AR state line	At LA Hwy 157 several miles south of AR state line, east of Springhill, LA	In situ, sample, flow, width
100501	100501-B	Bayou Dorcheat NE of Cotton Valley	At LA Hwy 160 about 4-5 miles northeast of Cotton Valley, LA	In situ, sample, flow, width
100501	61	Bayou Dorcheat west of Minden, LA	At bridge on US Hwy 80, 3.0 miles west of Minden	In situ, flow, width
100501	274	Bayou Dorcheat west of Sibley, LA	At State Highway 164 bridge, 2.0 miles west of Sibley, LA, 6.0 miles southwest of Minden, LA	In situ, flow, width,
100601	100601-A	Wallace Bayou upstream of Bayou Pierre	At White Springs Rd, about 4 miles southwest of Gayles, LA, about 2 miles downstream of Wallace Lake	In situ, sample, flow, width
100601	278	Bayou Pierre near Shreveport, LA	At State Highway 526 bridge, 0.75 mile northeast of Forbing, LA, 8.0 miles south of Shreveport, LA	In situ, sample, flow, width
100601	1183	Bayou Pierre at Ellerbee Road, S of Gayles	3.2 miles south of Gayles, 2.4 miles southwest of Cecile, 5 miles northeast of Frierson	In situ, sample, flow, width
100601	100601-B	Bayou Pierre southwest of Williams, LA	At highway 509, about 4 miles southwest of Williams, LA, about 9 miles south of Caddo/Red River Parish line	In situ, flow, width
100602	100602-A	Boggy Bayou SE of Hicks Crossing, LA	At LA Hwy 169, about 2-3 miles southeast of Hicks Crossing	In situ, sample, flow, width
100602	1207	Boggy Bayou southwest of Shreveport, LA	6.4 miles southwest of Shreveport, 3.1 miles north of Keithville, 2.9 miles southeast of Reservoir	In situ, sample, flow, width
100702	100702-A	Black Lake Bayou west of Mt. Lebanon	At LA Hwy 793 about 5-6 miles west of Mt. Lebanon (in 100701)	In situ, flow, width
100702	100702-B	Leatherman Creek west of Mt. Lebanon	At LA Hwy 793 about 4 miles west of Mt. Lebanon	In situ, sample, flow, width

SUBSEG. NUMBER	SITE NO.	SITE NAME	DIRECTIONS	TYPE OF DATA COLLECTED
100702	282	Black Lake Bayou west of Castor, LA	At LA Highway 4, 2.5 miles west of Castor, LA, 18.5 miles northeast of Coushatta, LA	In situ, sample, flow, width
100702	1187	Black Lake Bayou at Hwy 155, E of Martin	At bridge on State Hwy 155, 3.5 miles east of Martin, 6.2 miles west of Skidder, 5 miles SW of Ashland	In situ, sample, flow, width
100703	100703-A	Black Lake northeast of Campiti, LA	On LA Hwy 9 bridge about 6 miles northeast of Campiti, LA	In situ, sample
100703	100703-B	Clear Lake outlet northeast of Clarence, LA	At LA Hwy 1226, just downstream of Chivery Dam at outlet of Clear Lake, about 5 miles northeast of Clarence	In situ, sample, flow, width
100803	100803-A	Saline Bayou northeast of Clarence, LA	Access point at end of LA Hwy 1227 at Allen Dam, about 5.5 miles NE of Clarence	In situ, sample, flow, width
100803	1214	Saline Bayou southeast of Clarence, LA	At US Hwy 71, 7 miles east of Natchitoches, 5.1 miles southeast of Clarence, 3.4 miles south of Trichell	In situ, sample, flow, width, contin.
101301	556	Cress Creek west of Oak Grove, LA	At bridge on LA Hwy 8, 2.8 miles W of Oak Grove, 4 miles S of Fairfield, 3.7 miles N of Bagdad	In situ, sample
101301	101301-A	Rigolette Bayou WNW of Bagdad, LA	At LA Hwy 492, about 1 mile WNW of Bagdad, about 7 miles southeast of Colfax	In situ, sample, flow, width
101301	1220	Rigolette Bayou northwest of Pineville, LA	Bridge on Rigolette Rd., 4.8 miles NW of Pineville, 1.6 miles NE of Barrett, 3.9 miles SW of Tio	In situ, sample, flow, width, contin.
101302	101302-A	Iatt Creek near upstream end of Iatt Lake	At LA Hwy 122 about 10 miles east of Montgomery, LA	In situ, sample
101302	570	Beaver Creek south of Faircloth, LA	0.35 miles west of Faircloth, 2 miles northwest of Fairfield, 4.5 miles southwest of Wilhana	In situ, sample
101302	1221	Iatt Lake southwest of Fairfield, LA	Public boat launch near spillway, 4.4 miles southwest Fairfield, 7.1 miles northwest of Oak Grove, 3.7 miles northeast	In situ, sample
101503	371	Saline Bayou east of Alexandria, LA	9.0 miles east of Buckeye, LA, 1.5 mile northeast of Saline Lake, 0.5 mile south of entrance to Bushyhead Bayou	In situ
101503	101503-A	Saline Bayou southeast of Saline Lake	At local road about 1-2 miles southeast of east end of Saline Lake	In situ, sample
101604	1231	Lake Concordia at Ferriday, LA	Sportsman's Marina, 1.7 miles NW of Ridgecrest, 6.8 miles S of Clayton, 16 miles E of Jonesville	In situ, sample
101604	101604-A	Bayou Cocodrie at Ferriday, LA	At US Hwy 65 bridge, about 0.5 miles SW of Lake Concordia	In situ, width, xcs
Sabine River basin				
110401	110401-A	Toro Creek southeast of Florien, LA	At Plainview Road, about 3-4 miles southeast of Florien, LA	In situ, sample, flow, width
110401	1160	Bayou Toro northeast of Toro, LA	At LA Hwy 473, about 2 miles northeast of Toro, LA	In situ, sample, flow, width

Note: "contin." = continuous in situ monitoring

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Table C.2. In situ data for FTN field survey in Red River and Sabine River basins.

Subsegment Number	Site No.	Site Name	Date	Time	Water Temp. (C)	DO (mg/L)	Conductivity (umhos/cm)	pH (su)
100404	1181	Cypress Bayou Reservoir southeast of Benton	09/01/05	10:44	30.8	7.3	54	7.3
	100404-A	Cypress Bayou Reservoir @ Hwy 162	09/01/05	11:20	30.4	6.1	51	7.0
100405	1182	Black Bayou Reservoir @ Linton Rd	09/01/05	10:20	29.8	5.5	75	7.2
	100405-A	Black Bayou @ Hwy 162	09/01/05	11:45	24.9	1.0	440	6.9
100406	272	Flat River @ Hwy 527	09/02/05	08:15	25.5	2.9	811	7.1
	363	Flat River Airline Dr. bridge	09/01/05	09:30	29.3	5.2	90	7.1
	389	Flat River Dr. Canal Swan L. Rd.	09/01/05	07:54	26.9	1.4	336	7.6
	390	Flat River @ Deer Pt. Road	09/01/05	08:40	27.1	0.4	179	7.2
	100406-A	Flat River @ Swan Lake Bridge	08/31/05	19:00	30.6	5.3	888	7.3
100501	61	Bayou Dorcheat @ Hwy 80	09/01/05	18:45	32.6	7.1	127	6.7
	274	Bayou Dorcheat @ Hwy 164	09/02/05	09:40	29.1	6.2	193	7.6
	100501-A	Bayou Dorcheat	09/01/05	14:35	27.1	3.2	418	7.1
	100501-B	Bayou Dorcheat @ Hwy 160	09/01/05	15:55	31.8	5.9	76	7.2
100601	278	Bayou Pierre nr Shreveport	08/31/05	12:20	31.0	6.8	498	7.0
	1183	Bayou Pierre @ Ellerbee Rd	08/31/05	10:10	25.0	3.7	476	7.2
	100601-A	Wallace Bayou	08/31/05	11:10	29.5	5.9	214	7.6
	100601-B	Bayou Pierre	08/31/05	08:45	26.6	4.9	338	7.4
100602	1207	Boggy Bayou Hwy 171	08/31/05	14:40	31.5	5.2	156	7.1
	100602-A	Boggy Bayou @ Hwy 169	08/31/05	13:45	27.2	4.4	208	7.1
100702	282	Black Lake Bayou Hwy 4	09/07/05	09:20	24.7	5.3	35	6.1
	1187	Black Lake Bayou Hwy 155	09/07/05	10:25	24.9	5.3	40	6.3
	100702-A	Black Lake Bayou Hwy 793	09/07/05	07:20	23.4	2.9	167	6.3
	100702-B	Leatherman Creek	09/07/05	08:05	23.3	3.4	54	6.3
100703	100703-A	Black Lake @ Hwy 9	09/07/05	11:20	27.6	5.3	71	6.4
	100703-B	Clear Lake outlet	09/07/05	12:40	29.8	6.9	96	6.9
100803	1214	Saline Bayou @ Hwy 71	09/07/05	14:40	30.2	5.4	105	6.8
	100803-A	Saline Bayou @ Allen Dam	09/07/05	13:40	30.6	8.3	82	7.8
101301	556	Cress Creek @ Hwy 8	09/08/05	11:30	21.7	7.5	22	6.5
	1220	Rigolette Bayou @ Rig. Road	09/08/05	09:35	27.4	4.3	108	6.8
	101301-A	Rigolette Bayou @ hwy 492	09/08/05	10:20	24.2	5.0	54	6.6
101302	570	Beaver Creek	09/08/05	12:30	20.3	8.3	29	6.5
	1221	Iatt Lake	09/08/05	11:05	26.5	3.2	6	6.3
	101302-A	Iatt Creek @ Hwy 122	09/08/05	12:05	24.2	1.2	129	6.4
101503	101503-A	Saline Bayou on Farm Rd.	09/09/05	07:05	24.0	3.3	179	6.9
101504	371	Saline Bayou @ WMA boatramp	09/08/05	15:30	30.6	8.3	47	8.0
101604	1231	Lake Concordia @ Sportmans Lodge	09/09/05	08:45	28.9	7.5	251	8.3
	101604-A	Bayou Cocodrie @ Hwy 65	09/09/05	08:30	27.2	2.2	282	6.9
110401	1160	Bayou Toro @ Hwy 473	09/08/05	07:30	24.4	4.8	99	6.4
	110401-A	Toro Creek @ Plainview Rd.	09/08/05	06:40	21.8	1.3	81	6.3

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Table C.3 Analytical laboratory results from samples collected in FTN field survey for Red River and Sabine River basins.

Subsegment Number	Site Number	Site Name	Sampling Date	TSS (mg/L)	TKN (mg/L)	Total Phos. (mg/L)	TOC (mg/L)	Chlorophyll a (mg/L)	Ammonia as N (mg/L)	NO3 + NO2 N (mg/L)
100404	1181	Cypress Bayou Reservoir nr Benton	09/01/05	7.7	1.8	0.045	9.1	0.035	0.24	<0.05
100405	1182	Black Bayou Reservoir nr Linden Rd	09/01/05	8	1.9	0.061	10	0.051	0.14	<0.05
	100405-A	Black Bayou nr Benton	09/01/05	8.4	2.4	0.082	12	<0.02	0.56	<0.05
100406	363-1	Flat River Dr. Canal nr Bossier City	09/01/05	26	2.5	0.093	10	0.027	0.39	<0.05
	363-2	Flat River Dr. Canal nr Bossier City	09/01/05	26	2.2	0.074	11	0.03	0.36	<0.05
100501	100501-A	Bayou Dorcheat nr AR line	09/01/05	11	1.6	0.15	5.7	<0.02	0.2	0.26
	100501-B	Bayou Dorcheat NE Cotton Valley	09/01/05	4.4	1.7	0.048	8.3	0.021	0.18	<0.05
100601	278	Bayou Pierre nr Shreveport	08/31/05	9.8	1.4	0.25	7.6	<0.02	0.13	<0.05
	1183	Bayou Pierre at Ellerbee Rd.	08/31/05	16	2.3	0.22	2.6	<0.02	0.22	0.39
	100601-A-1	Wallace Bayou u/s B. Pierre	08/31/05	19	1.6	0.085	6.8	<0.02	<0.1	<0.05
	100601-A-2	Wallace Bayou u/s B. Pierre	08/31/05	18	1.8	0.085	6.7	<0.02	<0.1	0.06
100602	1207	Boggy Bayou SW of Shreveport	08/31/05	19	1.5	0.14	6.1	<0.02	<0.1	<0.05
	100602-A	Boggy Bayou SE of Hicks Crossing	08/31/05	78	1.8	0.15	8.1	<0.02	<0.1	<0.05
100702	100702-B	Leatherman Creek	09/07/05	18	2.4	0.11	7.5	0.076	0.32	<0.05
	282	Black Lake Bayou w of Castor	09/07/05	4.8	1.6	0.048	5.9	<0.02	0.22	0.064
	1187	Black Lake Bayou @ Hwy 155	09/07/05	5.2	1.7	0.064	6	<0.02	0.17	0.096
100703	100703-A-1	Black Lake NE Campti	09/07/05	73	1.7	0.048	7.7	<0.02	0.17	<0.05
	100703-A-2	Black Lake NE Campti	09/07/05	4.4	1.9	0.05	7.8	<0.02	0.17	<0.05
	100703-B	Clear Lake outlet	09/07/05	16	1.9	0.12	9.2	0.1	0.25	<0.05
100803	1214	Saline Bayou SE of Clarence	09/07/05	22	1.9	0.08	8.6	0.034	0.23	<0.05
	100803-A	Saline Bayou NE of Clarence	09/07/05	16	3	0.098	8.7	0.05	0.21	<0.05
101301	556	Cress Creek	09/08/05	<4	<1	<0.02	3.1	<0.02	0.16	<0.05
	1220	Rigolette Bayou NE of Pineville	09/08/05	13	1.1	0.082	4.9	<0.02	0.12	<0.05
	570	Beaver Creek	09/08/05	6.2	<1	<0.02	1.5	<0.02	<0.1	0.1
	101301-A	Rigolette Bayou WNW of Bagdad	09/08/05	41	1.3	0.08	3.2	<0.02	0.19	<0.05
101302	1221	Iatt Lake	09/08/05	<4	<1	<0.02	9	<0.02	0.19	<0.05
	101302-A-1	Iatt Creek	09/08/05	5.4	1.4	0.048	11	<0.02	0.22	0.059
	101302-A-2	Iatt Creek	09/08/05	5.2	<1	0.048	11	<0.02	0.14	<0.05
101503	101503-A	Saline Bayou SE of Saline L.	09/09/05	280	2.2	0.15	6.8	0.026	0.58	0.068
101604	1231	Lake Concordia	09/09/05	12	1.9	0.15	7.9	0.049	0.23	<0.05
110401	1160	Bayou Toro NE of Toro	09/08/05	16	1.7	0.1	6.4	<0.02	0.14	<0.05
	110401-A	Toro Creek	09/08/05	6.8	1.4	0.11	7.3	<0.02	0.16	<0.05

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Table C.4. Summary of CBOD time series data from FTN field survey of Red River and Sabine River basins..

Subsegment Number	Sample No.	CBOD 1, 2-day	CBOD 2, 5-day	CBOD 3, 9-day	CBOD 4, 14-Day	CBOD 5, 20-day	k rate (1/day)	CBODu (mg/l)
100404	1181	<2	3.3	5	5.3	5.2	0.22	5.49
100405	1182	2.9	4.8	6.7	8.1	12	0.06	15.61
	100405-A	<2	<2	3.3	5.1	6.9	0.05	12.47
100406	363-1	<2	<2	4.3	5.7	6.6	0.12	7.50
	363-2	<2	<2	4.2	5.8	6.8	0.12	7.69
100501	100501-A	2.4	3.2	3.9	4.2	4.8	0.30	4.43
	100501-B	5.2	6.5	7.6	7.9	12	0.21	10.13
100601	278	<2	<2	2.3	4.6	6.8	0.04	13.85
	1183	<2	<2	<2	5.1	3.9	0.60	4.50
	100601-A-1	<2	<2	<2	2.8	4.4	0.16	5.38
	100601-A-2	<2	2.1	2.3	4.1	5.4	0.04	9.83
100602	1207	<2	<2	2.1	3.4	6	0.04	13.05
	100602-A	2.7	3.9	5	7.8	9.4	0.07	11.99
100702	282	<2	<2	<2	<2	2.2	--	--
	1187	<2	<2	<2	<2	<2	--	--
	100702-B	<2	2.1	3.7	4.6	6.2	0.05	9.62
100703	100703-A-1	<2	<2	<2	2.5	4	0.05	8.69
	100703-A-2	<2	<2	<2	2.3	3.1	0.05	5.60
	100703-B	2.4	5.9	8.9	9.6	14	0.08	16.99
100803	1214	<2	2.7	7.1	7.3	8.9	0.31	8.42
	100803-A	<2	<2	3.9	4.8	6.6	0.05	10.75
101301	556	<2	<2	<2	<2	<2	--	--
	1220	<2	<2	<2	3.1	3.9	0.15	4.43
	101301-A	<2	<2	<2	<2	<2	--	--
101302	570	<2	<2	<2	<2	<2	--	--
	1221	<2	<2	<2	<2	2.2	--	--
	101302-A-1	<2	<2	2.7	3.6	4.3	0.10	5.04
	101302-A-2	<2	<2	<2	2.5	3.4	0.05	5.75
101503	101503-A	<2	<2	3.6	6.2	6.9	0.22	7.29
101604	1231	<2	3.6	7.3	9.9	12	0.06	18.50
110401	1160	<2	<2	<2	<2	2	--	--
	110401-A	<2	<2	<2	<2	2.3	--	--

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**FIELD SHEETS ARE AVAILABLE
FROM EPA UPON REQUEST.**

APPENDIX D

LA-QUAL Vector Diagram

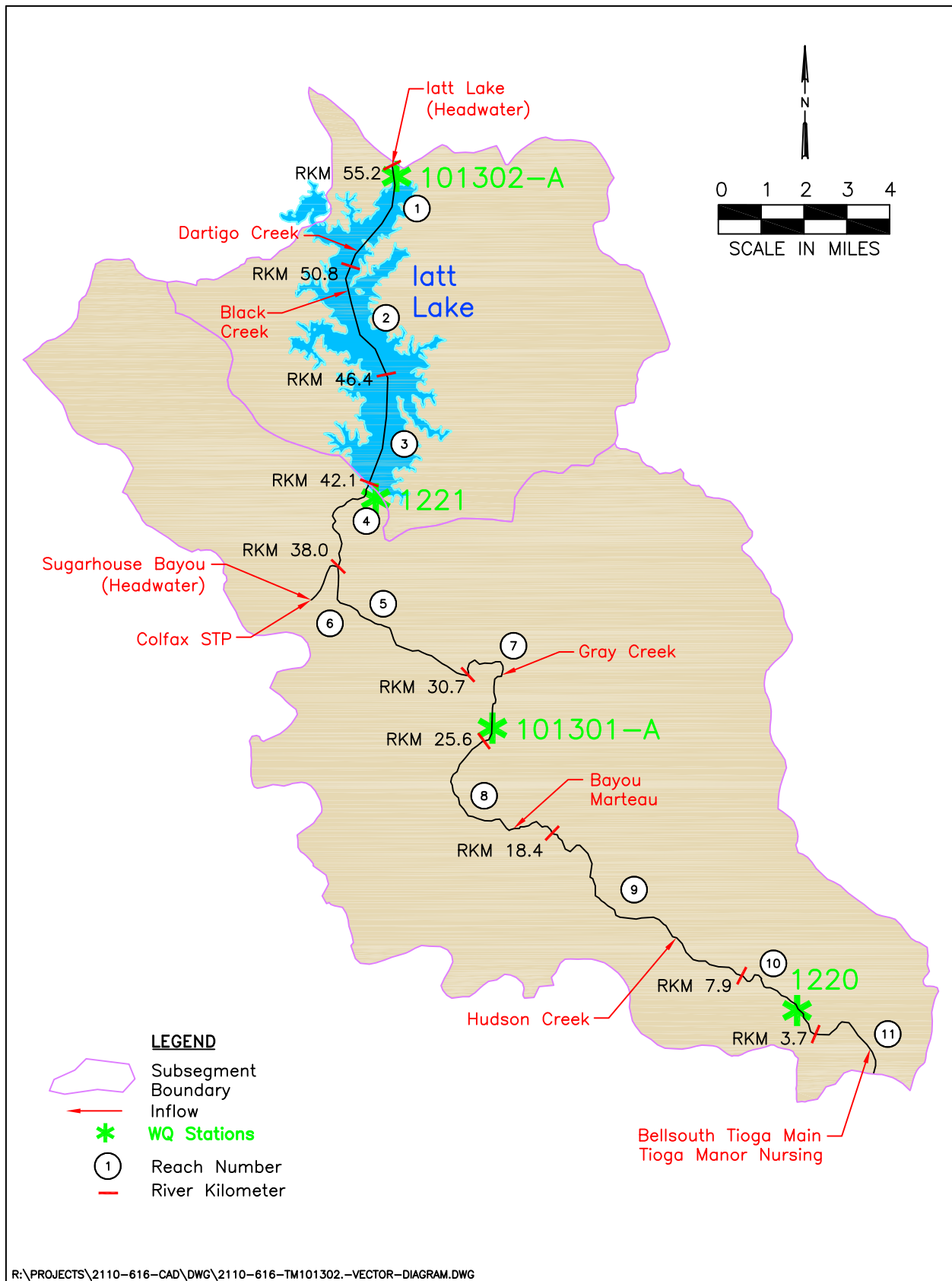


Figure D.1. LA-QUAL vector diagram for Iatt Lake and Bayou Rigolette.

APPENDIX E

Flow Measurements and Cross-Sections

FLOW MEASUREMENTS IN BAYOU RIGOLETTE

LOCATION: FTN Station 101301-A
 DATE: _____ PERSONNEL: _____
 BEGINNING TIME: _____ GPS N/S COORDINATE: _____
 ENDING TIME: _____ GPS E/W COORDINATE: _____
 BEGINNING STAGE: _____ FLOW METER USED: _____
 ENDING STAGE: _____ CHANNEL BOTTOM: _____
 COMMENTS, ACCURACY: _____

<i>measured</i>	<i>calculated</i>	<i>measured</i>	<i>measured</i>	<i>measured</i>	<i>calculated</i>	<i>calculated</i>	<i>calculated</i>	
DISTANCE FROM INITIAL POINT (ft)	WIDTH OF SUB- SECTION (ft)	DEPTH OF WATER (ft)	DROGUE MEASUREMENTS			DEPTH AVERAGE VELOCITY (m/sec)	FLOW (ft ³ /sec)	COMMENTS
			DISTANCE TRAVELED (ft)	ELAPSED TIME (sec)	SURFACE VELOCITY (ft/sec)			
0	2.50	0				0	0.00	
5	5.00	0.4				0	0.00	
10	5.00	0.5				0	0.00	
15	5.00	0.4				0	0.00	
20	5.00	0.3				0	0.00	
25	5.00	0.5				0.03	0.25	
30	5.00	0.8				0.1	1.31	
35	5.00	1.1				0.01	0.18	
40	5.00	1.1				0.07	1.26	
45	3.15	0.8				0	0.00	
46.3	0.65	0				0	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	

46.3 = TOTAL WIDTH
 46.3 \L WIDTH (error check)

 TOTAL FLOW = 3.00 cfs
 TOTAL XS AREA = 28.0 ft²
 AVERAGE DEPTH = 0.605 ft

FLOW MEASUREMENTS IN BAYOU RIGOLETTE

LOCATION:	<u>LDEQ Station 1220</u>	PERSONNEL:	_____
DATE:	_____	GPS N/S COORDINATE:	_____
BEGINNING TIME:	_____	GPS E/W COORDINATE:	_____
ENDING TIME:	_____	FLOW METER USED:	_____
BEGINNING STAGE:	_____	CHANNEL BOTTOM:	_____
ENDING STAGE:	_____		
COMMENTS, ACCURACY:	_____		

<i>measured</i>	<i>calculated</i>	<i>measured</i>	<i>measured</i>	<i>measured</i>	<i>calculated</i>	<i>calculated</i>	<i>calculated</i>	
DISTANCE FROM INITIAL POINT (ft)	WIDTH OF SUB-SECTION (ft)	DEPTH OF WATER (ft)	DROGUE MEASUREMENTS			DEPTH AVERAGE VELOCITY (ft/sec)	FLOW (ft3/sec)	COMMENTS
			DISTANCE TRAVELED (ft)	ELAPSED TIME (sec)	SURFACE VELOCITY (ft/sec)			
0	6.00	0			0	0.00	0.00	
12	16.00	1			0	0.00	0.00	
32	20.00	3.1			0	0.00	0.00	
52	20.00	5.9			0	0.00	0.00	
72	20.00	5.1			0	0.00	0.00	
92	19.00	4			0	0.00	0.00	
110	19.00	4.3			0	0.00	0.00	
130	20.00	5.2			0	0.00	0.00	
150	20.00	6.7			0	0.00	0.00	
170	20.00	2			0	0.00	0.00	
190	14.00	0.9			0	0.00	0.00	
198	4.00	0			0	0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	
	0					0.00	0.00	

198	:	TOTAL WIDTH		TOTAL FLOW =	0.0	cfs
198	:	L WIDTH (error check)		TOTAL XS AREA =	746.3	ft ²
				AVERAGE DEPTH =	3.8	ft

Figure E.1. Cross-section at Bayou Rigolette Station 101301-A

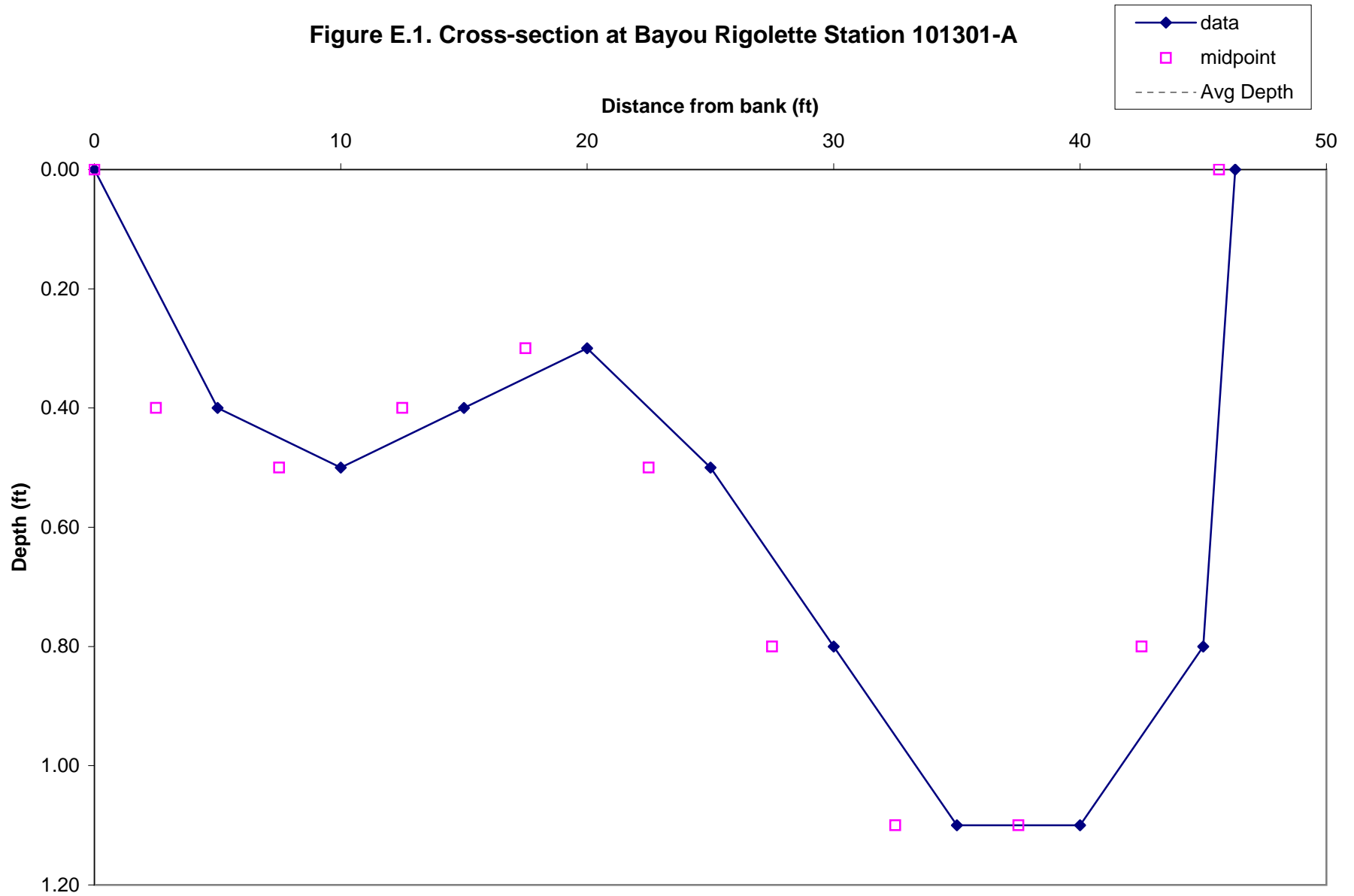
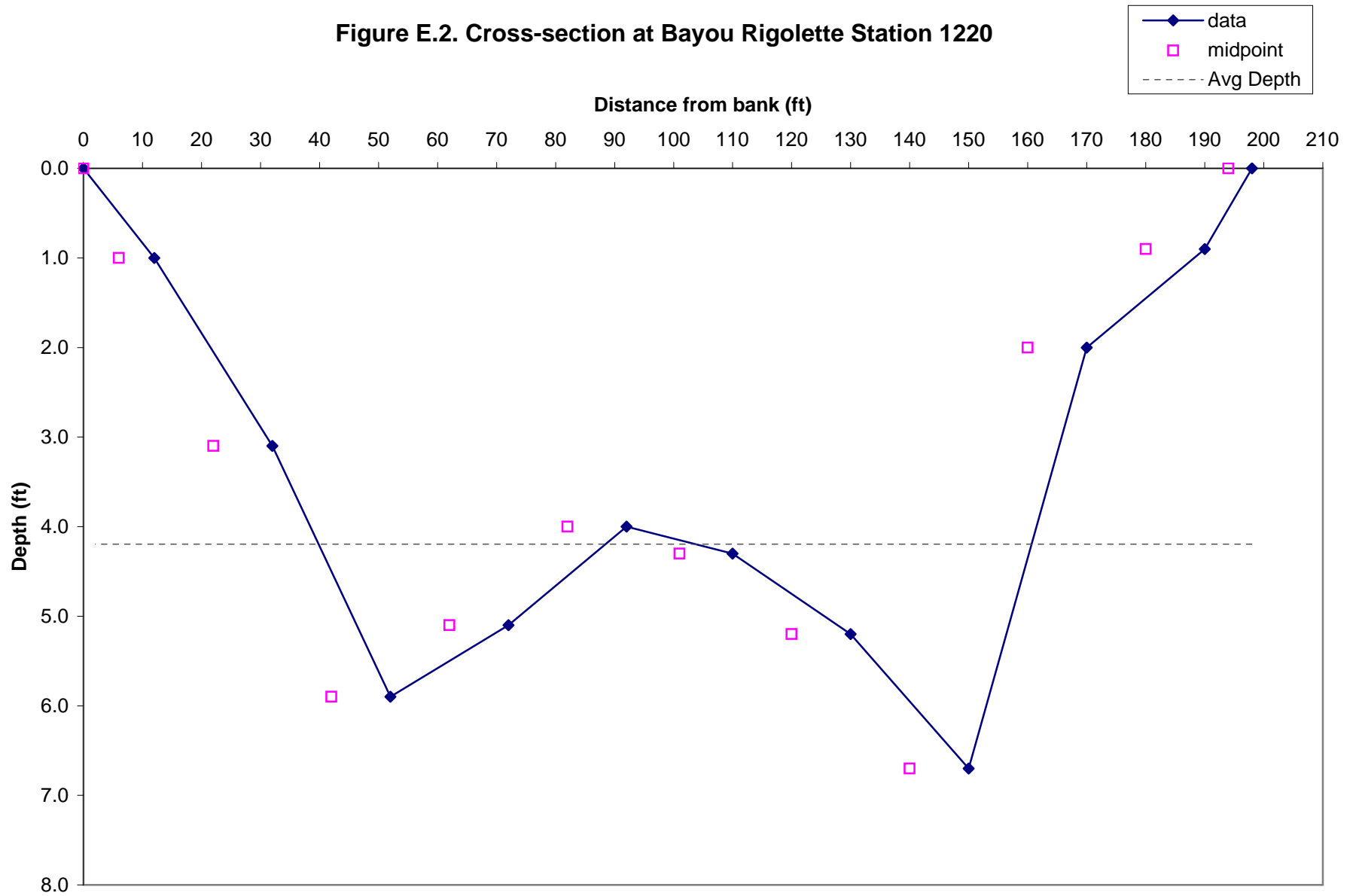


Figure E.2. Cross-section at Bayou Rigolette Station 1220



APPENDIX F

Calibration Model Input Data and Sources

APPENDIX F. CALIBRATION MODEL INPUT DATA AND SOURCES

Table F.1. Calibration Inputs for Hydraulics (Data Type 9).

Parameter Name or Description	Reach(es)	Value Used in Model	Data Source /Comment
Width Coefficient A and B	1-13	0	Used to maintain a constant width
Width Coefficient C	1	1483	GIS surface area divided by reach length
	2	2360	
	3	2257	
	4	16	Average of widths measured from DOQQs on LDEQ make-a-map website
	5	21.59	
	6	29.40	
	7	11.1	
	8	23.2	
	9	10.8	
	10	47.7	
	11	97.5	
Depth Coefficients D and E	1-13	0	Used to maintain a constant depth
Depth Coefficient F	1	1	Assumed depth of 3 ft based on average depth of 4.5 ft
	2	1.5	Average depth = 4.5 ft per Richard Moses
	3	2.0	Assumed depth of 6 ft based on average depth of 4.5 ft
	4	0.24	Average depth at 101301-A
	5	0.24	
	6	0.24	
	7	0.24	
	8	0.58	
	9	0.94	Interpolated between average depths at 101301-A and 1220
	10	1.28	Average depth at 1220
	11	1.28	

Table F.2. Calibration Inputs for Initial Conditions (Data Type 11).

Parameter Name or Description	Reach(es)	Value Used in Model	Data Source / Comment
Temperature (°C)	1-7	24.2	From FTN station 101302-A
	8	25.3	Interpolated between 101301-A and 1220
	9	26.7	
	10-11	27.4	From Station 1220
DO (mg/L)	1-3	1.82	From estimated min DO + 1 mg/L for FTN station 1220 and 101302-A
	4-7	5.47	From estimated min DO + 1 mg/L for FTN station 1220 and 101301-A
	8	5.01	Interpolated between 101301-A and 1220
	9	4.40	
	10-11	4.10	Minimum DO + 1 mg/L for FTN station 1220
Ammonia (mg/L)	1-3	0.18	Average of values measured at 101302-A1 and 101302-A2
	4-7	0.19	Measured at 101301-A
	8	0.17	Interpolated between 101301-A and 1220
	9	0.14	
	10-11	0.12	Measured at 1220

Table F.3. Calibration Inputs for Kinetic Coefficients (Data Types 12 and 13).

Parameter Name or Description	Reach(es)	Option	Value Used in Model	Data Source / Comment
Reaeration option	1-3	20	0.7	
	4-11	15	--	Louisiana Equation (automatically calculated by the model – no input needed)
CBOD decay rate	1-3	0.15/day		Based on analysis of FTN survey data (see Section 4.6)
	4-11	0.075/day		
Nitrification rate	1-3	0.06/day		Based on estimated decay rate typical of a forested area (see Section 4.6)
	4-11	0.07/day		Based on estimated decay rate typical of agricultural areas (see Section 4.6)
Organic N decay rate	1-11	0.02/day		Based on information in Table 5-3 “Rates, Constants, Kinetics” (see Section 4.6)

Table F.4. Calibration Inputs for Nonpoint Source Loads (Data Types 12, 13, and 19).

Parameter Name or Description	Reach	Value Used in Model	Data Source / Comment
Sediment oxygen demand	1	3.20 gm/m ² /day	These values were treated as calibration parameters by adjusting them until the model output was similar to the calibration target values. The order in which each parameter was calibrated is discussed in Section 4.7.
	2	2.30 gm/m ² /day	
	3	1.95 gm/m ² /day	
	4	3.25 gm/m ² /day	
	5	1.90 gm/m ² /day	
	6	1.90 gm/m ² /day	
	7	2.45 gm/m ² /day	
	8	1.50 gm/m ² /day	
	9	1.50 gm/m ² /day	
	10	1.12 gm/m ² /day	
	11	1.12 gm/m ² /day	
Benthic ammonia source rates	1-13	0.0 gm/m ² /day	
CBODu mass loads	1	6950 kg/day	
	2	12000 kg/day	
	3	9000 kg/day	
	4	5.5 kg/day	
	5	5.5 kg/day	
	6	2.0 kg/day	
	7	2.0 kg/day	
	8	50.0 kg/day	
	9	100 kg/day	
	10	220 kg/day	
	11	390 kg/day	
Organic N mass loads	1	145 kg/day	
	2	300 kg/day	
	3	340 kg/day	
	4	0.5 kg/day	
	5	0.5 kg/day	
	6	0.5 kg/day	
	7	0.5 kg/day	
	8	2.0 kg/day	
	9	3.0 kg/day	
	10	6.2 kg/day	
	11	9.5 kg/day	

Table F.5. Calibration Inputs for Headwaters (Data Types 20 and 21).

Name of Inflow	Parameter Name	Value Used in Model	Data Source / Comment
Iatt Creek	Flow rate	0.024 m ³ /sec	Estimated from Big Creek at Pollock based on LDEQ TMDL for Iatt Creek
	DO	1.80 mg/L	Average of values measured at 101302-A during FTN intensive survey.
	CBODu	6.41 mg/L	
	Organic N	1.02 mg/L	
	Ammonia N	0.18 mg/L	
Sugarhouse Bayou	Flow rate	0.0106 m ³ /sec	Estimated using flow per unit drainage area from Iatt Creek (above).
	DO	5.50 mg/L	Values measured at 101301-A during FTN intensive survey.
	CBODu	1.00 mg/L	
	Organic N	1.11 mg/L	
	Ammonia N	0.19 mg/L	

Table F.6. Calibration Flow Rates for Tributaries (Data Type 24).

Name of inflow	Parameter name	Value used in model	Data Source / Comment
Dartigo Creek	Flow rate	0.0176 m ³ /sec	Estimated using flow per unit drainage area from Iatt Creek (above).
Black Creek	Flow rate	0.0088 m ³ /sec	
Gray Creek	Flow rate	0.01123 m ³ /sec	
Bayou Marteau	Flow rate	0.02156 m ³ /sec	
Hudson Creek	Flow rate	0.0079 m ³ /sec	

Table F.7. Calibration Inputs for Tributaries (Data Types 25).

Name of Inflow	Parameter Name	Value Used in Model	Data Source / Comment
Dartigo Creek and Black Creek	DO	8.30 mg/L	Values measured at Station 570 during FTN intensive survey.
	CBODu	2.00 mg/L	
	Organic N	0.50 mg/L	
	Ammonia N	0.10 mg/L	
Gray Creek, Bayou Mateau, and Hudson Creek	DO	7.50 mg/L	Values measured at Station 556 during FTN intensive survey.
	CBODu	2.00 mg/L	
	Organic N	0.30 mg/L	
	Ammonia N	0.20 mg/L	

Table F.8. Calibration Inputs for Point Source Wasteloads (Data Types 24 and 25).

Name of Point Source	Parameter Name	Value Used in Model	Data Source / Comment
Town of Colfax STP (LA0033456)	Flow rate	0.013 m ³ /sec	Monthly average flow from September 2005 DMR.
	DO	5.0 mg/L	LTP value for advanced treatment.
	CBODu	12.9 mg/L	Monthly average BOD5 from September 2005 DMR multiplied by 2.3.
	Ammonia N	1.70 mg/L	NBOD value from LTP based on BOD5 limit, split assuming pond and lagoon system.
	Organic N	3.30 mg/L	
Tioga Manor Nursing Home (LAG540490)	Flow rate	0.00175 m ³ /sec	Monthly average flow from September 2005 DMR.
	DO	2.00 mg/L	LTP value for secondary treatment.
	CBODu	13.8 mg/L	Monthly average BOD5 from September 2005 DMR multiplied by 2.3.
	Organic N	5.00 mg/L	NBOD value from LTP based on BOD5 limit, split assuming pond and lagoon system.
	Ammonia N	10.0 mg/L	
Bellsouth Tioga Main (LAG530502)	Flow rate	0.000002 m ³ /sec	From permit
	DO	2.00 mg/L	LTP value for secondary treatment.
	CBODu	13.8 mg/L	BOD5 from 2005 DMRs multiplied by 2.3.
	Organic N	5.00 mg/L	NBOD value from LTP based on BOD5 limit, split assuming pond and lagoon system.
	Ammonia N	10.0 mg/L	

APPENDIX G

Literature Values for Mineralization Rates

Table G.1. Summary of NBOD and CBOD decay rates from LDEQ Intensive survey.

Subsegment	Sample Location	CBOD Decay (1/day)	CBODu (mg/L)	NBOD Decay (1/day)	NBODu (mg/L)
080102	Bayou Chauvin @ Hwy. 139 Bridge	0.06	25.33	0.26	8.18
	Bayou Chauvin @ Leisure Village1	0.07	10.04	0.20	2.88
	Bayou Chauvin @ Leisure Village2	0.06	10.13	0.24	2.82
	Bayou Chauvin @ Ouachita Levee	0.10	21.30	0.10	7.00
	Bayou Chauvin @ USGS Control Structure	0.08	16.93	0.18	4.38
	Bayou Chauvin @ West Elmwood Rd.	0.07	17.11	0.18	4.94
	Bayou Desiard @ USGS Wier	0.08	10.31	0.13	2.38
030104	Mill Creek @ Highway 112	0.07	6.49	0.06	1.20
	Mill Creek @ iron bridge	0.04	13.22	0.08	1.84
	Mill Creek @ Oakdale Road	0.06	5.49	0.06	0.80
	Mill Creek @ Tower Road	0.04	16.42	0.09	2.18
	Mill Creek Just above the confluence with Calcasieu	0.04	10.37	0.05	0.64
030603	Marsh Bayou @ confluence of Calcasieu River	0.05	3.42	0.09	0.36
	Marsh Bayou @ Marsh Bayou Road	0.08	22.92	0.11	5.83
	Marsh Bayou @ Topsy Road	0.08	24.00	0.25	8.97
	Marsh Bayou @ Welcome Road	0.06	12.19	0.42	11.47
	Marsh Bayou Calcasieu River below confluence of Mars	0.05	3.48	0.06	0.42
	Marsh Bayou Site 1 Duplicate	0.06	3.52	0.03	0.61
030805	Indian Bayou - INDB1	0.04	9.87	0.08	0.98
	Indian Bayou - INDB2	0.05	10.79	0.07	1.05
	Indian Bayou - INDB3	0.09	11.41	0.10	2.64
	Indian Bayou - INDB4	0.06	17.83	0.07	2.55
	Indian Bayou - INDB5	0.08	10.98	0.15	2.68
030804	Little River - LR1	0.04	9.34	0.07	1.07
	Little River - LR2	0.03	15.44	0.12	1.22
	Little River - LR3	0.03	11.29	0.05	0.94
	Little River - LR4	0.04	14.61	0.06	0.77
	Little River - LR5	0.03	13.78	0.06	0.90
	Little River - LR7	0.03	22.10	0.01	1.01
081504	FLCR1 / Flat Creek @ Hwy. 147	0.04	15.66	0.04	3.79
	FLCR2 / Flat Creek @ Hwy. 127	0.03	14.71	0.05	1.18
	FLCR3 / Flat Creek @ confluence with Castor Creek-- 3 miles	0.05	8.75	0.09	1.30
030701	BS10 / Bayou Serpent Upstream of confluence with Thompson Gul	0.03	10.25	0.04	1.19
	BS12 / Bayou Serpent Upstream of the confluence with Little B	0.03	10.33	0.06	1.26
	BS13 / Bayou Serpent Midway between Little Bayou and Unnamed	0.03	9.86	0.04	1.21
	BS14 / Bayou Serpent @ Hwy. 383	0.03	9.36	0.04	1.09
	BS16 / Bayou Serpent @ Hecker Rd.	0.04	8.83	0.06	1.35
	BS18 / Bayou Serpent @ Segment boundary	0.04	7.65	0.04	1.40
	BS19 / Bayou Serpent Bayou Alligator @ Lauderdale Rd (Hwy. 99	0.04	24.46	0.06	3.70
	BS25 / Bayou Serpent Unnamed Trib 5 at Country Rd.	0.04	8.43	0.06	1.16
	BS26 / Bayou Serpent Unnamed Trib 5 @ US Hwy. 165	0.04	9.84	0.04	1.36
	BS27 / Bayou Serpent Cow Bayou @ Parish Line Rd.	0.04	7.82	0.07	0.90
	BS29 / Bayou Serpent Little Bayou Upstream of Confluence with	0.06	12.04	0.07	1.33
	BS3 / Bayou Serpent @ Neilson Rd.	0.05	9.25	0.07	2.09
	BS5 / Bayou Serpent Upstream of weir	0.03	12.66	0.05	1.86
	BS6 / Bayou Serpent @ Hwy. 3086 Downstream of the weir	0.03	12.12	0.06	1.76
	BS8 / Bayou Serpent Bayou Serpent @ Upstream of US Hwy. 165	0.03	10.15	0.05	1.19
081401	DR10 / Dugdemona River Smurfit-Stone outfall canal sampling sit	0.05	37.90	0.10	5.87
	DR12 / Dugdemona River @ LA 4 located W. of Jonesboro	0.03	20.91	0.06	1.39
	DR13 / Dugdemona River @ Parish Rd. W of Evergreen Rd. S. of LA	0.03	13.83	0.05	0.91
	DR14 / Dugdemona River @ LA 126 located just E of Brewtons Mill	0.03	11.15	0.09	0.78
	DR15 / Dugdemona River @ Carter Crossing Rd. located off Hwy. 5	0.03	7.21	0.03	0.67
	DR16 / Dugdemona River just past Restriction below Big Creek do	0.03	7.39	0.04	0.65
	DR19 / Dugdemona River Cypress Creek in Jackson-Bienville Wildl	0.05	6.59	0.04	0.89
	DR32 / Dugdemona River Little Dugdemona River @ Hwy. 167 betwee	0.05	9.07	0.07	1.33
	DR41 / Dugdemona River Big Creek @ LA 505 SW of Dodson	0.05	11.13	0.05	0.96
	DR5 / Dugdemona River @ Union Church Rd. (Parish Rd. 122)	0.03	6.72	0.04	0.52
	DR6 / Dugdemona River located just W. of Quitman	0.04	7.12	0.04	0.69
	DR7 / Dugdemona River located just W. of Hodge	0.05	9.32	0.03	0.87
	DR9 / Dugdemona River "In canal, upstream of Smurfit-Stone outf"	0.04	135.26	0.13	29.26
	DR25 / Dugdemona River Madden Creek/Redwine Creek @ Turner Rd.	0.03	6.72	0.03	0.85
081501	CC1 / Castor Creek @ Hwy. 124 above spillway	0.03	9.58	0.09	0.62
	CC2 / Castor Creek @ Hwy. 127	0.03	10.13	0.03	1.17
	CC3 / Castor Creek @ Hwy. 506	0.03	9.19	0.15	0.84
	CC4 / Castor Creek @ Hwy. 126	0.04	14.15	0.09	1.76
	CC5 / Castor Creek @ Hwy. 846	0.03	16.37	0.11	0.92
	CC6 / Castor Creek @ Hwy. 4	0.07	11.74	0.17	2.04
	CC7 / Castor Creek @ Hwy. 34	0.03	14.85	0.18	0.67
	CC8 / Castor Creek @ Chatham Cemetery Road	0.04	14.74	0.04	0.58
080907	TC12 / Turkey Creek unnamed tributary at Main Street	0.14	7.79	0.11	1.37
	TC13 / Turkey Creek Winsboro Municipal POTW effluent ditch	0.11	2.95	0.02	2.34
	TC15 / Turkey Creek Unnamed Trib #2 on Hwy. 865	0.10	2.25	0.13	0.96
	TC19 / Turkey Creek Unnamed Trib at Dummy Line Rd.	0.07	7.67	0.06	1.37
	TC2 / Turkey Creek @ Alice Shaw Rd.	0.08	8.35	0.07	1.48
	TC4 / Turkey Creek @ Hwy. 15	0.10	4.52	0.13	1.17
	TC6 / Turkey Creek @ Green Light Rd.	0.09	5.60	0.07	1.34
	TC9 / Turkey Creek @ Hwy. 128	0.08	6.50	0.09	1.60
	TC99 / Turkey Creek above dam	0.08	6.64	0.13	3.22
080901	LBR202 / Lower Boeuf River End of Peckerwood Rd. off Hwy. 561	0.10	8.50	0.06	1.78
	LBR204 / Lower Boeuf River Downstream of Muddy Bayou	0.07	13.41	0.06	2.40
	LBR205 / Lower Boeuf River Downstream of Big Creek	0.11	7.98	0.03	2.83

Subsegment	Sample Location	CBOD Decay (1/day)	CBODu (mg/L)	NBOD Decay (1/day)	NBODu (mg/L)
	LBR207 / Lower Boeuf River Downstream of Upper Goose Creek	0.11	12.98	0.06	3.47
	LBR209 / Lower Boeuf River Upstream of Bayou Marengo	0.12	16.26	0.06	3.87
	LBR211 / Lower Boeuf River Downstream of Bayou Lafourche Cutoff @ H	0.10	9.80	0.04	2.91
	LBR214 / Lower Boeuf River Downstream of Lower Eagle Creek	0.08	6.70	0.07	1.78
	LBR216 / Lower Boeuf River Downstream of Grassy and Big Grassy Bayou	0.08	5.47	0.05	1.49
	LBR218 / Lower Boeuf River Downstream of Lower Goose Creek	0.09	5.76	0.05	1.76
	LBR220 / Lower Boeuf River Downstream of Duck Creek	0.09	6.70	0.05	1.44
	LBR222 / Lower Boeuf River Upstream of Turkey Creek	0.08	6.77	0.07	1.58
	LBR224 / Lower Boeuf River Downstream of Deer Creek	0.08	5.83	0.04	1.70
	LBR226 / Lower Boeuf River Dave's Bayou: Upstream from Boeuf River	0.11	8.60	0.05	2.10
	LBR228 / Lower Boeuf River Big Creek: Upstream from Boeuf River	0.10	6.83	0.09	1.47
	LBR229 / Lower Boeuf River Upper Goose Creek: Upstream from Boeuf	0.14	42.65	0.06	12.62
	LBR231 / Lower Boeuf River Bayou Lafourche Cutoff: Upstream from B	0.10	6.52	0.06	1.89
	LBR232 / Lower Boeuf River Lower Eagle Creek: Upstream from Boeuf	0.09	8.44	0.10	2.18
	LBR233 / Lower Boeuf River Big Grassy Bayou: Upstream from Boeuf Ri	0.11	7.28	0.07	1.97
	LBR234 / Lower Boeuf River Grassy Bayou: Upstream from Boeuf River	0.08	5.67	0.03	2.08
	LBR237 / Lower Boeuf River Turkey Creek: Upstream from Boeuf River	0.08	7.44	0.05	1.86
	LBR238 / Lower Boeuf River Deer Creek: Upstream from Boeuf River	0.09	11.19	0.07	3.27
030806	HR1 / Houston River @ Edgerly Dequincy Rd.	0.04	11.96	0.38	1.14
	HR2 / Houston River @ Hwy. 27 #1	0.05	19.88	0.27	2.45
	HR2 / Houston River @ Hwy. 27 #2	0.05	19.16	0.17	2.54
	HR3 / Houston River ~ 500 yds. above confluence of West Fork	0.09	14.03	0.32	6.95
	HR4 / Houston River Buxton Creek on Route 66	0.04	9.77	0.09	0.98
030807	BCH1 / Bear Head Creek @ Hwy. 110 SE of Merryville	0.05	15.60	0.18	1.42
	BCH2 / Bear Head Creek @ Hwy. 109 SW of Singer	0.04	21.35	0.06	1.05
	BCH3 / Bear Head Creek @ Hwy. 389 E of Fields	0.06	18.37	0.17	1.71
	BCH4 / Bear Head Creek @ Green Island Rd. N of Starks	0.04	20.43	0.06	1.61
	BCH5 / Bear Head Creek @ Hwy. 12 NE of Starks	0.05	21.49	0.13	1.53
	BCH6 / Bear Head Creek @ Creek Rd.	0.04	14.90	0.09	1.29
080701	BDS1 / Bayou Desiard Bayou Bartholomew @ Lake Bartholomew pum	0.05	5.12	0.20	0.91
	BDS10 / Bayou Desiard Bayou Desiard @ Treasure Island Rd nr La	0.15	15.95	0.07	2.27
	BDS11 / Bayou Desiard Bayou Desiard @ overflow to Bayou Chauvi	0.07	12.80	0.10	2.05
	BDS13 / Bayou Desiard Bayou Desiard 200 ft to 300 ft downstrea	0.08	17.69	0.05	3.59
	BDS14 / Bayou Desiard Bayou Desiard @ Stadium Dr	0.07	18.35	0.09	3.81
	BDS15 / Bayou Desiard Bayou Desiard @ Phillips Bridge	0.07	13.17	0.20	3.84
	BDS16 / Bayou Desiard Hog Bayou outlet from Bayou Desiard	0.06	11.91	0.34	2.07
	BDS17 / Bayou Desiard Intake to the City of Monroe WTP	0.06	9.68	0.07	2.32
	BDS2 / Bayou Desiard Bayou Bartholomew @ Lake Bartholomew lak	0.08	7.05	0.09	1.52
	BDS20 / Bayou Desiard Control structure between Black Bayou La	0.06	17.95	0.11	2.25
	BDS21 / Bayou Desiard Hannah Run @ the control structure betwe	0.07	14.04	0.18	2.61
	BDS3 / Bayou Desiard Midpoint on Lake Bartholomew right fork	0.10	8.01	0.07	1.73
	BDS4 / Bayou Desiard Midpoint on Lake Bartholomew left fork	0.07	9.69	0.12	1.53
	BDS6 / Bayou Desiard Lake Bartholomew @ US 165 control struct	0.09	8.60	0.09	1.74
	BDS7 / Bayou Desiard Bayou Desiard @ US 165 control structure	0.10	13.78	0.09	2.88
	BDS8 / Bayou Desiard "Bayou Desiard @ LA 134 near Fairbanks, L"	0.11	17.41	0.34	2.78
	BDS9 / Bayou Desiard Bayou Desiard @ Richland Drive off US 16	0.08	12.10	0.06	2.43
080909	CL1 - N of Start, LA (Culverts at Conley Rd)	0.09	5.35	0.14	2.01
	CL1 - N of Start, LA (Culverts at Conley Rd)	0.09	5.83	0.15	2.09
	CL2 - N of Start, LA (@ Hwy 595 Bridge)	0.10	8.67	0.22	1.57
	CL3 - W of Start, LA (on Crew Lake Loop Rd)	0.11	8.24	0.09	2.01
	CL4 - Southwest of Start, LA (@ boat launch of	0.11	7.37	0.12	1.83
080903	Big Creek Survey Site 1 (A)	0.05	10.09	0.25	1.84
	Big Creek Survey Site 13 (A)	0.04	16.44	0.20	3.26
	Big Creek Survey Site 3 (A)	0.04	9.66	0.25	1.99
	Big Creek Survey Site 7 (A)	0.05	10.86	0.13	1.83
080903	Big Creek Survey Site 1 (B)	0.06	8.13	0.07	0.93
	Big Creek Survey Site 13 (B)	0.04	17.59	0.14	3.70
	Big Creek Survey Site 3 (B)	0.06	9.21	0.06	1.17
	Big Creek Survey Site 7 (B)	0.08	14.71	0.09	2.00
	Median	0.06	10.14	0.07	1.71
	Average	0.06	12.63	0.10	2.33
	Maximum	0.15	135.26	0.42	29.26
	Minimum	0.03	2.25	0.01	0.36
	Standard Deviation	0.03	12.04	0.08	2.95

FILE: R:\PROJECTS\2110-616\TECH\LDEQ SURVEYS\NITRIFIC RATES\NBOD DATA 2001-RRB.XLS

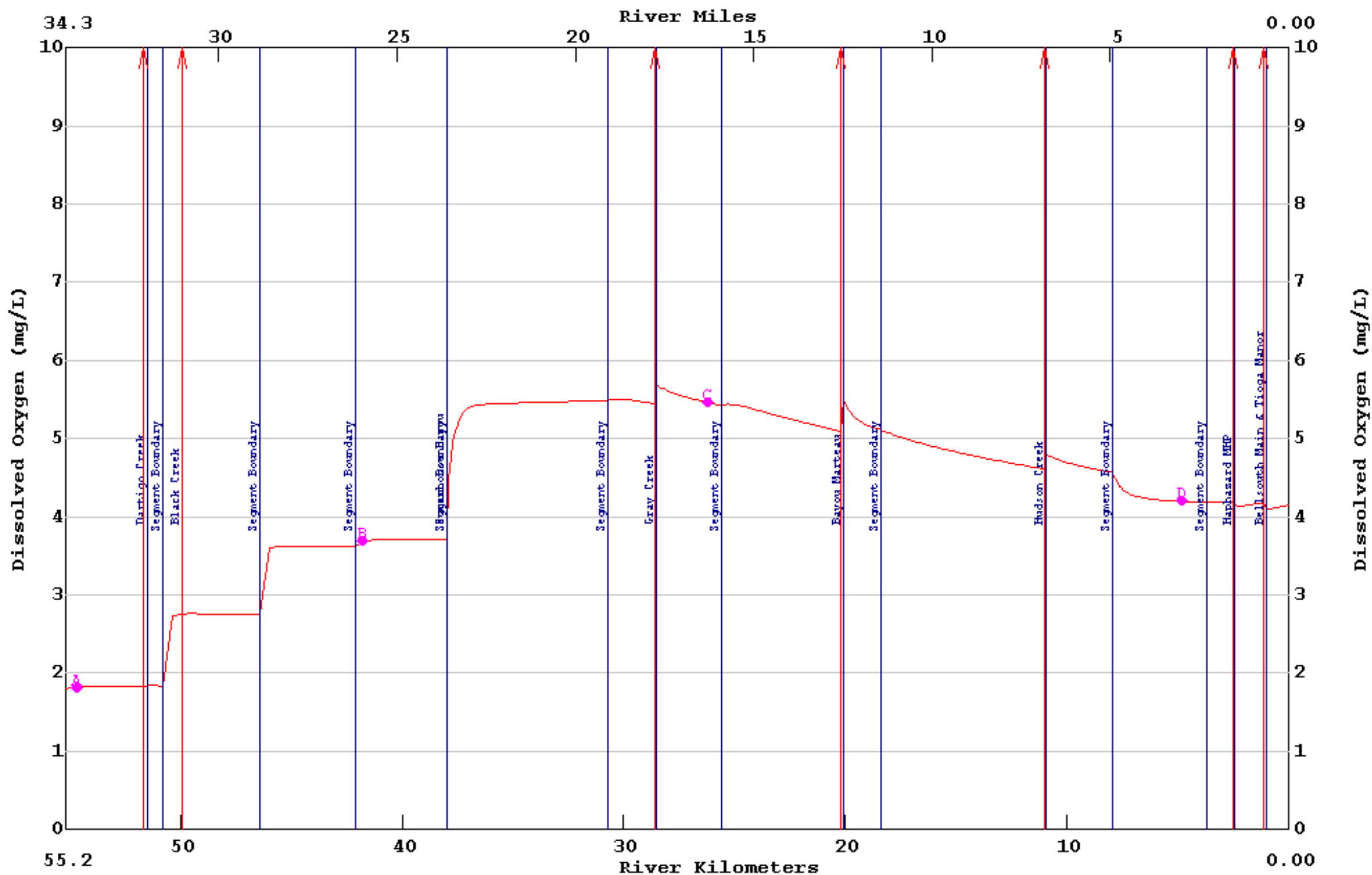
Table G.2. LDEQ Intensive Survey Data for Subsegments in the Ouachita and Calcasieu Basins With At Least 70% Forest.

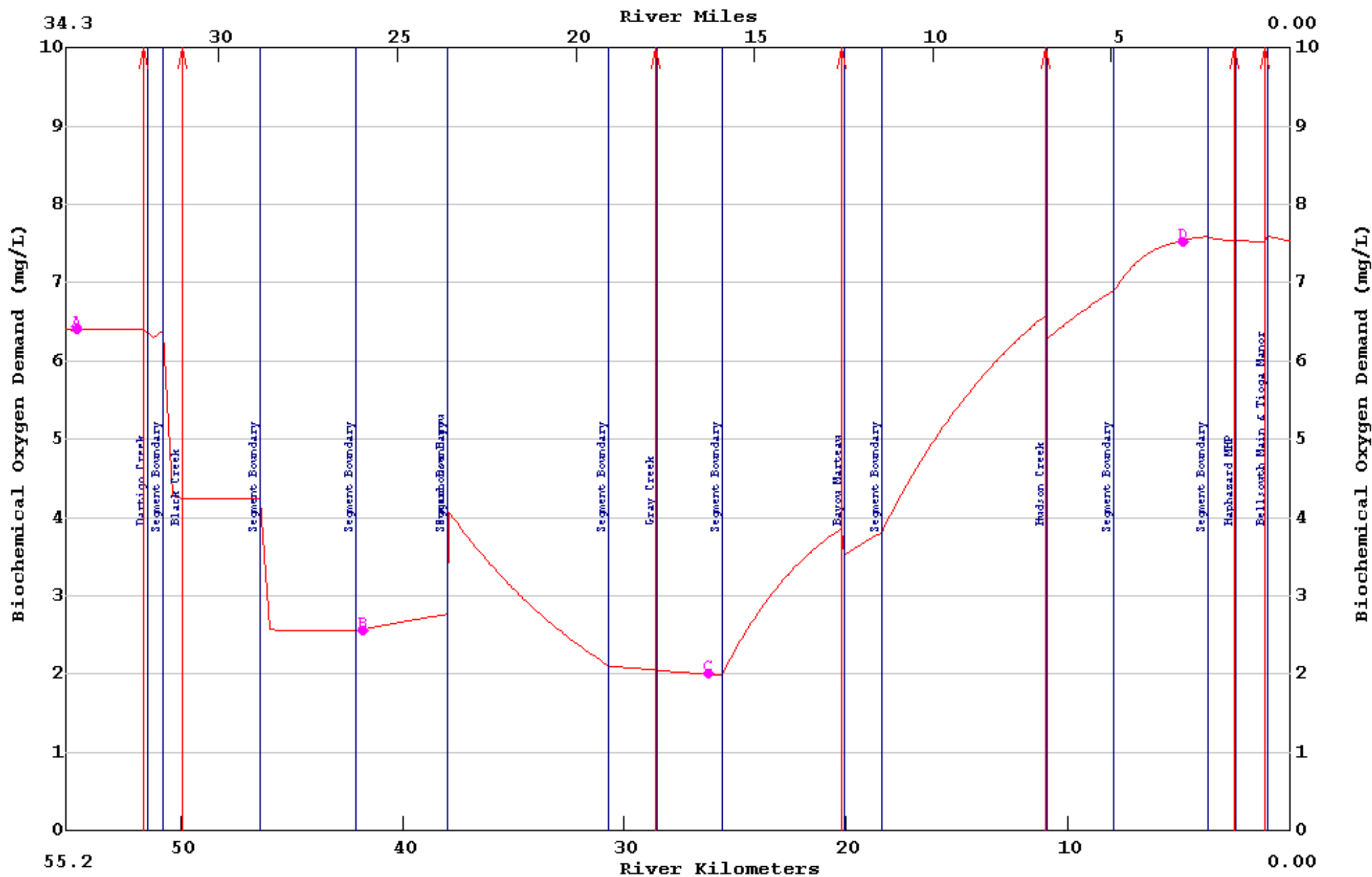
Subseg #	Sample No.	CBOD decay rate	UCBOD (mg/l)	Initial TOC (mg/l)	NBOD decay rate	UNBOD (mg/l)	Ratio CBODu / TOC
030401	Mill Creek @ Highway 112	0.07	6.49	6.10	0.06	1.20	1.06
	Mill Creek @ iron bridge	0.04	13.22	15.30	0.08	1.84	0.86
	Mill Creek @ Oakdale Road	0.06	5.49	7.80	0.06	0.80	0.70
	Mill Creek @ Tower Road	0.04	16.42	18.00	0.09	2.18	0.91
	Mill Creek Just above the confluence with Calcasieu	0.04	10.37	12.10	0.05	0.64	0.86
030807	BCH1 / Bear Head Creek @ Hwy. 110 SE of Merryville	0.05	15.60	10.80	0.18	1.42	1.44
	BCH2 / Bear Head Creek @ Hwy. 109 SW of Singer	0.04	21.35	15.90	0.06	1.05	1.34
	BCH3 / Bear Head Creek @ Hwy. 389 E of Fields	0.06	18.37	17.90	0.17	1.71	1.03
	BCH4 / Bear Head Creek @ Green Island Rd. N of Starks	0.04	20.43	20.10	0.06	1.61	1.02
	BCH5 / Bear Head Creek @ Hwy. 12 NE of Starks	0.05	21.49	16.40	0.13	1.53	1.31
	BCH6 / Bear Head Creek @ Creek Rd.	0.04	14.90	2.00	0.09	1.29	7.45
081501	CC1 / Castor Creek @ Hwy. 124 above spillway	0.03	9.58	12.10	0.09	0.62	0.79
	CC2 / Castor Creek @ Hwy. 127	0.03	10.13	11.80	0.03	1.17	0.86
	CC3 / Castor Creek @ Hwy. 506	0.03	9.19	14.00	0.15	0.84	0.66
	CC4 / Castor Creek @ Hwy. 126	0.04	14.15	15.30	0.09	1.76	0.92
	CC5 / Castor Creek @ Hwy. 846	0.03	16.37	16.10	0.11	0.92	1.02
	CC6 / Castor Creek @ Hwy. 4	0.07	11.74	14.40	0.17	2.04	0.82
	CC7 / Castor Creek @ Hwy. 34	0.03	14.85	14.70	0.18	0.67	1.01
	CC8 / Castor Creek @ Chatham Cemetery Road	0.04	14.74	14.50	0.04	0.58	1.02
081401	DR10 / Dugdemona River Smurfit-Stone outfall canal sampling sit	0.05	37.90	29.00	0.10	5.87	1.31
	DR12 / Dugdemona River @ LA 4 located W. of Jonesboro	0.03	20.91	26.90	0.06	1.39	0.78
	DR13 / Dugdemona River @ Parish Rd. W of Evergreen Rd. S. of LA	0.03	13.83	22.60	0.05	0.91	0.61
	DR14 / Dugdemona River @ LA 126 located just E of Brewtons Mill	0.03	11.15	21.70	0.09	0.78	0.51
	DR15 / Dugdemona River @ Carter Crossing Rd. located off Hwy. 5	0.03	7.21	15.40	0.03	0.67	0.47
	DR16 / Dugdemona River just past Restriction below Big Creek do	0.03	7.39	14.40	0.04	0.65	0.51
	DR19 / Dugdemona River Cypress Creek in Jackson-Bienville Wildl	0.05	6.59	6.60	0.04	0.89	1.00
	DR32 / Dugdemona River Little Dugdemona River @ Hwy. 167 betwee	0.05	9.07	2.00	0.07	1.33	4.53
	DR41 / Dugdemona River Big Creek @ LA 505 SW of Dodson	0.05	11.13	12.00	0.05	0.96	0.93
	DR5 / Dugdemona River @ Union Church Rd. (Parish Rd. 122)	0.03	6.72	2.00	0.04	0.52	3.36
	DR6 / Dugdemona River located just W. of Quitman	0.04	7.12	8.00	0.04	0.69	0.89
	DR7 / Dugdemona River located just W. of Hodge	0.05	9.32	8.00	0.03	0.87	1.16
	DR9 / Dugdemona River "In canal, upstream of Smurfit-Stone outf"	0.04	135.26	51.30	0.13	29.26	2.64
	DR25 / Dugdemona River Madden Creek/Redwine Creek @ Turner Rd.	0.03	6.72	7.50	0.03	0.85	0.90
081504	FLCR1 / Flat Creek @ Hwy. 147	0.04	15.66	20.30	0.04	3.79	0.77
	FLCR2 / Flat Creek @ Hwy. 127	0.03	14.71	15.70	0.05	1.18	0.94
	FLCR3 / Flat Creek @ confluence with Castor Creek-- 3 miles	0.05	8.75	12.80	0.09	1.30	0.68
	Count	36	36	36	36	36	36
	Min	0.03	5.49	2.00	0.03	0.52	0.47
	Average	0.04	16.51	14.76	0.08	2.11	1.31
	Median	0.04	12.48	14.45	0.06	1.11	0.93
	Max	0.07	135.26	51.30	0.18	29.26	7.45

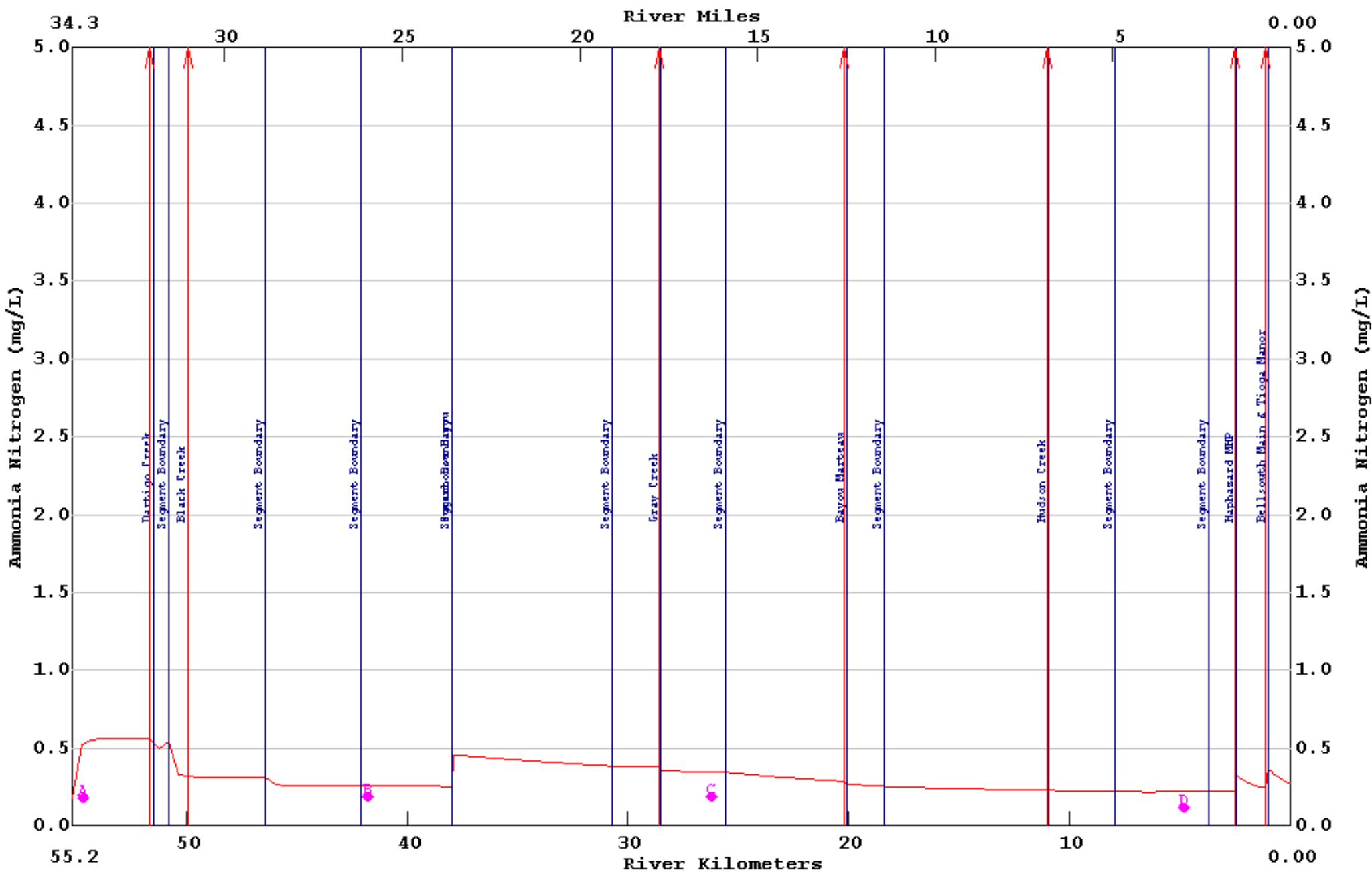
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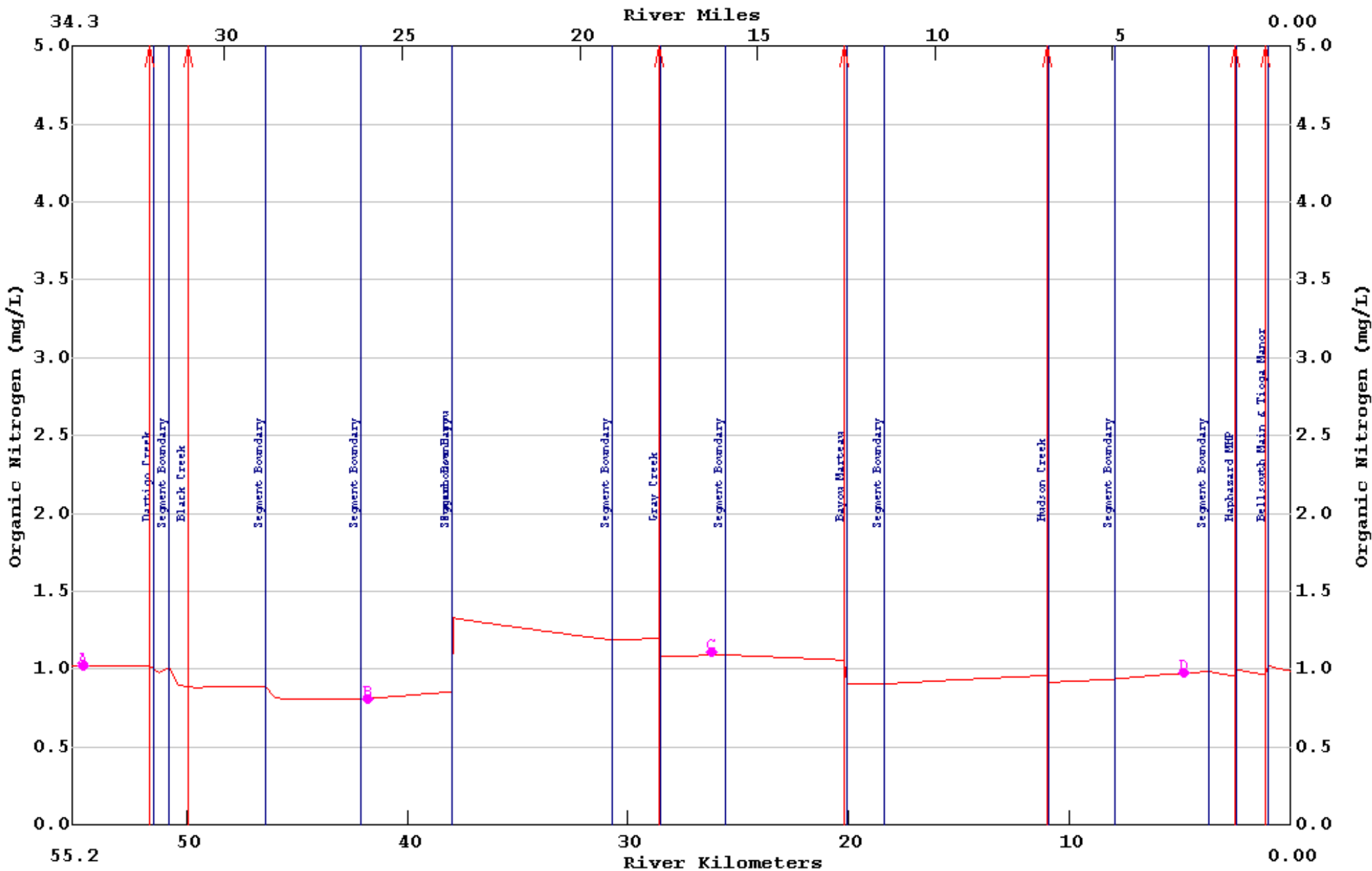
APPENDIX H

Plots of Predicted and Observed Water Quality









APPENDIX I

Printout of Model Output for Calibration

LA-QUAL Version 8.11
Louisiana Department of Environmental Quality

Input file is D:\laqual\Iatt Lake calib-rev.txt
Output produced at 11:57 on 03/03/2008

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

CARD TYPE	CONTROL TITLES		
TITLE01	LA-QUAL calibration for Lake Iatt and Bayou Rigolette		
TITLE02	Calibration run 1		
CNTIROL03	NO	SEQU	<Warning: legacy control - line ignored>
CNTIROL04	YES	METR	
CNTIROL05	YES	OXYG	<Warning: legacy control - line ignored>
ENDATA01			

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

CARD TYPE	MODEL OPTION	
MODEPT01	NO	TEMP
MODEPT02	NO	SALI
MODEPT03	NO	CONS
MODEPT04	NO	CONS
MODEPT05	YES	DISS
MODEPT06	YES	BIOC
MODEPT07	YES	NITR
MODEPT08	NO	PHOS
MODEPT09	NO	CHLO
MODEPT10	NO	MACR
MODEPT11	NO	COLI
MODEPT12	NO	NONC
ENDATA02		

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

CARD TYPE	DESCRIPTION OF CONSTANT		VALUE
PROGRAM	HYDRAULIC CALCULATION METHOD	=	2.00000 (widths and depths)
PROGRAM	MAXIMUM ITERATION LIMIT	=	500.00000
ENDATA03			

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

CARD TYPE	RATE CODE	THETA VALUE
THETA	NH3 DECA	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	L1	Lake Iatt	55.20	TO 50.80	0.4400	4.40	10	1	10
REACH ID	2	L2	Lake Iatt	50.80	TO 46.40	0.4400	4.40	10	11	20
REACH ID	3	L3	Lake Iatt	46.40	TO 42.10	0.4300	4.30	10	21	30
REACH ID	4	R1	Rigolette Bayou	42.10	TO 38.00	0.1000	4.10	41	31	71
REACH ID	5	S1	Sugarhouse Bayou	1.70	TO 0.00	0.1000	1.70	17	72	88
REACH ID	6	R2	Rigolette Bayou	38.00	TO 30.70	0.1000	7.30	73	89	161
REACH ID	7	R3	Rigolette Bayou	30.70	TO 25.60	0.1000	5.10	51	162	212
REACH ID	8	R4	Rigolette Bayou	25.60	TO 18.40	0.1000	7.20	72	213	284
REACH ID	9	R5	Rigolette Bayou	18.40	TO 7.90	0.1000	10.50	105	285	389
REACH ID	10	R6	Rigolette Bayou	7.90	TO 3.70	0.1000	4.20	42	390	431
REACH ID	11	R7	Rigolette Bayou	3.70	TO 0.00	0.1000	3.70	37	432	468
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	L1	0.000	0.000	1483.000	0.000	0.000	1.000	0.00000	0.000
HYDR-1	2	L2	0.000	0.000	2360.000	0.000	0.000	1.500	0.00000	0.000
HYDR-1	3	L3	0.000	0.000	2257.000	0.000	0.000	2.000	0.00000	0.000
HYDR-1	4	R1	0.000	0.000	16.000	0.000	0.000	0.240	0.00000	0.000
HYDR-1	5	S1	0.000	0.000	21.590	0.000	0.000	0.240	0.00000	0.000
HYDR-1	6	R2	0.000	0.000	29.400	0.000	0.000	0.240	0.00000	0.000
HYDR-1	7	R3	0.000	0.000	11.100	0.000	0.000	0.240	0.00000	0.000
HYDR-1	8	R4	0.000	0.000	23.200	0.000	0.000	0.580	0.00000	0.000
HYDR-1	9	R5	0.000	0.000	10.800	0.000	0.000	0.940	0.00000	0.000

HYDR-1	10	R6	0.000	0.000	47.700	0.000	0.000	1.280	0.00000	0.000
HYDR-1	11	R7	0.000	0.000	97.500	0.000	0.000	1.280	0.00000	0.000

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

CARD TYPE	REACH	ID	TIDAL RANGE	DISPERSION "A"	DISPERSION "B"	DISPERSION "C"	DISPERSION "D"
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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	L1	24.20	0.00	1.82	0.18	0.00	0.00	0.00	0.00
INITIAL	2	L2	24.20	0.00	1.82	0.18	0.00	0.00	0.00	0.00
INITIAL	3	L3	24.20	0.00	1.82	0.18	0.00	0.00	0.00	0.00
INITIAL	4	R1	24.20	0.00	5.47	0.19	0.00	0.00	0.00	0.00
INITIAL	5	S1	24.20	0.00	5.47	0.19	0.00	0.00	0.00	0.00
INITIAL	6	R2	24.20	0.00	5.47	0.19	0.00	0.00	0.00	0.00
INITIAL	7	R3	24.20	0.00	5.47	0.19	0.00	0.00	0.00	0.00
INITIAL	8	R4	25.30	0.00	5.01	0.17	0.00	0.00	0.00	0.00
INITIAL	9	R5	26.70	0.00	4.40	0.14	0.00	0.00	0.00	0.00
INITIAL	10	R6	27.40	0.00	4.10	0.12	0.00	0.00	0.00	0.00
INITIAL	11	R7	27.40	0.00	4.10	0.12	0.00	0.00	0.00	0.00

ENDATA11

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

CARD TYPE	RCH NUM	RCH ID	K2 OPT	K2 "A"	K2 "B"	K2 "C"	BKGRND SOD	BOD DECATY	BOD SEIT	BOD CONV TO SOD	ANAER BOD2 DECATY	BOD2 DECATY	BOD2 SEIT	BOD2 CONV TO SOD	ANAER BOD2 DECATY
							g/m ² /d	per day	m/d		per day	per day	m/d		per day
COEFF-1	1	L1	20 K2=a/D	0.700	0.000	0.000	3.200	0.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	2	L2	20 K2=a/D	0.700	0.000	0.000	2.300	0.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	3	L3	20 K2=a/D	0.700	0.000	0.000	1.950	0.150	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	4	R1	15 LOUISIANA	0.000	0.000	0.000	3.250	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	5	S1	15 LOUISIANA	0.000	0.000	0.000	1.900	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	6	R2	15 LOUISIANA	0.000	0.000	0.000	1.900	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	7	R3	15 LOUISIANA	0.000	0.000	0.000	2.450	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	8	R4	15 LOUISIANA	0.000	0.000	0.000	1.500	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	9	R5	15 LOUISIANA	0.000	0.000	0.000	1.500	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	10	R6	15 LOUISIANA	0.000	0.000	0.000	1.120	0.080	0.000	0.000	0.000	0.000	0.000	0.000	0.000
COEFF-1	11	R7	15 LOUISIANA	0.000	0.000	0.000	1.120	0.080	0.000	0.000	0.000	0.000	0.000	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
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			DECA	SETT	TO NH3 SRCE	DECA	SRCE	SRCE	RATE
COEFF-2	1	L1	0.020	0.000	1.000	0.060	0.000	0.000	0.000
COEFF-2	2	L2	0.020	0.000	1.000	0.060	0.000	0.000	0.000
COEFF-2	3	L3	0.020	0.000	1.000	0.060	0.000	0.000	0.000
COEFF-2	4	R1	0.020	0.000	1.000	0.070	0.000	0.000	0.000
COEFF-2	5	S1	0.020	0.000	1.000	0.070	0.000	0.000	0.000
COEFF-2	6	R2	0.020	0.000	1.000	0.070	0.000	0.000	0.000
COEFF-2	7	R3	0.020	0.000	1.000	0.070	0.000	0.000	0.000
COEFF-2	8	R4	0.020	0.000	1.000	0.070	0.000	0.000	0.000
COEFF-2	9	R5	0.020	0.000	1.000	0.070	0.000	0.000	0.000
COEFF-2	10	R6	0.020	0.000	1.000	0.070	0.000	0.000	0.000
COEFF-2	11	R7	0.020	0.000	1.000	0.070	0.000	0.000	0.000

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	SHADING
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ENDATA14

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

CARD TYPE	REACH	ID	COLIFORM DIE-OFF	NCM DECAY	NCM SETT	NCM CONV TO SOD
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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
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ENDATA16

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

CARD TYPE	REACH	ID	DO	BOD	ORG-N	NH3-N	NO3-N	BOD#2
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ENDATA17

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

CARD TYPE	REACH	ID	PHOS	CHL A	COLI	NCM
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ENDATA18

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

CARD TYPE	REACH	ID	BOD#1	ORG-N	COLI	NCM	DO	BOD#2
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NONPOINT	1	L1	6950.00	145.00	0.00	0.00	0.00	0.00
NONPOINT	2	L2	12000.00	300.00	0.00	0.00	0.00	0.00
NONPOINT	3	L3	9000.00	340.00	0.00	0.00	0.00	0.00
NONPOINT	4	R1	5.00	0.50	0.00	0.00	0.00	0.00
NONPOINT	5	S1	5.00	0.50	0.00	0.00	0.00	0.00
NONPOINT	6	R2	2.00	0.50	0.00	0.00	0.00	0.00
NONPOINT	7	R3	2.00	0.50	0.00	0.00	0.00	0.00
NONPOINT	8	R4	50.00	2.00	0.00	0.00	0.00	0.00
NONPOINT	9	R5	100.00	3.00	0.00	0.00	0.00	0.00
NONPOINT	10	R6	220.00	6.20	0.00	0.00	0.00	0.00
NONPOINT	11	R7	390.00	9.50	0.00	0.00	0.00	0.00

ENDATA19

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

CARD TYPE	ELEMENT	NAME	UNIT	FLOW m ³ /s	FLOW cfs	TEMP deg C	SALIN ppt	CM-I	CM-II	
HDWIR-1	1	Iatt Creek @ 101302-	0	0.02400	0.847	24.20	0.00	0.000	0.000	0.00
HDWIR-1	72	Sugarhouse Bayou	0	0.01060	0.374	24.20	0.00	0.000	0.000	0.00

ENDATA20

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

CARD TYPE	ELEMENT	NAME	DO mg/L	BOD#1 mg/L	ORG-N mg/L	NH3-N mg/L	NO3-N mg/L	BOD#2 mg/L
HDWIR-2	1	Iatt Creek @ 101302-	1.80	6.41	1.02	0.18	0.05	45.00
HDWIR-2	72	Sugarhouse Bayou	5.50	1.00	1.11	0.19	0.02	5.00

ENDATA21

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

CARD TYPE	ELEMENT	NAME	PHOS mg/L	CHL A mg/L	COLI mg/L	NCM mg/L
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ENDATA22

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

CARD TYPE	JUNCTION ELEMENT	UPSTIRM ELEMENT	RIVER KILOM	NAME
JUNCTION	89	71	38.00	Sugarhouse Bayou

ENDATA23

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

CARD TYPE	ELEMENT	RKILO	NAME	FLOW	FLOW	FLOW	TEMP	SALIN	CM-I	CM-II
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				m ³ /s	cfs	MGD	deg C	ppt		
WSTLD-1	9	51.68	NPS Dartigo Creek	0.01760	0.62147	0.402	20.30	0.00	0.000	0.000
WSTLD-1	13	49.92	NPS Black Creek	0.00880	0.31073	0.201	20.30	0.00	0.000	0.000
WSTLD-1	72	1.70	Colfax STP	0.01300	0.45904	0.297	24.20	0.00	0.000	0.000
WSTLD-1	183	28.60	NPS Gray Creek	0.01123	0.39661	0.256	21.70	0.00	0.000	0.000
WSTLD-1	267	20.20	NPS Bayou Marteau	0.02156	0.76130	0.492	21.70	0.00	0.000	0.000
WSTLD-1	359	11.00	NPS Hudson Creek	0.00790	0.27895	0.180	21.70	0.00	0.000	0.000
WSTLD-1	458	1.10	Tioga Manor Nursing	0.00175	0.06194	0.040	21.70	0.00	0.000	0.000
WSTLD-1	458	1.10	Bellsouth Tioga Main	0.00000	0.00007	0.000	21.70	0.00	0.000	0.000

ENDATA24

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

CARD TYPE	ELEMENT	NAME			% BOD					
			DO	BOD	RMVL	ORG-N	NH3-N	NITRIF	NO3-N	BOD#2
			mg/L	mg/L		mg/L	mg/L		mg/L	mg/L
WSTLD-2	9	NPS Dartigo Creek	8.30	2.00	0.00	0.50	0.10	0.00	0.10	0.00
WSTLD-2	13	NPS Black Creek	8.30	2.00	0.00	0.50	0.10	0.00	0.10	0.00
WSTLD-2	72	Colfax STP	5.00	12.90	0.00	3.30	1.70	0.00	0.30	0.00
WSTLD-2	183	NPS Gray Creek	7.50	2.00	0.00	0.30	0.20	0.00	0.00	0.00
WSTLD-2	267	NPS Bayou Marteau	7.50	2.00	0.00	0.30	0.20	0.00	0.00	0.00
WSTLD-2	359	NPS Hudson Creek	7.50	2.00	0.00	0.30	0.20	0.00	0.00	0.00
WSTLD-2	458	Tioga Manor Nursing	2.00	13.80	0.00	5.00	10.00	0.00	0.30	0.00
WSTLD-2	458	Bellsouth Tioga Main	2.00	13.80	0.00	5.00	10.00	0.00	0.30	0.00

ENDATA25

\$\$\$ DATA TYPE 26 (WASTELOAD DATA FOR PHOSPHORUS, CHLOROPHYLL, COLIFORM, AND NONCONSERVATIVES) \$\$\$

CARD TYPE	ELEMENT	NAME	PHOS	CHL A	COLI	NCM
			mg/L	mg/L	mg/L	mg/L

ENDATA26

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

CARD TYPE	CONSTITUENT	CONCENTRATION
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ENDATA27

\$\$\$ DATA TYPE 28 (DAM DATA) \$\$\$

CARD TYPE	ELEMENT	NAME	EQN	"A"	"B"	"H"
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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
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ENDATA29

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

NUMBER OF PLOTS = 1
NUMBER OF REACHES IN PLOT 1 = 10
PLOT RCH 1 2 3 4 6 7 8 9 10 11
ENDATA30

\$\$\$ DATA TYPE 31 (OVERLAY PLOT DATA) \$\$\$

OVERLAY 1 IATTLAKE.ovl :Iatt Lake
ENDATA31

.....NO ERRORS DETECTED IN INPUT DATA
.....HYDRAULIC CALCULATIONS COMPLETED
.....TRIDIAGONAL MATRIX TERMS INITIALIZED
.....OXYGEN DEPENDENT RATES CONVERGENT IN 49 ITERATIONS
.....CONSTITUENT CALCULATIONS COMPLETED
.....GRAPHICS DATA FOR PLOT 1 WRITTEN TO UNIT 11

STREAM SUMMARY
Iatt Creek @ 101302-

LA-QUAL calibration for Lake Iatt and Bayou Rigolette
Calibration run 1

TRAVEL TIME	=	11175.97	DAYS	
MAXIMUM EFFLUENT	=	70.29	PERCENT	
FLOW	=	0.02400	TO	0.11645 m ³ /s
DISPERSION	=	0.0000	TO	0.0000 m ² /s
VELOCITY	=	0.00001	TO	0.03199 m/s
DEPTH	=	0.24	TO	2.00 m
WIDTH	=	10.80	TO	***** m
BOD DECAY	=	0.10	TO	0.18 per day
NH3 DECAY	=	0.04	TO	0.10 per day
SOD	=	1.78	TO	4.23 g/m ² /d
NH3 SOURCE	=	0.00	TO	0.00 g/m ² /d
REAERATION	=	0.38	TO	5.17 per day
BOD SETTLING	=	0.00	TO	0.00 per day
ORG-N DECAY	=	0.02	TO	0.02 per day
ORG-N SETTLING	=	0.00	TO	0.00 per day
TEMPERATURE	=	24.20	TO	27.40 deg C
DISSOLVED OXYGEN	=	1.83	TO	5.69 mg/L

STREAM SUMMARY
Sugarhouse Bayou

LA-QUAL calibration for Lake Iatt and Bayou Rigolette
Calibration run 1

TRAVEL TIME	=	4.32	DAYS	
MAXIMUM EFFLUENT	=	55.08	PERCENT	
FLOW	=	0.02360	TO	0.02360 m ³ /s
DISPERSION	=	0.0000	TO	0.0000 m ² /s
VELOCITY	=	0.00455	TO	0.00455 m/s
DEPTH	=	0.24	TO	0.24 m
WIDTH	=	21.59	TO	21.59 m
BOD DECAY	=	0.10	TO	0.10 per day
NH3 DECAY	=	0.08	TO	0.09 per day
SOD	=	2.48	TO	2.48 g/m ² /d
NH3 SOURCE	=	0.00	TO	0.00 g/m ² /d
REAERATION	=	3.29	TO	3.29 per day
BOD SETTLING	=	0.00	TO	0.00 per day
ORG-N DECAY	=	0.02	TO	0.02 per day
ORG-N SETTLING	=	0.00	TO	0.00 per day
TEMPERATURE	=	24.20	TO	24.20 deg C
DISSOLVED OXYGEN	=	4.93	TO	5.09 mg/L

LA-QUAL calibration for Lake Iatt and Bayou Rigolette
 Calibration run 1

INPUT/OUTPUT LOADING SUMMARY

	FLOW m ³ /s	DO kg/d	BOD#1 kg/d	BOD#2 kg/d	ORG-N kg/d	NH3-N kg/d	NO3-N kg/d	PHOS kg/d	CHL A	NCM
HEADWATER FLOW	0.035	8.8	14.2	0.0	3.1	0.5	0.1	0.0	0.0	0.0
INCREMENTAL INFLOW	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
INCREMENTAL OUTFLOW	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
WASTELOADS	0.082	51.2	28.2	0.0	6.7	4.4	0.6	0.0	0.0	0.0
WITHDRAWALS	0.000	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
FLOW THRU LOWER BNDRY	-0.116	-41.8	-75.8	0.0	-9.7	-2.6	-810.8	0.0	0.0	0.0
DISPERSION THRU LOWER BNDRY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
DISPERSION THRU HDWTR BNDRY		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
NON-POINT INPUT		0.0	28724.1	0.0	807.7					0.0
NATURAL REAERATION		115526.0								
DAM REAERATION		0.0								
BACKGROUND SOD		-83397.2								
BOD#1 DECAY		-28691.3	-28691.3							
BOD#1 SETTLING		0.0	0.0							
ANAEROBIC BOD#1 DECAY			0.0							
BOD#2 DECAY		0.0		0.0						
BOD#2 SETTLING		0.0		0.0						
ANAEROBIC BOD#2 DECAY				0.0						
ORG-N DECAY		0.0			-807.8	807.8				
ORG-N SETTLING					0.0	0.0				
NH3 DECAY		-3507.6				-810.1	810.1			
BACKGROUND NH3 SOURCE						0.0				
OTHER DENITRIFICATION							0.0			
PHOSPHORUS SOURCE								0.0		
ALGAE PHOTOSYNTHESIS		0.0				0.0	0.0	0.0	0.0	
ALGAE RESPIRATION		0.0				0.0		0.0	0.0	
ALGAE SETTLING		0.0							0.0	
MACRO PHOTOSYNTHESIS		0.0				0.0	0.0	0.0		
NCM DECAY		0.0								0.0
NCM SETTLING		0.0								0.0
TOTAL INPUTS	0.116	115586.0	28766.5	0.0	817.5	812.7	810.8	0.0	0.0	0.0
TOTAL OUTPUTS	-0.116	-115637.9	-28767.1	0.0	-817.5	-812.7	-810.8	0.0	0.0	0.0
NET CONVERGENCE ERROR	0.000	-51.9	-0.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0

.....EXECUTION COMPLETED

APPENDIX J

90th Percentile Temperature Calculations

Table J.1. Calculations for 90th percentile temperatures for Flat River east of Taylortown, Louisiana (LDEQ 272)

Summer 90th percentile = 29.33 C, interpolated using highlighted values below
 Winter 90th percentile = 20.78 C, interpolated using highlighted values below

Water				Water			
Date	Temp (C)	Season	Percentile	Date	Temp (C)	Season	Percentile
10/15/02	16.75	summer	1.67%	12/11/95	6.01	winter	1.61%
10/11/94	17.16	summer	5.00%	2/14/95	7.74	winter	4.84%
10/14/97	17.96	summer	8.33%	12/13/94	8.34	winter	8.06%
10/11/93	18.55	summer	11.67%	2/18/97	9.66	winter	11.29%
10/9/95	19.10	summer	15.00%	2/13/96	10.72	winter	14.52%
10/15/96	20.29	summer	18.33%	12/9/97	11.06	winter	17.74%
10/16/90	21.00	summer	21.67%	1/15/02	11.21	winter	20.97%
10/12/92	21.90	summer	25.00%	2/10/92	11.36	winter	24.19%
10/14/91	23.11	summer	28.33%	12/14/93	11.77	winter	27.42%
6/12/95	23.43	summer	31.67%	12/10/90	12.00	winter	30.65%
5/14/02	23.62	summer	35.00%	12/9/96	12.39	winter	33.87%
8/8/94	23.92	summer	38.33%	11/18/02	12.46	winter	37.10%
6/10/96	24.50	summer	41.67%	12/14/92	12.60	winter	40.32%
9/17/02	24.64	summer	45.00%	2/4/91	13.50	winter	43.55%
8/13/91	25.05	summer	48.33%	2/19/02	13.81	winter	46.77%
6/11/91	25.26	summer	51.67%	2/10/98	14.39	winter	50.00%
6/9/97	26.01	summer	55.00%	2/12/90	15.30	winter	53.23%
8/14/90	26.10	summer	58.33%	4/9/02	16.27	winter	56.45%
6/14/93	26.15	summer	61.67%	12/10/91	16.28	winter	59.68%
8/9/93	26.57	summer	65.00%	4/15/97	16.84	winter	62.90%
8/13/96	26.59	summer	68.33%	4/6/92	17.07	winter	66.13%
6/13/94	27.07	summer	71.67%	4/9/90	17.10	winter	69.35%
7/9/02	27.35	summer	75.00%	2/8/93	17.50	winter	72.58%
8/12/97	27.89	summer	78.33%	4/8/96	17.82	winter	75.81%
6/11/02	28.47	summer	81.67%	3/19/02	18.23	winter	79.03%
8/15/95	28.77	summer	85.00%	4/4/95	18.30	winter	82.26%
8/5/02	28.96	summer	88.33%	2/8/94	18.90	winter	85.48%
8/11/92	29.70	summer	91.67%	4/12/94	20.56	winter	88.71%
6/11/90	31.00	summer	95.00%	4/16/91	21.10	winter	91.94%
6/15/92	31.97	summer	98.33%	4/13/93	21.54	winter	95.16%
				4/14/98	21.68	winter	98.39%

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Table J.2. Calculations for 90th percentile temperatures for Rigolette Bayou northwest of Pineville, Louisiana (LDEQ 1220)

Rigolette Bayou (LDEQ 1220) Water			Flat River (LDEQ 272) Water		
Date	Temp (C)	Season	Date	Temp (C)	Season
22-Jan-02	3.88	winter	15-Jan-02	11.21	winter
18-Feb-02	11.90	winter	19-Feb-02	13.81	winter
26-Mar-02	16.65	winter	19-Mar-02	18.23	winter
16-Apr-02	41.91	winter	9-Apr-02	16.27	winter
21-May-02	23.36	summer	14-May-02	23.62	summer
18-Jun-02	28.20	summer	11-Jun-02	28.47	summer
22-Jul-02	31.08	summer	9-Jul-02	27.35	summer
20-Aug-02	29.90	summer	5-Aug-02	28.96	summer
24-Sep-02	18.00	summer	17-Sep-02	24.64	summer
22-Oct-02	18.60	summer	15-Oct-02	16.75	summer
18-Nov-02	13.77	winter	18-Nov-02	12.46	winter
17-Dec-02	10.97	winter			

SUMMER

Averages for May through October (LTP definition of summer)
Rigolette Bayou: 24.86 C
Flat River: 24.97 C

Difference between stations = -0.11 C

From Table J1, 90th percentile summer temp for Flat River = 29.33 C

Adjusted 90th percentile temp for Rigolette Bayou = 29.33 - 0.11 = 29.22 C

WINTER

Averages for Jan-April and Nov-Dec (LTP definition of winter)
Rigolette Bayou: 16.51 C
Flat River: 14.40 C

Difference between stations = 2.12 C

From Table J1, 90th percentile winter temp for Flat River = 20.78 C

Adjusted 90th percentile temp for Rigolette Bayou = 20.78 + 2.12 = 22.89 C

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Table J.3. 90th percentile temperatures calculated for Lake Bistineau Spillway west of Ringgold, Louisiana (LDEQ 275)

Summer 90th Percentile Temp = 31.19 C, interpolated from values highlighted below
 Winter 90th Percentile Temp = 19.285 C, interpolated from values highlighted below

Water				Water			
Date	Temp (C)	Season	Percentile	Date	Temp (C)	Season	Percentile
11-Oct-94	19.62	summer	1.67	14-Feb-95	7.3	winter	1.67
15-Oct-02	20.43	summer	5.00	11-Dec-95	8.66	winter	5.00
11-Oct-93	21.15	summer	8.33	15-Jan-02	9.49	winter	8.33
15-Oct-96	21.54	summer	11.67	14-Dec-92	10.1	winter	11.67
14-Oct-97	21.79	summer	15.00	13-Feb-96	10.19	winter	15.00
13-Oct-92	21.9	summer	18.33	18-Feb-97	10.42	winter	18.33
09-Oct-95	22.16	summer	21.67	10-Feb-92	10.78	winter	21.67
15-Oct-90	22.9	summer	25.00	10-Dec-90	11.4	winter	25.00
14-May-02	25.92	summer	28.33	13-Dec-94	11.63	winter	28.33
10-Jun-96	26.16	summer	31.67	09-Dec-97	11.67	winter	31.67
12-Jun-95	26.46	summer	35.00	14-Dec-93	12.15	winter	35.00
14-Oct-91	26.54	summer	38.33	09-Dec-96	12.24	winter	38.33
13-Jun-94	26.71	summer	41.67	19-Feb-02	12.84	winter	41.67
13-Aug-91	27.2	summer	45.00	10-Dec-91	12.94	winter	45.00
09-Jun-97	27.6	summer	48.33	10-Feb-98	13.36	winter	48.33
08-Aug-94	27.77	summer	51.67	04-Feb-91	13.6	winter	51.67
17-Sep-02	28.06	summer	55.00	08-Feb-93	13.6	winter	55.00
14-Aug-90	28.1	summer	58.33	19-Nov-02	13.97	winter	58.33
12-Aug-97	28.65	summer	61.67	08-Feb-94	15.5	winter	61.67
11-Jun-91	28.71	summer	65.00	12-Feb-90	15.6	winter	65.00
11-Jun-02	28.81	summer	68.33	19-Mar-02	15.87	winter	68.33
13-Aug-96	28.85	summer	71.67	08-Apr-96	16.19	winter	71.67
14-Jun-93	29.09	summer	75.00	06-Apr-92	16.74	winter	75.00
11-Jun-90	30.1	summer	78.33	09-Apr-02	17.17	winter	78.33
15-Aug-95	30.2	summer	81.67	15-Apr-97	17.5	winter	81.67
09-Aug-93	30.27	summer	85.00	13-Apr-93	18.38	winter	85.00
10-Aug-92	30.7	summer	88.33	09-Apr-90	18.4	winter	88.33
15-Jun-92	31.68	summer	91.67	12-Apr-94	20.17	winter	91.67
05-Aug-02	31.71	summer	95.00	14-Apr-98	23.43	winter	95.00
09-Jul-02	32.41	summer	98.33	16-Apr-91	26.1	winter	98.33

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Table J.4. Calculations for 90th percentile temperatures for Iatt Lake southwest of Fairfield, Louisiana (LDEQ 1221)

Iatt Lake (LDEQ 1221) Water			Lake Bistineau (LDEQ 275) Water		
Date	Temp (C)	Season	Date	Temp (C)	Season
28-Jan-02	24.88	winter	15-Jan-02	9.49	winter
25-Feb-02	13.87	winter	19-Feb-02	12.84	winter
25-Mar-02	16.35	winter	19-Mar-02	15.87	winter
15-Apr-02	40.96	winter	09-Apr-02	17.17	winter
20-May-02	20.93	summer	14-May-02	25.92	summer
17-Jun-02	26.90	summer	11-Jun-02	28.81	summer
22-Jul-02	60.60	summer	09-Jul-02	32.41	summer
19-Aug-02	27.90	summer	05-Aug-02	31.71	summer
23-Sep-02	23.84	summer	17-Sep-02	28.06	summer
21-Oct-02	19.46	summer	15-Oct-02	20.43	summer
19-Nov-02	13.92	winter	19-Nov-02	13.97	winter
16-Dec-02	10.70	winter			

SUMMER

Averages for May through October (LTP definition of summer)

29.94 C

27.89 C

Difference between stations = 2.05 C

From Table J3, 90th percentile summer temp for Lake Bistineau = 31.19 C

Adjusted 90th percentile temp for Iatt Lake = 31.19 + 2.05 = 33.24 C

WINTER

Averages for Jan-April and Nov-Dec (LTP definition of winter)

17.26 C

13.04 C

The value from Dec 16, 2002 was not used since 10.7 is outside of the range of values that overlap Lake Bistineau.

Difference between stations = 4.21 C

From Table J3, 90th percentile winter temp for Lake Bistineau = 19.29 C

Adjusted 90th percentile temp for Iatt Lake = 19.29 + 4.21 = 23.50 C

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