Analysis of Metals in Water, Stream Sediments and Floodplain Soils Collected March 21-23, 2005 from the Bayou Creek System

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INTRODUCTION

Water, stream sediments, and floodplain soils were collected for metal analyses from Big and Little Bayou Creeks on March 21-23, 2005. Water samples were taken from 11 stations on Big Bayou Creek (stations BB1A through BB9); five stations from Little Bayou Creek (stations LB1 through LB4); and effluents 001, 006, 008 and 010+011. The reference station at the west fork of Massac Creek (MC) also was sampled for water, stream sediments, and floodplain soils. Two sediment samples per station were collected for metal assays. A total of 29 metals (*i.e*. Ag, Al, As, B, Ba, Be, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Mo, Na, Ni, P, Pb, Sb, Se, Sn, Sr, Ti, Tl, V, and Zn) were determined for each sample.

METHODS

Water Collection

Samples for water quality measurements were collected in 1-L "Cubitainer" receptacles and were placed on ice until delivery to the laboratory. Water samples for metal assays were collected in acid-cleaned 250-mL polyethylene bottles. Samples were preserved with concentrated HNO_3 upon collection and analyzed for total recoverable (TR) metals.

Sediments and Floodplain Soils Collection

Stream sediment samples were restricted to the upper 5-10 cm of sediment soil, including depositional areas when found. Floodplain soils were collected within 10 m of the shoreline (5-10 cm deep) in areas where flood debris was

present. Any surface vegetation was removed prior to sampling floodplain soils. All sediment and floodplain samples were collected in acetone-rinsed 0.47 L glass jars with Teflon-lined lids. Stainless steel spoons and scoops used for collections were acetone-rinsed between sampling stations.

Water Quality

On-site water quality measurements, which included temperature, pH, dissolved oxygen, and conductivity, were taken with a YSI 650 MDS meter and a YSI 600 QS multi-parameter sonde. Alkalinity and hardness were measured according to procedures described by American Public Health Association (APHA-1995), for bromocresol green-methyl red titrimetric and EDTA titrimetric procedures, respectively.

Metal Digestions and Determinations

Acidified water samples were analyzed directly for total recoverable (TR) metals. Sediment and floodplain soil samples were digested according to procedures described in EPA Method 3050B and ASTM Method D 3974-81 (ASTM, 1989: U.S. EPA, 1997) and previously described by Birge and Price (2001). Metal analysis was performed using a Varian Vista-MPX simultaneous Inductively Coupled Plasma-Optical Emission Spectrophotometer (ICP-OES) and a Varian Model Spectra AA-20 graphite furnace Atomic Absorption Spectrophotometer (AAS) as described by U.S. EPA (1997). All gases used were ultra pure carrier grade. Calibration curves were based on at least five standards. Instrument blanks (0.5% HNO_3) and check standards were processed with all

samples. Sample concentrations were then corrected for deviations from the standards and sample weights were factored into the calculations of final values.

Quality Assurance

Permanent bench records were kept of all assays and annotated as required under Good Laboratory Practices (*Federal Register*, 1989). All printouts and graphic recordings were filed and are open for inspection. These bench records will be archived within two years after the close of the project but retrievable upon request.

RESULTS

General Water Quality

The results for general water quality parameters are given in Table 1. Overall, temperature, pH, and dissolved oxygen were within expected parameters. The pH for Big Bayou Creek ranged from 7.16 to 8.75, and dissolved oxygen ranged from 8.08 to 13.91 mg/L. High conductivity and hardness were observed for effluent 001 with values of 1197 µS/cm and 296 mg $CaCO_3$/L, respectively. Consistent with previous studies (Birge and Price, 2005a,b), effluent 001 accounted for elevated conductivity and hardness observed in downstream stations BB6 through BB9. Similar to results obtained in the past, alkalinity was in the low to moderate range and varied from 60 to 120 mg $CaCO_3$/L in both Big Bayou and Little Bayou creeks.

Metals in Stream Water

Metal concentrations in water samples from Big Bayou and Little Bayou creeks are presented in Tables 2 and 3, respectively. Silver (Ag) was only detected in water samples from stations BB6 through BB9, with highest Ag found in effluent 001 (6.09 µg/L). Silver was not detected at any of the stations in Little Bayou creek (Table 3). Aluminum (Al) in Big Bayou creek was fairly constant with values lower than those observed in March 2004 (Birge and Price, 2005b). In Little Bayou creek, Al was highest for station LB1 (205.6 µg/L). Water arsenic (As), beryllium (Be), antimony (Sb), selenium (Se), strontium (Sr), and thallium (Tl) were not detected at any of the stations in Big and Little Bayou creeks. As observed in the past, calcium (Ca), potassium (K), magnesium (Mg), sodium (Na), nickel (Ni) and phosphorous (P) were elevated at station BB6 through BB9. Chromium (Cr) was somewhat elevated at stations BB5-BB9, with values ranging from 1.03 to 1.21 µg/L. Copper (Cu) was highest for stations BB4 and BB7, with values of 9.38 and 9.05 µg/L, respectively. Elevated Cu values were also detected in effluent s 001 and 008 (21.32 and 25.35 µg/L, respectively). Although water Cu was high in effluent 010+011 (70.63 µg/L), increased Cu levels were not observed in Little Bayou creek. Concentrations of water iron (Fe) were fairly constant and the values were similar to results obtained in March 2004 (Birge and Price, 2005b). Consistent with past results, station LB1 in Little Bayou creek had the highest concentration of water Fe. Lead (Pb) was detected in almost all stations in Big Bayou creek, with values ranging from 1.13 to 2.42 µg/L. In Little Bayou creek, water Pb was highest for

station LB2 (2.27 µg/L). Water concentrations of zinc (Zn) were highest for stations BB4 (11.65 µg/L), BB6 (12.46 µg/L), and effluent 008 (32.95 µg/L) in Big Bayou creek. The highest water Zn in Little Bayou creek was found in effluent 010+011 (55.17 µg/L) and station LB1 (38.08 µg/L). In March 2004 water Zn in effluent 010+011 was 21.30 µg/L and in station LB1 was 30.70 µg/L (Birge and Price, 2005b).

Metals in Sediments and Floodplain soils

A. Big Bayou Creek

Results for metal concentrations of individual assays of sediment and floodplain soils from Big Bayou Creek are given in Tables A1 and A3, whereas mean metal concentrations are given in Tables 4 and 6. Sediment and floodplain soil Ag, Mo, and Se were not detected at any of the stations sampled in Big Bayou creek. Aluminum values ranged from 877.21 to 3431.8 µg/g in sediments and from 1770.2 to 4706.4 µg/g in floodplain soils. Boron (B) was only detected at the reference station in Massac creek for both sediments and floodplain soils. Sediment concentrations for Ba, Be, Cd, Co, Cr, Cu, Fe, K, Mn, Ni, Pb, Sb, Si, Sn, Sr, Ti, Tl, and V in impacted stations were similar to those from reference stations. Sediment Ca, Mg, Mn, and Na were somewhat elevated at stations BB6 through BB9. For floodplain soil samples, station BB9 had the highest concentrations of Ba, Be, Co, Cu, K, Li, Mg, Na, Ni, Si, and Zn. Sediment Pb ranged from 3.20 to 8.08 µg/g and floodplain soil Pb ranged from 6.14 to 19.65 µg/g. Sediment Zn was highest at

stations BB9 and BB6, with values of 16.83 and 15.43 µg/g, respectively. Highest floodplain soil Zn was observed for station BB9 (33.89 µg/g). Concentrations of Zn were lower than values observed in March 2004 (Birge and Price, 2005b).

B. Little Bayou Creek

Results for metal concentrations of individual assays of sediment and floodplain soils from Little Bayou Creek are given in Tables A2 and A4, whereas mean metal concentrations are given in Tables 5 and 7. Sediment Ag, B, Mo, and Se and floodplain soil B, Mo, and Se were not detected at any of the stations in Little Bayou creek. Sediment concentrations of Al, Ca, Co, Fe, K, Li, Mg, Mn, Ni, Si, Ti, V, and Zn and floodplain soil concentrations of As, Be, Ca, Cd, Fe, Li, Mg, Pb, Ti, V, and Zn were highest for station LB1. Elevated As was detected in stations LB1 and LB4, with values of 11.78 and 15.24 µg/g, respectively. Sediment Be ranged from 0.31 to 0.85 µg/g, with highest values observed in station LB4. Be was only detected in floodplain soils from stations LB1 and LB2. Sediment Cd ranged from 0.42 to 1.32 µg/g, with LB4 and LB1 having the highest concentrations. For floodplain soils from Little Bayou creek, Cd ranged from 0.51 to 0.83 µg/g. Sediment Cr was highest for effluent 010+011 (31.06 µg/g) and for station LB2 (28.66 µg/g). Concentrations of Cr in sediment from the March 2004 collection ranged from 12.83 to 29.64 µg/g (Birge and Price, 2005b). Floodplain soil Cr concentration in effluent 010+011 was 15.25 µg/g, but was highest in station LB2A (58.68 µg/g). Sediment Cu was highest in LB4 (22.24

µg/g), whereas Cu in the other stations ranged from 2.89 to 8.06 µg/g. These results were similar to those observed during the March 2004 collection. Sediment and floodplain soil Ni concentrations did not vary considerably. Sediment Pb was highest in stations LB4 and LB1, however the values were lower than those found in March 2004. As observed in the past, station LB1 was impacted by Zn and had the highest sediment and floodplain soil Zn concentrations, with values of 45.57 and 73.43 µg/g, respectively. Based on these results, it appeared that effluent 010+011 was also contributing to Zn loading into Little Bayou creek.

Summary Comments

Based on water quality results, effluent 001 was still introducing electrolytes into Big Bayou creek. All other water quality parameters did not appear problematic. Although some Ag was detected in stream waters, the values were well below the National recommended chronic criterion value of 3.2 µg/L (U.S. EPA, 2004). Although found in the past, both Be and Cd were not detected at any of the station in the Bayou creek system. Concentrations of Pb in stream water were below the chronic criterion value of 2.5 µg/L (U.S. EPA, 2004), however, some of the values were approaching this criterion level. Even at the low concentrations, Pb appears to be a problem in the Bayou creek system and will be monitored closely in future sampling events. Both Ni and Zn concentrations in stream water were below the U.S. EPA chronic criterion values

of 52 and 120 µg/L (U.S. EPA, 2004). The results of this survey indicated that most of the metal concentrations detected in sediments and floodplain soils in effluent receiving stream sectors were similar to those in the reference stations. However, these floodplain soils still represent a reservoir for metal contamination that can be reintroduced into the Bayou creek system. In general, most of the metal concentrations were below the levels observed in March 2004. However, it is important to note that the metal values were sampled during high-flow water conditions. The levels tend to increase during low-flow conditions found in the summer to early-fall (Birge and Price, 2005a,b). As indicated in earlier reports, it is important to assess metals during low-flow conditions when stream discharge is lower and effluent impacts are more evident.

Table 1. Water quality results for stream water samples from the Bayou Creek system collected March 21-23, 2005.

Station	Temperature (^{o} C)	pH	D.O. (mg/L)	Conductivity (µS/cm)	Alkalinity (mg $CaCO_3$/L)	Hardness (mg $CaCO_3$/L)
MC	9.38	7.25	10.16	117	60	52
BB1A	14.78	8.16	13.91	227	120	52
BB1	13.39	7.55	12.23	223	80	68
BB2A	13.17	7.83	10.92	253	80	56
BB2	9.30	7.27	10.30	200	100	72
BB3	13.56	8.61	12.13	251	80	76
008	16.23	7.18	8.08	317	60	60
BB4	16.44	8.75	12.72	293	60	84
006	12.81	7.96	10.86	211	80	52
BB5	13.54	8.21	11.07	231	80	72
001	14.51	7.46	10.49	1197	60	296
BB6	11.62	7.18	9.43	450	60	108
BB7	11.48	7.38	9.52	451	100	108
BB8	10.92	7.36	9.74	555	60	136
BB9	11.83	7.16	9.90	504	80	124
LB1[1]	---	---	---	---	80	72
LB2A	11.80	7.27	9.54	252	80	76
010+011	14.43	7.15	9.19	352	80	92
LB2	11.17	7.25	9.66	227	80	76
LB3	10.67	7.21	8.87	216	60	68
LB4	9.28	7.38	9.96	344	100	84

[1] Temperature, pH, D.O., and conductivity measurements were not taken.

Table 2. Metal concentrations in water samples from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Water Metal Conc. (µg/L)							
Station	Date	Sample	Ag	Al	As	B	Ba	Be	Ca	Cd
MC	03/22/05	MWS1	<0.25	57.50	<10.00	45.70	33.83	<5.00	9517.9	<0.25
BB1A	03/21/05	MWS1	<0.25	56.83	<10.00	45.16	36.10	<5.00	14390.2	<0.25
BB1	03/21/05	MWS1	<0.25	49.68	<10.00	42.96	35.20	<5.00	15574.2	<0.25
BB2	03/21/05	MWS1	<0.25	63.01	<10.00	50.44	25.35	<5.00	19009.4	<0.25
BB2A	03/22/05	MWS1	<0.25	211.54	<10.00	48.87	40.76	<5.00	12942.6	<0.25
BB3	03/21/05	MWS1	<0.25	71.76	<10.00	57.37	26.35	<5.00	21258.9	<0.25
BB4	03/21/05	MWS1	<0.25	57.68	<10.00	52.23	20.41	<5.00	22196.9	<0.25
BB5	03/21/05	MWS1	<0.25	72.89	<10.00	51.12	12.48	<5.00	15446.1	<0.25
BB6	03/22/05	MWS1	0.42	74.63	<10.00	52.34	19.05	<5.00	28906.2	<0.25
BB7	03/22/05	MWS1	0.33	68.15	<10.00	49.91	18.94	<5.00	28861.3	<0.25
BB8	03/22/05	MWS1	1.55	71.13	<10.00	46.87	21.43	<5.00	35055.4	<0.25
BB9	03/22/05	MWS1	0.64	133.42	<10.00	47.05	24.11	<5.00	31964.0	<0.25

Table 2, continued. Metal concentrations in water samples from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Water Metal Conc. (µg/L)							
Station	Date	Sample	Co	Cr	Cu	Fe	K	Li	Mg	Mn
MC	03/22/05	MWS1	<1.00	0.61	2.04	110.25	2107.5	1.27	1706.1	29.90
BB1A	03/21/05	MWS1	1.32	0.74	5.54	351.97	1912.6	1.57	3211.6	237.11
BB1	03/21/05	MWS1	1.16	0.71	2.24	275.55	1952.8	1.55	3087.2	179.51
BB2	03/21/05	MWS1	1.12	0.93	3.88	461.33	2295.1	2.61	4035.9	79.81
BB2A	03/22/05	MWS1	1.13	1.26	3.76	472.03	1632.7	2.02	2396.7	49.03
BB3	03/21/05	MWS1	1.16	0.98	4.58	671.72	2641.5	5.03	4487.4	82.17
BB4	03/21/05	MWS1	<1.00	0.98	9.38	278.56	2875.0	4.16	5534.5	31.68
BB5	03/21/05	MWS1	<1.00	1.14	7.32	268.46	1996.8	2.99	4373.0	19.65
BB6	03/22/05	MWS1	1.20	1.20	8.65	307.00	4161.4	6.57	8940.0	61.66
BB7	03/22/05	MWS1	<1.00	1.03	9.05	314.54	4227.0	6.60	8959.1	62.44
BB8	03/22/05	MWS1	<1.00	1.11	6.71	202.74	4958.8	8.01	8569.8	73.73
BB9	03/22/05	MWS1	1.48	1.21	6.50	843.90	5500.7	7.16	10133.5	203.73

Table 2, continued. Metal concentrations in water samples from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Water Metal Conc. (µg/L)					
Station	Date	Sample	Na	Ni	P	Pb	Sb	Se
MC	03/22/05	MWS1	10445.2	1.57	27.11	2.42	<5.00	<5.00
BB1A	03/21/05	MWS1	21802.2	1.62	16.68	<1.00	<5.00	<5.00
BB1	03/21/05	MWS1	19034.4	1.54	21.93	<1.00	<5.00	<5.00
BB2	03/21/05	MWS1	18789.9	1.76	35.94	1.13	<5.00	<5.00
BB2A	03/22/05	MWS1	18964.0	1.75	28.02	1.61	<5.00	<5.00
BB3	03/21/05	MWS1	17359.0	1.81	34.70	1.19	<5.00	<5.00
BB4	03/21/05	MWS1	22000.6	2.21	177.92	1.54	<5.00	<5.00
BB5	03/21/05	MWS1	19846.6	1.80	65.55	1.92	<5.00	<5.00
BB6	03/22/05	MWS1	31588.3	2.80	82.25	2.26	<5.00	<5.00
BB7	03/22/05	MWS1	31312.1	2.73	76.66	1.34	<5.00	<5.00
BB8	03/22/05	MWS1	38753.1	3.01	52.16	<1.00	<5.00	<5.00
BB9	03/22/05	MWS1	35489.7	2.64	57.91	1.56	<5.00	<5.00

Table 2, continued. Metal concentrations in water samples from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Water Metal Conc. (µg/L)						
Station	Date	Sample	Si	Sn	Sr	Ti	Tl	V	Zn
MC	03/22/05	MWS1	1111.2	<5.00	56.75	<5.00	<5.00	1.02	1.75
BB1A	03/21/05	MWS1	901.1	<5.00	69.84	<5.00	<5.00	1.13	2.22
BB1	03/21/05	MWS1	915.2	<5.00	75.59	<5.00	<5.00	1.05	1.38
BB2	03/21/05	MWS1	656.6	<5.00	359.85	<5.00	<5.00	1.37	6.19
BB2A	03/22/05	MWS1	1062.6	<5.00	74.37	22.75	<5.00	2.15	2.91
BB3	03/21/05	MWS1	643.3	<5.00	472.21	<5.00	<5.00	1.16	6.78
BB4	03/21/05	MWS1	<1000.0	<5.00	327.25	<5.00	<5.00	1.16	11.65
BB5	03/21/05	MWS1	<1000.0	<5.00	184.93	<5.00	<5.00	1.19	7.04
BB6	03/22/05	MWS1	712.5	<5.00	139.13	<5.00	<5.00	1.22	12.46
BB7	03/22/05	MWS1	694.3	<5.00	137.28	<5.00	<5.00	1.14	9.57
BB8	03/22/05	MWS1	600.0	<5.00	152.94	<5.00	<5.00	1.10	4.45
BB9	03/22/05	MWS1	<1000.0	<5.00	123.15	11.55	<5.00	1.77	3.39

Table 3. Metal concentrations in water samples from Little Bayou Creek and effluents collected March 21-23, 2005.

			Water Metal Conc. (µg/L)							
Station	Date	Sample	Ag	Al	As	B	Ba	Be	Ca	Cd
LB1	03/22/05	MWS1	<0.25	205.57	<10.00	48.35	60.18	<5.00	22950.8	<0.25
LB2A	03/23/05	MWS1	<0.25	188.29	<10.00	53.08	56.30	<5.00	18821.9	<0.25
LB2	03/23/05	MWS1	<0.25	150.51	<10.00	51.90	44.86	<5.00	20744.5	<0.25
LB3	03/23/05	MWS1	<0.25	175.12	<10.00	47.62	50.02	<5.00	17066.7	<0.25
LB4	03/22/05	MWS1	<0.25	69.70	<10.00	45.72	43.81	<5.00	20475.4	<0.25
001	03/23/05	MWS1	6.09	59.50	<10.00	58.56	27.35	<5.00	66231.9	0.64
006	03/22/05	MWS1	0.67	56.36	<10.00	48.11	6.29	<5.00	11253.1	<0.25
008	03/23/05	MWS1	0.46	53.20	<10.00	48.12	9.34	<5.00	16758.3	<0.25
010011	03/23/05	MWS1	0.98	83.64	<10.00	52.25	18.93	<5.00	24422.4	0.80

Table 3, continued. Metal concentrations in water samples from Little Bayou Creek and effluents collected March 21-23, 2005.

			Water Metal Conc. (µg/L)							
Station	Date	Sample	Co	Cr	Cu	Fe	K	Li	Mg	Mn
LB1	03/22/05	MWS1	1.32	1.45	3.93	952.56	2484.1	1.69	2310.6	167.62
LB2A	03/23/05	MWS1	1.19	1.51	5.14	667.00	1733.5	2.38	3808.5	96.53
LB2	03/23/05	MWS1	1.12	1.63	8.68	542.43	2134.0	2.69	4716.3	78.78
LB3	03/23/05	MWS1	1.21	1.47	7.04	642.93	2150.9	2.39	3421.3	100.83
LB4	03/22/05	MWS1	1.15	1.55	5.22	531.70	2241.6	3.01	6776.3	159.49
001	03/23/05	MWS1	1.52	1.17	21.32	255.80	15722.3	18.98	18532.1	44.28
006	03/22/05	MWS1	<1.00	1.32	3.71	195.39	1564.4	2.32	3771.3	15.00
008	03/23/05	MWS1	<1.00	1.22	25.35	182.23	2645.9	3.38	3815.6	27.53
010011	03/23/05	MWS1	<1.00	2.31	70.63	304.80	3032.8	3.35	6497.4	31.42

Table 3, continued. Metal concentrations in water samples from Little Bayou Creek and effluents collected March 21-23, 2005.

			Water Metal Conc. (µg/L)					
Station	Date	Sample	Na	Ni	P	Pb	Sb	Se
LB1	03/22/05	MWS1	7951.6	2.17	78.68	1.85	<5.00	<5.00
LB2A	03/23/05	MWS1	16891.0	2.86	59.56	1.87	<5.00	<5.00
LB2	03/23/05	MWS1	20559.2	2.46	118.21	2.27	<5.00	<5.00
LB3	03/23/05	MWS1	16522.5	2.74	87.36	1.68	<5.00	<5.00
LB4	03/22/05	MWS1	28860.2	1.71	58.64	<1.00	<5.00	<5.00
001	03/23/05	MWS1	80314.5	5.37	130.36	<1.00	<5.00	<5.00
006	03/22/05	MWS1	18266.8	1.18	23.15	<1.00	<5.00	<5.00
008	03/23/05	MWS1	24359.5	3.69	434.35	1.29	<5.00	<5.00
010011	03/23/05	MWS1	26204.9	1.80	274.17	1.43	<5.00	<5.00

Table 3, continued. Metal concentrations in water samples from Little Bayou Creek and effluents collected March 21-23, 2005.

			Water Metal Conc. (µg/L)						
Station	Date	Sample	Si	Sn	Sr	Ti	Tl	V	Zn
LB1	03/22/05	MWS1	873.6	<5.00	92.06	31.77	<5.00	2.76	38.08
LB2A	03/23/05	MWS1	925.0	<5.00	361.27	<5.00	<5.00	1.96	23.14
LB2	03/23/05	MWS1	842.8	<5.00	300.89	<5.00	<5.00	1.77	34.36
LB3	03/23/05	MWS1	927.4	<5.00	206.76	<5.00	<5.00	1.75	24.22
LB4	03/22/05	MWS1	<1000.0	<5.00	154.51	<5.00	<5.00	1.18	6.17
001	03/23/05	MWS1	1445.8	<5.00	205.78	<5.00	<5.00	1.62	5.06
006	03/22/05	MWS1	<1000.0	<5.00	39.67	<5.00	<5.00	1.13	1.84
008	03/23/05	MWS1	<1000.0	<5.00	124.77	<5.00	<5.00	0.86	32.95
010011	03/23/05	MWS1	649.5	<5.00	225.36	<5.00	<5.00	1.39	55.17

Table 4. Mean metal values in sediments from Massac Creek and Big Bayou Creek collected March 21-23, 2005.

	Sediment Metal Conc. (µg/g)									
Station	Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr
MC	N.D.	2838.2	6.55	50.80	22.38	0.55	256.6	1.09	3.44	40.95
BB1A	N.D.	2729.1	2.05	N.D.	22.70	N.D.	462.5	0.57	1.84	9.67
BB1	N.D.	1909.0	4.34	N.D.	21.03	0.47	370.6	1.10	2.57	19.42
BB2A	N.D.	1238.8	4.87	N.D.	19.00	0.42	196.4	0.94	2.17	16.21
BB2	N.D.	2131.0	2.45	N.D.	21.58	0.48	594.0	0.87	2.69	21.46
BB3	N.D.	1958.3	1.55	N.D.	12.17	N.D.	248.2	0.68	1.76	7.23
BB4	N.D.	877.2	3.01	N.D.	11.59	0.28	168.2	0.62	1.73	12.26
BB5	N.D.	3431.8	3.17	N.D.	9.59	0.42	322.8	1.25	2.91	18.41
BB6	N.D.	2763.0	2.51	N.D.	25.54	N.D.	695.1	0.60	1.83	9.83
BB7	N.D.	2962.1	1.22	N.D.	24.70	N.D.	393.8	0.56	1.90	7.72
BB8	N.D.	2390.1	1.19	N.D.	23.93	N.D.	482.8	0.41	1.96	6.26
BB9	N.D.	2623.9	2.56	N.D.	26.60	0.39	2214.0	0.65	2.34	13.40

Table 4, continued. Mean metal values in sediments from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

	Sediment Metal Conc. (µg/g)								
Station	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
MC	3.83	18324.8	246.3	1.88	337.2	287.8	N.D.	63.21	5.22
BB1A	2.96	6906.0	299.3	2.73	488.3	206.2	N.D.	62.58	3.09
BB1	3.12	10123.2	160.7	1.54	241.9	327.6	N.D.	61.26	3.61
BB2A	2.28	11534.0	95.1	0.89	139.1	261.6	N.D.	57.35	2.94
BB2	2.79	10495.5	190.5	1.96	328.1	214.0	N.D.	62.68	3.75
BB3	1.50	6201.3	143.6	1.63	179.4	58.9	N.D.	63.53	1.79
BB4	1.71	7825.8	66.8	0.65	89.8	106.8	N.D.	58.15	2.21
BB5	2.60	13235.0	179.8	2.42	207.7	48.3	N.D.	66.42	2.62
BB6	3.59	7773.7	264.7	2.56	413.5	227.8	N.D.	67.82	3.14
BB7	3.47	7282.9	271.6	2.87	435.2	176.7	N.D.	58.74	3.29
BB8	3.00	5367.6	290.0	2.47	442.0	351.9	N.D.	74.04	3.14
BB9	3.49	8434.9	350.1	4.31	550.3	287.7	N.D.	71.44	4.29

Table 4, continued. Mean metal values in sediments from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

	Sediment Metal Conc. (µg/g)									
Station	Pb	Sb	Se	Si	Sn	Sr	Ti	Tl	V	Zn
MC	8.08	1.37	N.D.	77.76	1.36	2.11	53.86	0.49	42.71	12.65
BB1A	5.56	0.31	N.D.	80.48	0.56	3.43	25.24	0.93	13.43	10.74
BB1	7.96	0.54	N.D.	76.95	0.92	2.90	24.70	0.37	24.66	10.90
BB2A	7.50	0.51	N.D.	76.46	1.07	2.26	29.95	1.23	23.01	12.75
BB2	6.86	0.76	N.D.	81.33	0.58	4.29	22.57	1.14	21.43	12.24
BB3	3.20	N.D.	N.D.	84.34	0.53	2.30	17.18	N.D.	10.97	6.59
BB4	3.84	0.30	N.D.	76.17	0.93	2.01	22.87	N.D.	15.28	10.09
BB5	5.20	0.56	N.D.	78.62	0.73	2.20	20.22	0.26	33.63	7.50
BB6	5.34	N.D.	N.D.	81.20	0.42	6.49	25.17	0.76	14.05	15.43
BB7	5.79	0.23	N.D.	81.22	0.42	4.08	19.44	0.70	12.19	14.66
BB8	4.88	N.D.	N.D.	80.55	0.43	3.39	21.88	1.03	9.98	12.06
BB9	6.39	0.32	N.D.	78.45	0.46	6.95	16.66	0.61	12.01	16.83

Table 5. Mean metal values in sediments from Little Bayou Creek and effluents collected March 21-23, 2005.

	Sediment Metal Conc. (µg/g)									
Station	Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr
LB1	N.D.	4648.3	11.78	N.D.	48.55	0.63	2366.0	1.26	4.26	9.69
LB2A	N.D.	2402.9	3.69	N.D.	21.91	0.36	461.4	0.71	3.11	14.18
LB2	N.D.	3821.2	1.81	N.D.	29.23	0.31	767.7	0.58	2.96	28.66
LB3	N.D.	2456.5	1.84	N.D.	23.82	N.D.	715.8	0.42	1.72	14.88
LB4	N.D.	1920.1	15.24	N.D.	78.78	0.85	330.3	1.32	2.77	13.92
001	N.D.	2904.6	7.42	N.D.	30.95	0.75	847.7	1.95	9.53	31.12
006	N.D.	2991.1	2.41	N.D.	21.74	0.53	679.2	0.87	1.92	20.96
008	N.D.	3552.7	1.28	N.D.	24.12	0.29	603.5	0.76	2.15	9.70
010+011	N.D.	3912.5	4.23	N.D.	23.97	0.58	2159.9	1.17	3.29	31.06

Table 5, continued. Mean metal values in sediments from Little Bayou Creek and effluents collected March 21-23, 2005.

	Sediment Metal Conc. (µg/g)								
Station	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
LB1	8.06	12165.5	479.3	5.53	825.3	619.9	N.D.	62.60	6.82
LB2A	2.89	9675.7	157.7	1.94	435.4	225.0	N.D.	67.76	3.77
LB2	4.60	7546.6	275.0	3.15	522.0	193.8	N.D.	72.94	3.96
LB3	3.14	5508.7	218.5	2.22	401.9	149.2	N.D.	69.48	2.96
LB4	22.24	12154.6	157.1	1.60	227.3	217.6	N.D.	67.49	5.07
001	6.86	16896.6	283.8	2.26	389.5	374.9	N.D.	88.12	7.58
006	7.50	9100.1	268.0	2.93	497.5	109.3	N.D.	73.22	4.49
008	6.85	9169.9	262.1	2.70	423.3	465.6	N.D.	82.02	3.76
010+011	5.45	11571.6	294.2	3.12	577.8	195.0	N.D.	91.77	5.90

Table 5, continued. Mean metal values in sediments from Little Big Bayou Creek and effluents collected March 21-23, 2005.

	Sediment Metal Conc. (µg/g)									
Station	Pb	Sb	Se	Si	Sn	Sr	Ti	Tl	V	Zn
LB1	14.36	0.52	N.D.	86.00	0.56	9.24	26.74	0.48	29.50	45.57
LB2A	7.71	0.33	N.D.	79.57	N.D.	8.61	8.27	0.96	17.40	17.85
LB2	6.19	0.49	N.D.	84.29	N.D.	9.84	5.88	0.90	12.04	32.45
LB3	5.27	N.D.	N.D.	83.10	N.D.	8.31	14.54	0.36	10.44	20.59
LB4	16.86	2.62	N.D.	77.56	1.50	5.20	18.76	0.31	26.72	39.84
001	12.88	1.12	N.D.	81.38	1.00	10.55	27.08	0.65	44.40	22.34
006	8.19	0.80	N.D.	83.12	0.87	3.86	21.84	N.D.	25.88	15.31
008	5.93	0.30	N.D.	81.29	0.64	5.07	8.13	0.45	14.21	24.10
010+011	11.54	0.64	N.D.	87.35	0.72	8.75	6.75	0.38	25.26	68.56

Table 6. Mean metal values in floodplain soils from Massac Creek and Big Bayou Creek collected March 21-23, 2005.

	Floodplain Soil Metal Conc. (µg/g)									
Station	Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr
MC	N.D.	2715.7	3.38	62.56	29.09	0.35	302.0	1.02	2.66	17.82
BB1A	N.D.	2219.0	3.39	N.D.	23.03	0.29	382.1	0.56	2.80	6.94
BB1	N.D.	1770.2	2.50	N.D.	26.76	0.36	2736.3	0.91	2.35	19.43
BB2A	N.D.	4706.4	2.87	N.D.	39.07	0.32	1698.7	0.75	3.05	8.73
BB2	N.D.	3269.4	2.49	N.D.	33.69	0.30	1038.0	0.67	2.41	11.05
BB3	N.D.	4465.4	3.08	N.D.	32.62	0.35	854.8	0.81	2.73	15.48
BB4	N.D.	2438.3	2.75	N.D.	24.60	0.30	528.3	0.58	2.34	8.79
BB5	N.D.	2747.4	1.93	N.D.	28.54	0.27	942.8	0.55	2.30	7.47
BB6	N.D.	2742.4	2.81	N.D.	25.57	N.D.	676.4	0.54	1.97	7.65
BB7	N.D.	3677.8	2.47	N.D.	27.17	0.29	687.8	0.73	1.93	8.65
BB8	N.D.	3453.4	1.69	N.D.	28.41	0.33	580.3	0.55	2.13	9.37
BB9	N.D.	4578.6	1.43	N.D.	40.22	0.53	1209.3	0.83	3.31	10.60

Table 6, continued. Mean metal values in floodplain soils from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

	Floodplain Soil Metal Conc. (µg/g)								
Station	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
MC	3.55	10941.0	310.2	2.44	357.9	436.7	N.D.	57.41	5.59
BB1A	2.60	7439.8	334.8	2.13	363.3	412.7	N.D.	56.39	3.00
BB1	3.54	8224.3	306.5	1.72	520.0	210.1	N.D.	62.17	3.63
BB2A	5.36	9844.0	627.4	5.71	720.0	507.4	N.D.	62.93	5.33
BB2	4.49	8868.1	451.0	4.85	603.7	409.9	N.D.	48.40	6.04
BB3	4.96	10984.4	526.8	5.02	567.2	390.7	N.D.	61.47	4.90
BB4	2.91	7119.4	329.7	2.47	380.9	333.1	N.D.	56.28	3.33
BB5	3.45	7303.9	350.0	2.89	444.6	358.1	N.D.	60.11	3.60
BB6	3.91	7059.5	339.6	2.81	396.6	333.8	N.D.	59.45	3.51
BB7	3.89	8543.1	434.6	3.90	521.5	735.3	N.D.	61.41	4.58
BB8	4.24	7179.6	496.3	4.22	471.4	308.7	N.D.	60.99	4.35
BB9	7.17	10283.6	735.5	7.40	878.5	599.5	N.D.	65.59	8.14

Table 6, continued. Mean metal values in floodplain soils from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

	Floodplain Soil Metal Conc. (µg/g)									
Station	Pb	Sb	Se	Si	Sn	Sr	Ti	Tl	V	Zn
MC	6.65	0.52	N.D.	80.86	0.65	2.74	36.63	0.35	20.43	14.47
BB1A	7.03	0.35	N.D.	73.29	N.D.	2.79	38.38	0.87	14.41	9.60
BB1	19.65	0.53	N.D.	75.52	0.74	12.46	22.27	0.27	10.63	21.34
BB2A	7.81	N.D.	N.D.	74.13	N.D.	17.43	29.30	0.90	15.72	23.11
BB2	8.36	0.35	N.D.	67.68	N.D.	8.15	29.46	0.95	15.97	21.07
BB3	9.29	0.46	N.D.	74.13	N.D.	6.14	29.79	1.05	19.15	21.26
BB4	6.34	N.D.	N.D.	72.82	N.D.	4.85	37.06	1.15	14.70	12.65
BB5	6.56	N.D.	N.D.	81.35	0.43	6.23	29.14	0.77	12.80	14.94
BB6	6.92	N.D.	N.D.	82.53	N.D.	4.75	35.27	0.80	12.79	13.83
BB7	9.59	N.D.	N.D.	79.47	N.D.	5.84	32.22	0.76	15.17	16.58
BB8	6.14	0.32	N.D.	76.70	0.50	5.45	32.13	0.86	13.07	17.59
BB9	8.13	0.61	N.D.	84.16	0.48	7.49	33.85	0.83	14.48	33.89

Table 7. Mean metal values in floodplain soils from Little Bayou Creek and effluents collected March 21-23, 2005.

	Floodplain Soil Metal Conc. (µg/g)									
Station	Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr
LB1	N.D.	4586.3	2.58	N.D.	29.87	0.45	1113.4	0.83	2.32	9.06
LB2A	0.31	4614.9	1.97	N.D.	38.45	N.D.	803.3	0.58	1.61	58.68
LB2	N.D.	3732.9	1.91	N.D.	30.19	0.29	866.4	0.52	2.34	32.90
LB3	N.D.	3607.6	1.61	N.D.	29.92	N.D.	1207.8	0.51	2.11	14.83
LB4	N.D.	2455.6	0.87	N.D.	30.59	N.D.	1098.9	0.38	1.37	24.03
001	N.D.	5004.7	2.84	N.D.	72.68	0.34	893.3	0.78	1.98	10.98
006	N.D.	4508.6	3.27	N.D.	31.28	0.35	934.6	0.78	2.73	11.59
008	N.D.	2817.3	1.02	N.D.	24.07	N.D.	752.3	0.51	1.74	9.52
010+011	N.D.	2581.9	0.52	N.D.	24.77	N.D.	1173.9	0.42	1.37	15.25

Table 7, continued. Mean metal values in floodplain soils from Little Bayou Creek and effluents collected March 21-23, 2005.

	Floodplain Soil Metal Conc. (µg/g)								
Station	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
LB1	5.70	8020.0	558.2	6.04	795.8	287.3	N.D.	63.34	4.68
LB2A	7.73	7611.9	414.0	5.83	742.4	153.1	N.D.	64.03	5.09
LB2	4.79	6975.8	420.0	3.60	495.8	264.5	N.D.	81.93	4.18
LB3	4.14	6831.3	426.8	3.43	476.1	248.8	N.D.	62.93	3.81
LB4	4.40	4252.0	325.2	2.53	456.4	288.2	N.D.	59.89	3.50
001	5.95	10732.4	570.8	8.31	1180.3	230.7	N.D.	79.03	9.53
006	5.17	10484.7	403.5	5.14	589.7	440.5	N.D.	63.83	5.38
008	3.36	6729.5	327.8	2.89	504.4	315.8	N.D.	59.32	3.80
010+011	6.26	4172.6	376.0	3.01	487.5	169.4	N.D.	64.80	5.44

Table 7, continued. Mean metal values in floodplain soils from Little Big Bayou Creek and effluents collected March 21-23, 2005.

	Floodplain Soil Metal Conc. (µg/g)									
Station	Pb	Sb	Se	Si	Sn	Sr	Ti	Tl	V	Zn
LB1	9.29	0.69	N.D.	85.66	N.D.	5.71	37.75	0.48	20.35	73.43
LB2A	8.00	0.52	N.D.	91.34	N.D.	7.96	37.14	1.18	13.11	51.25
LB2	6.19	0.38	N.D.	105.64	N.D.	6.78	21.69	0.83	12.87	26.99
LB3	5.87	N.D.	N.D.	82.87	N.D.	9.00	19.09	1.35	12.25	37.66
LB4	4.95	N.D.	N.D.	92.34	N.D.	6.64	30.27	1.02	8.74	40.11
001	5.44	N.D.	N.D.	91.18	0.51	10.74	77.75	0.78	19.11	20.73
006	8.39	0.31	N.D.	77.39	N.D.	6.77	28.58	0.75	17.45	19.93
008	5.83	N.D.	N.D.	75.88	0.52	5.25	25.68	0.87	12.27	14.44
010+011	3.24	N.D.	N.D.	77.56	0.43	9.06	16.05	0.85	6.86	45.36

Table A1. Metal concentrations in sediments from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Sediment Metal Conc. (µg/g)									
Station	Date	Sample[1]	Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr
MC	03/22/05	MSED1	<0.25	2086.7	9.39	50.80	22.38	0.77	136.3	OVER	3.25	70.77
MC	03/22/05	MSED2	<0.26	3589.7	3.71	<50.99	22.38	0.32	376.9	1.09	3.62	11.13
BB1A	03/21/05	MSED1	<0.25	2996.3	2.67	<50.08	23.76	<0.25	515.1	0.70	1.91	13.58
BB1A	03/21/05	MSED2	<0.25	2461.9	1.42	<50.20	21.64	<0.25	409.8	0.44	1.76	5.76
BB1	03/21/05	MSED1	<0.25	2521.6	5.41	<50.15	24.52	0.65	553.9	1.57	3.47	27.39
BB1	03/21/05	MSED2	<0.25	1296.5	3.27	<50.33	17.54	0.29	187.3	0.63	1.68	11.45
BB2A	03/21/05	MSED1	<0.25	1200.1	4.27	<50.89	14.83	0.38	127.1	0.90	1.74	18.77
BB2A	03/21/05	MSED2	<0.25	1277.5	5.46	<50.08	23.18	0.46	265.7	0.99	2.59	13.66
BB2	03/22/05	MSED1	<0.25	1734.3	3.11	<50.25	21.07	0.48	575.9	1.20	3.43	36.55
BB2	03/22/05	MSED2	<0.25	2527.8	1.79	<50.48	22.09	<0.25	612.2	0.53	1.95	6.37
BB3	03/21/05	MSED1	<0.25	792.0	0.87	<50.28	9.07	<0.25	124.8	<0.25	1.33	4.59
BB3	03/21/05	MSED2	<0.25	3124.7	2.24	<50.03	15.27	<0.25	371.7	0.68	2.19	9.87
BB4	03/21/05	MSED1	<0.25	833.7	3.25	<50.25	13.98	0.28	193.8	0.74	1.44	14.11
BB4	03/21/05	MSED2	<0.25	920.7	2.77	<50.35	9.20	<0.25	142.5	0.49	2.02	10.40
BB5	03/21/05	MSED1	<0.25	1694.6	<2.50	<49.98	7.73	0.49	168.5	1.44	2.52	25.94
BB5	03/21/05	MSED2	<0.25	5168.9	3.17	<50.23	11.44	0.35	477.1	1.07	3.31	10.88
BB6	03/22/05	MSED1	<0.25	2981.5	2.74	<50.84	27.99	<0.25	609.5	0.61	1.91	7.82
BB6	03/22/05	MSED2	<0.25	2544.5	2.27	<50.51	23.08	<0.25	780.7	0.59	1.75	11.84
BB7	03/22/05	MSED1	<0.25	3188.4	1.27	<50.23	21.59	<0.25	526.1	0.56	1.98	7.26
BB7	03/22/05	MSED2	<0.25	2735.8	1.18	<50.10	27.81	<0.25	261.5	0.55	1.81	8.18
BB8	03/22/05	MSED1	<0.25	2048.4	0.86	<50.20	20.65	<0.25	346.4	0.34	1.74	5.91
BB8	03/22/05	MSED2	<0.25	2731.7	1.52	<50.03	27.21	<0.25	619.2	0.48	2.17	6.60
BB9	03/22/05	MSED1	<0.25	3084.4	2.79	<50.63	26.35	0.39	2724.7	0.72	2.70	12.14
BB9	03/22/05	MSED2	<0.25	2163.4	2.33	<50.00	26.85	0.39	1703.3	0.58	1.97	14.65

[1] MSED1 and MSED2 are separate samples.

Table A1, continued. Metal concentrations in sediments from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Sediment Metal Conc. (µg/g)								
Station	Date	Sample[1]	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
MC	03/22/05	MSED1	4.14	23307.8	83.3	0.65	87.4	337.3	<2.50	57.68	6.20
MC	03/22/05	MSED2	3.52	13341.8	409.3	3.11	586.9	238.3	<2.55	68.74	4.25
BB1A	03/21/05	MSED1	2.95	8552.0	318.8	2.77	505.3	291.0	<2.50	63.10	3.20
BB1A	03/21/05	MSED2	2.97	5260.0	279.8	2.69	471.2	121.5	<2.51	62.07	2.99
BB1	03/21/05	MSED1	4.35	12376.1	219.7	1.98	321.4	458.5	<2.51	62.64	5.01
BB1	03/21/05	MSED2	1.90	7870.2	101.8	1.11	162.4	196.7	<2.52	59.88	2.21
BB2A	03/21/05	MSED1	2.18	10933.0	86.0	0.84	121.5	157.5	<2.54	58.12	2.84
BB2A	03/21/05	MSED2	2.37	12134.9	104.3	0.94	156.8	365.8	<2.50	56.58	3.05
BB2	03/22/05	MSED1	2.76	14558.2	118.9	1.24	202.2	166.4	<2.51	58.20	4.38
BB2	03/22/05	MSED2	2.83	6432.8	262.1	2.69	453.9	261.7	<2.52	67.16	3.11
BB3	03/21/05	MSED1	0.87	3457.4	59.4	0.69	92.1	<50.3	<2.51	57.57	1.12
BB3	03/21/05	MSED2	2.13	8945.2	227.8	2.57	266.8	58.9	<2.50	69.50	2.46
BB4	03/21/05	MSED1	1.97	9283.2	65.8	0.59	86.8	181.8	<2.51	60.06	2.66
BB4	03/21/05	MSED2	1.46	6368.4	67.7	0.72	92.8	31.8	<2.52	56.24	1.76
BB5	03/21/05	MSED1	2.42	12315.6	84.6	0.69	97.7	48.3	<2.50	58.06	2.62
BB5	03/21/05	MSED2	2.77	14154.3	275.0	4.14	317.6	<50.2	<2.51	74.79	<2.51
BB6	03/22/05	MSED1	3.18	7877.7	286.3	2.71	420.7	279.0	<2.54	60.20	3.18
BB6	03/22/05	MSED2	4.00	7669.6	243.0	2.42	406.3	176.5	<2.53	75.43	3.10
BB7	03/22/05	MSED1	3.81	7302.9	311.7	3.05	488.5	186.3	<2.51	59.42	3.46
BB7	03/22/05	MSED2	3.13	7263.0	231.4	2.69	381.9	167.1	<2.51	58.05	3.11
BB8	03/22/05	MSED1	2.59	4502.6	246.2	2.16	366.4	252.7	<2.51	76.89	2.76
BB8	03/22/05	MSED2	3.40	6232.5	333.7	2.78	517.5	451.0	<2.50	71.19	3.52
BB9	03/22/05	MSED1	4.05	9145.6	379.2	5.42	649.3	358.4	<2.53	68.84	5.02
BB9	03/22/05	MSED2	2.93	7724.2	321.0	3.20	451.3	217.1	<2.50	74.04	3.56

[1] MSED1 and MSED2 are separate samples.

Table A1, continued. Metal concentrations in sediments from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Sediment Metal Conc. (µg/g)					
Station	Date	Sample[1]	Pb	Sb	Se	Si	Sn	Sr
MC	03/22/05	MSED1	9.15	2.26	<0.25	74.46	2.08	1.16
MC	03/22/05	MSED2	7.00	0.48	<0.26	81.05	0.64	3.06
BB1A	03/21/05	MSED1	6.10	0.31	<0.25	81.22	<0.25	3.71
BB1A	03/21/05	MSED2	5.02	<0.25	<0.25	79.74	0.56	3.15
BB1	03/21/05	MSED1	11.23	0.79	<0.25	77.08	1.25	4.07
BB1	03/21/05	MSED2	4.69	0.29	<0.25	76.81	0.59	1.73
BB2A	03/21/05	MSED1	6.80	0.41	<0.25	78.10	1.26	1.93
BB2A	03/21/05	MSED2	8.20	0.60	<0.25	74.82	0.87	2.59
BB2	03/22/05	MSED1	8.04	0.76	<0.25	72.38	0.58	4.48
BB2	03/22/05	MSED2	5.68	<0.25	<0.25	90.29	<0.25	4.10
BB3	03/21/05	MSED1	2.34	<0.25	<0.25	85.70	0.53	1.45
BB3	03/21/05	MSED2	4.06	<0.25	<0.25	82.98	<0.25	3.14
BB4	03/21/05	MSED1	4.17	0.30	<0.25	75.66	1.22	2.25
BB4	03/21/05	MSED2	3.51	<0.25	<0.25	76.67	0.65	1.77
BB5	03/21/05	MSED1	4.55	0.72	<0.25	76.90	0.96	1.28
BB5	03/21/05	MSED2	5.85	0.41	<0.25	80.35	0.51	3.12
BB6	03/22/05	MSED1	5.59	<0.25	<0.25	82.23	<0.25	8.85
BB6	03/22/05	MSED2	5.08	<0.25	<0.25	80.18	0.42	4.13
BB7	03/22/05	MSED1	5.74	<0.25	<0.25	82.20	<0.25	4.76
BB7	03/22/05	MSED2	5.84	0.23	<0.25	80.24	0.42	3.40
BB8	03/22/05	MSED1	4.01	<0.25	<0.25	79.67	<0.25	2.70
BB8	03/22/05	MSED2	5.74	<0.25	<0.25	81.43	0.43	4.09
BB9	03/22/05	MSED1	6.69	0.32	<0.25	80.22	0.46	9.15
BB9	03/22/05	MSED2	6.10	<0.25	<0.25	76.68	<0.25	4.74

[1] MSED1 and MSED2 are separate samples.

Table A1, continued. Metal concentrations in sediments from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

Station	Date	Sample[1]	Sediment Metal Conc. (µg/g) Ti	Tl	V	Zn
MC	03/22/05	MSED1	87.54	<0.25	68.43	13.46
MC	03/22/05	MSED2	20.18	0.49	17.00	11.83
BB1A	03/21/05	MSED1	21.47	0.93	16.40	11.65
BB1A	03/21/05	MSED2	29.01	<0.25	10.46	9.83
BB1	03/21/05	MSED1	28.74	<0.25	34.97	14.65
BB1	03/21/05	MSED2	20.67	0.37	14.35	7.14
BB2A	03/21/05	MSED1	29.93	<0.25	22.35	12.00
BB2A	03/21/05	MSED2	29.96	1.23	23.67	13.51
BB2	03/22/05	MSED1	20.62	<0.25	31.56	12.42
BB2	03/22/05	MSED2	24.51	1.14	11.30	12.06
BB3	03/21/05	MSED1	21.57	<0.25	6.86	5.19
BB3	03/21/05	MSED2	12.80	<0.25	15.09	7.99
BB4	03/21/05	MSED1	23.26	<0.25	16.32	12.30
BB4	03/21/05	MSED2	22.47	<0.25	14.25	7.87
BB5	03/21/05	MSED1	25.31	<0.25	44.38	8.97
BB5	03/21/05	MSED2	15.13	0.26	22.87	6.04
BB6	03/22/05	MSED1	27.43	0.87	12.79	16.00
BB6	03/22/05	MSED2	22.90	0.66	15.31	14.85
BB7	03/22/05	MSED1	18.82	1.02	12.12	17.82
BB7	03/22/05	MSED2	20.05	0.38	12.27	11.51
BB8	03/22/05	MSED1	23.39	<0.25	9.10	9.35
BB8	03/22/05	MSED2	20.37	1.03	10.85	14.78
BB9	03/22/05	MSED1	17.77	0.61	12.40	19.75
BB9	03/22/05	MSED2	15.56	0.61	11.62	13.90

[1] MSED1 and MSED2 are separate samples.

Table A2. Metal concentrations in sediments from Little Bayou Creek and effluents collected March 21-23, 2005.

			Sediment Metal Conc. (µg/g)									
Station	Date	Sample[1]	Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr
LB1	03/22/05	MSED1	<0.25	5185.0	11.78	<50.79	52.65	0.88	3319.6	1.79	5.34	12.47
LB1	03/22/05	MSED2	<0.25	4111.6	<2.51	<50.28	44.44	0.38	1412.5	0.73	3.18	6.91
LB2A	03/23/05	MSED1	<0.25	2085.8	3.69	<50.03	22.36	0.35	384.2	0.73	3.30	8.72
LB2A	03/23/05	MSED2	<0.25	2719.9	<2.51	<50.20	21.46	0.37	538.6	0.69	2.93	19.64
LB2	03/23/05	MSED1	<0.25	3564.0	2.41	<50.56	28.82	0.31	798.4	0.61	3.23	47.00
LB2	03/23/05	MSED2	<0.25	4078.3	1.22	<50.56	29.64	0.31	737.1	0.55	2.69	10.32
LB3	03/23/05	MSED1	<0.25	2912.8	1.78	<50.03	22.50	<0.25	819.5	0.45	1.75	16.46
LB3	03/23/05	MSED2	<0.25	2000.3	1.90	<50.13	25.13	<0.25	612.0	0.39	1.68	13.30
LB4	03/22/05	MSED1	<0.25	1382.6	15.24	<50.33	131.87	0.85	337.1	2.28	4.25	OVER
LB4	03/22/05	MSED2	<0.25	2457.5	<2.51	<50.20	25.69	<0.25	323.5	0.35	1.30	13.92
001	03/23/05	MSED1	<0.27	2069.1	5.86	<54.61	40.62	0.70	643.5	1.81	13.54	37.24
001	03/23/05	MSED2	<0.25	3740.0	8.98	<50.84	21.29	0.79	1051.9	2.09	5.52	25.01
006	03/23/05	MSED1	<0.26	3300.8	1.63	<51.15	22.61	<0.26	671.0	0.49	1.64	9.40
006	03/23/05	MSED2	<0.25	2681.3	3.20	<50.13	20.87	0.53	687.3	1.26	2.19	32.52
008	03/23/05	MSED1	<0.25	4389.6	0.84	<50.13	25.69	0.29	716.4	0.78	2.22	9.45
008	03/23/05	MSED2	<0.25	2715.8	1.72	<50.15	22.54	<0.25	490.5	0.74	2.08	9.94
010011	03/23/05	MSED1	<0.25	3839.4	3.83	<50.08	27.56	0.57	1968.5	1.12	2.99	37.28
010011	03/23/05	MSED2	<0.25	3985.5	4.64	<50.20	20.38	0.59	2351.3	1.23	3.59	24.85

[1] MSED1 and MSED2 are separate samples.

Table A2, continued. Metal concentrations in sediments from Little Bayou Creek and effluents collected March 21-23, 2005.

			Sediment Metal Conc. (µg/g)								
Station	Date	Sample[1]	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
LB1	03/22/05	MSED1	9.93	15251.7	528.5	6.33	968.3	808.4	<2.54	60.59	7.83
LB1	03/22/05	MSED2	6.19	9079.3	430.1	4.74	682.4	431.4	<2.51	64.61	5.82
LB2A	03/23/05	MSED1	2.45	9883.2	136.7	1.72	492.1	297.2	<2.50	69.29	<2.50
LB2A	03/23/05	MSED2	3.32	9468.2	178.7	2.17	378.7	152.7	<2.51	66.23	3.77
LB2	03/23/05	MSED1	5.98	7730.7	274.0	3.19	459.1	224.9	<2.53	71.02	4.34
LB2	03/23/05	MSED2	3.23	7362.5	276.0	3.12	584.9	162.8	<2.53	74.85	3.57
LB3	03/23/05	MSED1	3.44	5929.6	262.0	2.65	469.7	159.8	<2.50	68.61	3.22
LB3	03/23/05	MSED2	2.83	5087.8	175.0	1.78	334.1	138.7	<2.51	70.34	2.69
LB4	03/22/05	MSED1	41.59	19672.2	99.4	0.67	124.7	378.6	<2.52	66.43	7.84
LB4	03/22/05	MSED2	2.89	4637.0	214.7	2.53	330.0	56.6	<2.51	68.56	2.31
001	03/23/05	MSED1	6.11	15821.4	172.9	1.37	260.8	299.3	<2.73	76.47	6.98
001	03/23/05	MSED2	7.60	17971.9	394.8	3.14	518.3	450.4	<2.54	99.77	8.18
006	03/23/05	MSED1	7.54	6882.0	310.4	3.36	583.4	51.1	<2.56	76.92	3.16
006	03/23/05	MSED2	7.46	11318.1	225.6	2.51	411.5	167.5	<2.51	69.51	5.81
008	03/23/05	MSED1	7.22	9510.2	327.8	3.27	514.1	494.6	<2.51	90.97	4.18
008	03/23/05	MSED2	6.49	8829.7	196.4	2.14	332.6	436.5	<2.51	73.07	3.35
010011	03/23/05	MSED1	5.21	12434.3	281.4	2.94	542.3	166.3	<2.50	93.16	6.00
010011	03/23/05	MSED2	5.68	10708.8	307.0	3.30	613.4	223.8	<2.51	90.38	5.80

[1] MSED1 and MSED2 are separate samples.

Table A2, continued. Metal concentrations in sediments from Little Bayou Creek and effluents collected March 21-23, 2005.

Station	Date	Sample[1]	Sediment Metal Conc. (µg/g) Pb	Sb	Se	Si	Sn	Sr
LB1	03/22/05	MSED1	20.13	0.75	<0.25	84.34	0.68	10.14
LB1	03/22/05	MSED2	8.59	0.29	<0.25	87.66	0.44	8.35
LB2A	03/23/05	MSED1	9.19	<0.25	<0.25	79.58	<0.25	7.69
LB2A	03/23/05	MSED2	6.24	0.33	<0.25	79.56	<0.25	9.53
LB2	03/23/05	MSED1	7.17	0.49	<0.25	86.35	<0.25	9.66
LB2	03/23/05	MSED2	5.22	<0.25	<0.25	82.22	<0.25	10.02
LB3	03/23/05	MSED1	6.09	<0.25	<0.25	85.26	<0.25	7.84
LB3	03/23/05	MSED2	4.44	<0.25	<0.25	80.93	<0.25	8.78
LB4	03/22/05	MSED1	29.86	2.62	<0.25	74.47	1.50	6.64
LB4	03/22/05	MSED2	3.86	<0.25	<0.25	80.66	<0.25	3.76
001	03/23/05	MSED1	10.58	0.94	<0.27	82.05	0.92	16.18
001	03/23/05	MSED2	15.18	1.29	<0.25	80.70	1.08	4.91
006	03/23/05	MSED1	6.30	<0.26	<0.26	83.80	<0.26	4.02
006	03/23/05	MSED2	10.09	0.80	<0.25	82.43	0.87	3.70
008	03/23/05	MSED1	6.24	<0.25	<0.25	82.50	0.65	5.99
008	03/23/05	MSED2	5.62	0.30	<0.25	80.08	0.63	4.15
010011	03/23/05	MSED1	10.75	0.60	<0.25	80.86	0.92	9.17
010011	03/23/05	MSED2	12.33	0.67	<0.25	93.84	0.52	8.32

[1] MSED1 and MSED2 are separate samples.

Table A2, continued. Metal concentrations in sediments from Little Bayou Creek and effluents collected March 21-23, 2005.

Station	Date	Sample[1]	Sediment Metal Conc. (µg/g)			
			Ti	Tl	V	Zn
LB1	03/22/05	MSED1	32.40	0.47	42.13	59.88
LB1	03/22/05	MSED2	21.08	0.48	16.87	31.25
LB2A	03/23/05	MSED1	12.25	1.24	16.43	16.94
LB2A	03/23/05	MSED2	4.29	0.67	18.38	18.77
LB2	03/23/05	MSED1	3.32	1.03	12.80	43.81
LB2	03/23/05	MSED2	8.44	0.76	11.28	21.09
LB3	03/23/05	MSED1	14.83	0.28	10.65	22.91
LB3	03/23/05	MSED2	14.25	0.43	10.23	18.27
LB4	03/22/05	MSED1	25.98	0.31	45.04	65.95
LB4	03/22/05	MSED2	11.53	<0.25	8.39	13.73
001	03/23/05	MSED1	31.59	0.33	45.51	20.51
001	03/23/05	MSED2	22.57	0.96	43.28	24.16
006	03/23/05	MSED1	20.07	<0.26	13.46	10.58
006	03/23/05	MSED2	23.60	<0.25	38.30	20.05
008	03/23/05	MSED1	7.95	0.45	14.63	25.22
008	03/23/05	MSED2	8.32	0.45	13.79	22.98
010011	03/23/05	MSED1	5.37	<0.25	26.28	69.41
010011	03/23/05	MSED2	8.12	0.38	24.24	67.72

[1] MSED1 and MSED2 are separate samples.

Table A3. Metal concentrations in floodplain soils from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Floodplain Soil Metal Conc. (µg/g)									
Station	Date	Sample[1]	Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr
MC	03/22/05	MFP1	<0.25	3866.1	3.29	62.56	30.39	0.34	369.4	0.86	2.98	12.15
MC	03/22/05	MFP2	<0.25	1565.4	3.46	<50.30	27.79	0.35	234.5	1.19	2.34	23.50
BB1A	03/21/05	MFP1	<0.25	1762.2	3.21	<50.18	21.95	<0.25	245.6	0.53	2.33	6.66
BB1A	03/21/05	MFP2	<0.25	2675.8	3.57	<50.23	24.12	0.29	518.6	0.60	3.26	7.21
BB1	03/21/05	MFP1	<0.25	1777.6	1.82	<50.79	36.66	<0.25	2967.2	0.47	1.44	5.35
BB1	03/21/05	MFP2	<0.26	1762.7	3.18	<51.47	16.85	0.36	2505.5	1.35	3.26	33.52
BB2A	03/21/05	MFP1	<0.25	4519.5	2.69	<50.58	36.57	0.29	1677.5	0.70	2.99	7.97
BB2A	03/21/05	MFP2	<0.25	4893.3	3.05	<50.35	41.58	0.34	1720.0	0.80	3.11	9.49
BB2	03/22/05	MFP1	<0.25	3515.0	2.40	<50.20	32.97	0.28	941.1	0.63	2.23	11.21
BB2	03/22/05	MFP2	<0.25	3023.8	2.57	<50.20	34.41	0.33	1134.8	0.72	2.60	10.89
BB3	03/21/05	MFP1	<0.25	4096.1	<2.52	<50.45	31.39	0.37	722.2	0.87	2.81	11.51
BB3	03/21/05	MFP2	<0.25	4834.6	3.08	<50.25	33.86	0.33	987.5	0.75	2.65	19.46
BB4	03/21/05	MFP1	<0.25	3468.7	2.82	<50.03	30.12	0.30	784.8	0.69	2.88	8.67
BB4	03/21/05	MFP2	<0.25	1408.0	2.68	<50.23	19.08	<0.25	271.7	0.47	1.81	8.91
BB5	03/21/05	MFP1	<0.26	2028.4	<2.59	<51.89	25.45	0.27	627.2	0.59	2.49	9.13
BB5	03/21/05	MFP2	<0.25	3466.5	1.93	<50.74	31.62	<0.25	1258.4	0.52	2.11	5.82
BB6	03/22/05	MFP1	<0.26	1757.6	3.11	<51.63	18.54	<0.26	283.0	0.51	1.83	7.71
BB6	03/22/05	MFP2	<0.25	3727.2	2.50	<50.74	32.59	<0.25	1069.9	0.56	2.11	7.59
BB7	03/22/05	MFP1	<0.25	3239.0	2.47	<50.35	27.49	<0.25	663.1	0.56	2.06	6.62
BB7	03/22/05	MFP2	<0.25	4116.7	<2.51	<50.13	26.85	0.29	712.5	0.89	1.79	10.68
BB8	03/22/05	MFP1	<0.26	1144.7	1.04	<50.94	12.46	<0.26	171.2	0.31	1.31	8.21
BB8	03/22/05	MFP2	<0.26	5762.0	2.34	<51.76	44.35	0.33	989.5	0.78	2.95	10.53
BB9	03/22/05	MFP1	<0.25	3473.5	1.43	<50.48	27.61	<0.25	662.6	0.50	2.08	8.81
BB9	03/22/05	MFP2	<0.25	5683.7	<2.54	<50.71	52.82	0.53	1756.1	1.16	4.54	12.40

[1] MFP1 and MFP2 are separate samples.

Table A3, continued. Metal concentrations in floodplain soils from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Floodplain Soil Metal Conc. (µg/g)								
Station	Date	Sample[1]	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
MC	03/22/05	MFP1	4.12	11557.0	410.3	3.89	529.4	511.2	<2.54	61.34	5.25
MC	03/22/05	MFP2	2.99	10325.0	210.2	0.98	186.4	362.3	<2.52	53.48	5.93
BB1A	03/21/05	MFP1	2.16	6654.2	279.6	1.69	276.9	328.9	<2.51	54.73	2.56
BB1A	03/21/05	MFP2	3.05	8225.5	390.0	2.57	449.7	496.5	<2.51	58.06	3.45
BB1	03/21/05	MFP1	3.98	5003.7	362.8	1.88	553.8	264.4	<2.54	58.93	2.72
BB1	03/21/05	MFP2	3.09	11444.9	250.1	1.55	486.1	155.9	<2.57	65.42	4.54
BB2A	03/21/05	MFP1	4.98	9062.1	618.4	5.43	722.9	482.7	<2.53	62.68	5.10
BB2A	03/21/05	MFP2	5.73	10625.8	636.5	5.99	717.0	532.1	<2.52	63.17	5.56
BB2	03/22/05	MFP1	4.76	8506.1	468.6	5.40	635.1	339.2	<2.51	48.48	5.34
BB2	03/22/05	MFP2	4.21	9230.1	433.4	4.29	572.2	480.5	<2.51	48.32	6.74
BB3	03/21/05	MFP1	3.76	11750.5	461.2	4.16	481.3	414.0	<2.52	60.49	4.36
BB3	03/21/05	MFP2	6.17	10218.3	592.4	5.89	653.2	367.3	<2.51	62.45	5.44
BB4	03/21/05	MFP1	3.72	7473.0	463.4	3.66	575.7	454.3	<2.50	59.08	4.16
BB4	03/21/05	MFP2	2.09	6765.8	195.9	1.28	186.1	211.8	<2.51	53.49	2.49
BB5	03/21/05	MFP1	2.70	8061.1	290.2	1.88	352.0	326.1	<2.59	57.85	3.01
BB5	03/21/05	MFP2	4.20	6546.6	409.8	3.90	537.3	390.2	<2.54	62.37	4.20
BB6	03/22/05	MFP1	2.03	6980.6	203.4	1.54	244.1	221.8	<2.58	57.17	2.45
BB6	03/22/05	MFP2	5.80	7138.3	475.7	4.08	549.1	445.8	<2.54	61.72	4.56
BB7	03/22/05	MFP1	3.37	6845.1	394.0	3.48	470.5	616.7	<2.52	61.98	3.93
BB7	03/22/05	MFP2	4.42	10241.2	475.2	4.31	572.5	853.9	<2.51	60.84	5.23
BB8	03/22/05	MFP1	1.66	4106.4	121.2	1.03	132.9	92.8	<2.55	55.12	1.84
BB8	03/22/05	MFP2	6.83	10252.8	871.5	7.42	809.9	524.7	<2.59	66.86	6.87
BB9	03/22/05	MFP1	4.47	6616.1	368.9	4.58	519.1	245.1	<2.52	64.00	4.53
BB9	03/22/05	MFP2	9.88	13951.1	1102.0	10.22	1238.0	953.9	<2.54	67.18	11.75

[1] MFP1 and MFP2 are separate samples.

Table A3, continued. Metal concentrations in floodplain soils from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Floodplain Soil Metal Conc. (µg/g)					
Station	Date	Sample[1]	Pb	Sb	Se	Si	Sn	Sr
MC	03/22/05	MFP1	8.42	0.40	<0.25	85.51	<0.25	3.54
MC	03/22/05	MFP2	4.88	0.64	<0.25	76.20	0.65	1.93
BB1A	03/21/05	MFP1	6.09	<0.25	<0.25	71.90	<0.25	2.03
BB1A	03/21/05	MFP2	7.97	0.35	<0.25	74.68	<0.25	3.55
BB1	03/21/05	MFP1	4.44	<0.25	<0.25	75.59	0.61	9.94
BB1	03/21/05	MFP2	34.86	0.53	<0.26	75.45	0.88	14.97
BB2A	03/21/05	MFP1	7.35	<0.25	<0.25	75.03	<0.25	15.96
BB2A	03/21/05	MFP2	8.28	<0.25	<0.25	73.23	<0.25	18.90
BB2	03/22/05	MFP1	8.52	0.35	<0.25	67.36	<0.25	7.28
BB2	03/22/05	MFP2	8.19	<0.25	<0.25	68.00	<0.25	9.02
BB3	03/21/05	MFP1	8.37	0.50	<0.25	74.05	<0.25	6.44
BB3	03/21/05	MFP2	10.22	0.41	<0.25	74.22	<0.25	5.84
BB4	03/21/05	MFP1	7.52	<0.25	<0.25	73.71	<0.25	7.45
BB4	03/21/05	MFP2	5.16	<0.25	<0.25	71.93	<0.25	2.25
BB5	03/21/05	MFP1	7.65	<0.26	<0.26	78.11	0.43	4.05
BB5	03/21/05	MFP2	5.46	<0.25	<0.25	84.59	<0.25	8.41
BB6	03/22/05	MFP1	5.36	<0.26	<0.26	75.27	<0.26	2.48
BB6	03/22/05	MFP2	8.49	<0.25	<0.25	89.80	<0.25	7.02
BB7	03/22/05	MFP1	9.58	<0.25	<0.25	76.80	<0.25	6.11
BB7	03/22/05	MFP2	9.60	<0.25	<0.25	82.13	<0.25	5.57
BB8	03/22/05	MFP1	3.63	<0.26	<0.26	74.12	0.50	1.78
BB8	03/22/05	MFP2	8.65	0.32	<0.26	79.28	<0.26	9.11
BB9	03/22/05	MFP1	5.33	<0.25	<0.25	86.77	<0.25	5.26
BB9	03/22/05	MFP2	10.93	0.61	<0.25	81.54	0.48	9.72

[1] MFP1 and MFP2 are separate samples.

Table A3, continued. Metal concentrations in floodplain soils from Massac Creek (MC) and Big Bayou Creek collected March 21-23, 2005.

			Floodplain Soil Metal Conc. (µg/g)			
Station	Date	Sample[1]	Ti	Tl	V	Zn
MC	03/22/05	MFP1	45.29	0.41	18.43	15.36
MC	03/22/05	MFP2	27.96	0.29	22.43	13.58
BB1A	03/21/05	MFP1	39.31	1.20	13.25	7.67
BB1A	03/21/05	MFP2	37.44	0.55	15.57	11.52
BB1	03/21/05	MFP1	25.96	0.27	8.22	22.08
BB1	03/21/05	MFP2	18.58	<0.26	13.04	20.60
BB2A	03/21/05	MFP1	27.37	1.00	14.66	22.47
BB2A	03/21/05	MFP2	31.22	0.79	16.77	23.75
BB2	03/22/05	MFP1	27.16	0.83	14.79	18.89
BB2	03/22/05	MFP2	31.77	1.07	17.15	23.25
BB3	03/21/05	MFP1	29.16	0.75	20.66	17.15
BB3	03/21/05	MFP2	30.43	1.36	17.65	25.38
BB4	03/21/05	MFP1	36.95	1.03	16.28	17.61
BB4	03/21/05	MFP2	37.17	1.26	13.13	7.69
BB5	03/21/05	MFP1	26.54	0.89	14.22	12.16
BB5	03/21/05	MFP2	31.74	0.66	11.38	17.72
BB6	03/22/05	MFP1	35.99	0.44	13.06	8.52
BB6	03/22/05	MFP2	34.56	1.16	12.51	19.13
BB7	03/22/05	MFP1	31.60	0.64	12.10	15.15
BB7	03/22/05	MFP2	32.84	0.87	18.23	18.00
BB8	03/22/05	MFP1	30.38	0.75	9.30	6.74
BB8	03/22/05	MFP2	33.87	0.96	16.85	28.44
BB9	03/22/05	MFP1	39.28	0.84	10.97	20.05
BB9	03/22/05	MFP2	28.42	0.81	18.00	47.73

[1] MFP1 and MFP2 are separate samples.

Table A4. Metal concentrations in floodplain soils from Little Bayou Creek and effluents collected March 21-23, 2005.

			Floodplain Soil Metal Conc. (µg/g)									
Station	Date	Sample[1]	Ag	Al	As	B	Ba	Be	Ca	Cd	Co	Cr
LB1	03/22/05	MFP1	<0.26	5719.1	4.46	<51.39	39.29	0.45	2121.5	1.28	3.05	12.48
LB1	03/22/05	MFP2	<0.26	3453.5	0.70	<50.99	20.45	<0.26	105.4	0.38	1.58	5.65
LB2A	03/23/05	MFP1	0.31	4555.1	2.47	<50.48	38.87	<0.25	972.6	0.63	1.50	52.32
LB2A	03/23/05	MFP2	<0.25	4674.6	1.46	<50.05	38.04	<0.25	634.0	0.54	1.73	65.04
LB2	03/23/05	MFP1	<0.25	3802.7	2.16	<50.25	36.63	0.29	1185.4	0.59	2.65	20.35
LB2	03/23/05	MFP2	<0.25	3663.0	1.66	<50.15	23.75	<0.25	547.4	0.45	2.04	45.44
LB3	03/23/05	MFP1	<0.25	3672.3	1.54	<50.74	27.88	<0.25	1067.7	0.50	2.08	13.86
LB3	03/23/05	MFP2	<0.26	3542.9	1.68	<51.05	31.96	<0.26	1347.8	0.51	2.13	15.80
LB4	03/22/05	MFP1	<0.25	2126.2	0.82	<50.03	26.47	<0.25	883.4	0.33	1.30	26.12
LB4	03/22/05	MFP2	<0.26	2785.0	0.92	<50.92	34.70	<0.26	1314.5	0.42	1.45	21.95
001	03/23/05	MFP1	<0.25	4779.3	2.84	<50.00	85.57	0.35	949.1	0.78	1.94	11.84
001	03/23/05	MFP2	<0.25	5230.1	<2.52	<50.43	59.80	0.34	837.5	0.77	2.02	10.11
006	03/23/05	MFP1	<0.25	4124.3	3.27	<50.43	28.83	0.33	828.5	0.74	2.69	10.77
006	03/23/05	MFP2	<0.25	4892.9	<2.51	<50.28	33.72	0.36	1040.6	0.82	2.76	12.41
008	03/23/05	MFP1	<0.25	3015.3	0.86	<50.20	25.76	<0.25	774.3	0.44	1.67	8.69
008	03/23/05	MFP2	<0.25	2619.4	1.17	<50.03	22.39	<0.25	730.4	0.57	1.80	10.35
010011	03/23/05	MFP1	<0.25	2554.1	0.25	<50.51	23.93	<0.25	1148.9	0.40	1.33	14.49
010011	03/23/05	MFP2	<0.25	2609.8	0.80	<50.03	25.60	<0.25	1198.9	0.43	1.41	16.01

[1] MFP1 and MFP2 are separate samples.

Table A4, continued. Metal concentrations in floodplain soils from Little Bayou Creek and effluents collected March 21-23, 2005.

			Floodplain Soil Metal Conc. (µg/g)								
Station	Date	Sample[1]	Cu	Fe	K	Li	Mg	Mn	Mo	Na	Ni
LB1	03/22/05	MFP1	8.17	10722.1	702.2	7.93	1090.9	491.9	<2.57	66.74	6.32
LB1	03/22/05	MFP2	3.24	5317.9	414.1	4.14	500.6	82.6	<2.55	59.94	3.03
LB2A	03/23/05	MFP1	8.09	8078.9	405.5	5.70	753.7	111.1	<2.52	63.50	5.13
LB2A	03/23/05	MFP2	7.37	7144.9	422.4	5.96	731.0	195.0	<2.50	64.55	5.05
LB2	03/23/05	MFP1	4.68	7808.8	427.4	3.58	521.7	228.2	<2.51	103.93	4.52
LB2	03/23/05	MFP2	4.91	6142.9	412.7	3.61	469.9	300.7	<2.51	59.93	3.85
LB3	03/23/05	MFP1	4.13	6796.0	436.4	3.28	471.9	158.6	<2.54	64.72	3.66
LB3	03/23/05	MFP2	4.15	6866.5	417.2	3.59	480.3	338.9	<2.55	61.14	3.95
LB4	03/22/05	MFP1	4.15	4267.2	255.0	2.15	359.3	136.0	<2.50	56.02	2.95
LB4	03/22/05	MFP2	4.65	4236.8	395.4	2.91	553.5	440.4	<2.55	63.75	4.04
001	03/23/05	MFP1	5.69	10784.3	558.7	8.42	1213.4	166.5	<2.50	81.90	10.71
001	03/23/05	MFP2	6.21	10680.6	582.9	8.19	1147.3	294.9	<2.52	76.16	8.35
006	03/23/05	MFP1	4.60	10015.7	371.5	4.57	543.1	433.7	<2.52	62.45	4.97
006	03/23/05	MFP2	5.74	10953.8	435.5	5.72	636.3	447.4	<2.51	65.20	5.79
008	03/23/05	MFP1	3.51	5691.5	357.1	3.15	548.4	323.4	<2.51	60.54	3.96
008	03/23/05	MFP2	3.22	7767.4	298.4	2.63	460.5	308.2	<2.50	58.11	3.65
010011	03/23/05	MFP1	5.99	4147.5	376.0	2.95	485.6	97.3	<2.53	64.74	5.19
010011	03/23/05	MFP2	6.53	4197.6	376.0	3.06	489.4	241.5	<2.50	64.86	5.70

[1] MFP1 and MFP2 are separate samples.

Table A4, continued. Metal concentrations in floodplain soils from Little Bayou Creek and effluents collected March 21-23, 2005.

Station	Date	Sample[1]	Floodplain Soil Metal Conc. (µg/g)					
			Pb	Sb	Se	Si	Sn	Sr
LB1	03/22/05	MFP1	11.60	0.69	<0.26	91.15	<0.26	9.21
LB1	03/22/05	MFP2	6.98	<0.26	<0.26	80.16	<0.26	2.21
LB2A	03/23/05	MFP1	6.86	0.44	<0.25	82.12	<0.25	8.44
LB2A	03/23/05	MFP2	9.14	0.59	<0.25	100.56	<0.25	7.49
LB2	03/23/05	MFP1	6.49	<0.25	<0.25	97.36	<0.25	8.90
LB2	03/23/05	MFP2	5.90	0.38	<0.25	113.92	<0.25	4.66
LB3	03/23/05	MFP1	5.59	<0.25	<0.25	77.88	<0.25	9.63
LB3	03/23/05	MFP2	6.15	<0.26	<0.26	87.87	<0.26	8.37
LB4	03/22/05	MFP1	4.53	<0.25	<0.25	78.65	<0.25	4.68
LB4	03/22/05	MFP2	5.36	<0.26	<0.26	106.03	<0.26	8.60
001	03/23/05	MFP1	4.46	<0.25	<0.25	102.69	<0.25	11.23
001	03/23/05	MFP2	6.43	<0.25	<0.25	79.67	0.51	10.26
006	03/23/05	MFP1	8.08	0.31	<0.25	76.86	<0.25	5.91
006	03/23/05	MFP2	8.70	0.30	<0.25	77.91	<0.25	7.62
008	03/23/05	MFP1	5.90	<0.25	<0.25	76.16	<0.25	5.49
008	03/23/05	MFP2	5.77	<0.25	<0.25	75.59	0.52	5.01
010011	03/23/05	MFP1	3.16	<0.25	<0.25	77.39	<0.25	8.77
010011	03/23/05	MFP2	3.31	<0.25	<0.25	77.73	0.43	9.35

[1] MFP1 and MFP2 are separate samples.

Table A4, continued. Metal concentrations in floodplain soils from Little Bayou Creek and effluents collected March 21-23, 2005.

Station	Date	Sample[1]	Floodplain Soil Metal Conc. (µg/g)			
			Ti	Tl	V	Zn
LB1	03/22/05	MFP1	49.96	0.48	29.13	133.61
LB1	03/22/05	MFP2	25.54	<0.26	11.56	13.25
LB2A	03/23/05	MFP1	43.38	1.93	12.90	67.18
LB2A	03/23/05	MFP2	30.90	0.43	13.32	35.33
LB2	03/23/05	MFP1	19.53	1.17	14.37	26.09
LB2	03/23/05	MFP2	23.85	0.48	11.38	27.89
LB3	03/23/05	MFP1	17.32	0.78	12.19	27.54
LB3	03/23/05	MFP2	20.85	1.91	12.32	47.78
LB4	03/22/05	MFP1	24.45	0.49	8.57	44.30
LB4	03/22/05	MFP2	36.09	1.54	8.91	35.93
001	03/23/05	MFP1	84.93	0.67	19.81	19.71
001	03/23/05	MFP2	70.57	0.90	18.41	21.74
006	03/23/05	MFP1	29.66	0.58	16.81	18.71
006	03/23/05	MFP2	27.50	0.93	18.08	21.15
008	03/23/05	MFP1	30.23	0.90	12.15	14.60
008	03/23/05	MFP2	21.12	0.85	12.39	14.27
010011	03/23/05	MFP1	17.49	1.31	6.82	42.50
010011	03/23/05	MFP2	14.62	0.39	6.90	48.21

[1] MFP1 and MFP2 are separate samples.

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