Appendix 11

GSD Stream Reach Characterization and Evaluation Report

RW ARMSTRONG™
Inspiration to reality.

The Little Calumet River Stream Reach Characterization and Evaluation Report completed in October 2002 by Greeley & Hansen was used to identify the concentration of pollutants in the combined sewer overflows (CSOs) and in dry and wet weather in the West Branch of the Little Calumet River. The study area for this report stretched from Cline Avenue to Ripley Street with an additional sampling location on Deep River. Figure 1 shows the eleven (11) locations used for dry and wet weather sampling as well as the CSO discharge points.

Figures 2 to 13 graphically show the sampling results of the parameters that overlapped with the sampling conducted as part of this Little Calumet River Watershed Management Plan. These six (6) parameters are only a small portion of the constituents that were sampled for as part of this 2002 study. The tables included at the end of this appendix are those taken directly from the 2002 report by Greeley and Hansen for the Gary Sanitary District.

Each water quality sampling location (11 total) has a table presenting the dry weather sampling results and two tables showing the wet weather sampling results. There are also tables showing the CSO discharge parameters for each wet weather event sampled. These are also shown by each location having a table for both events.

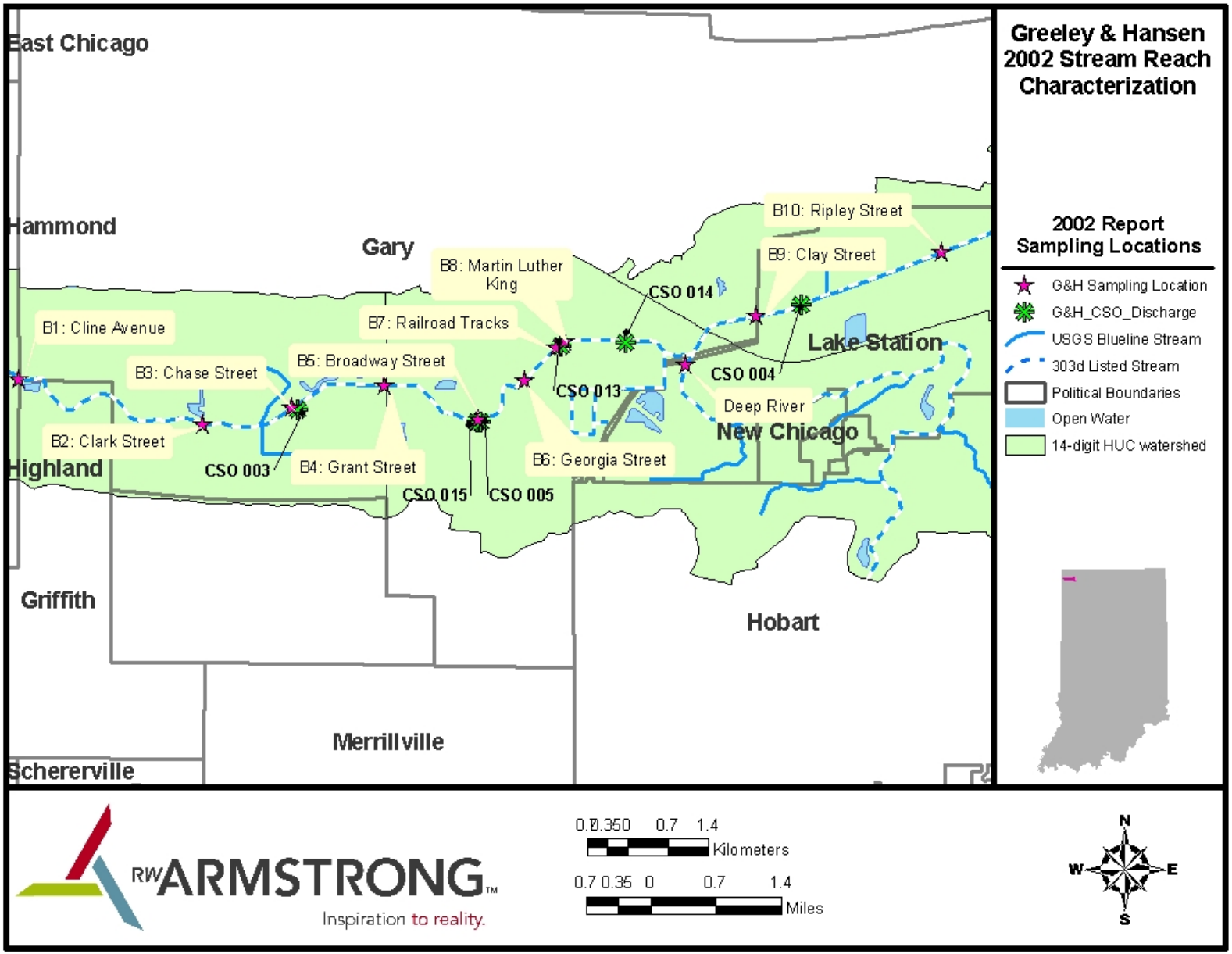

Figure 1: Greeley and Hansen sampling locations located along the Little Calumet River.

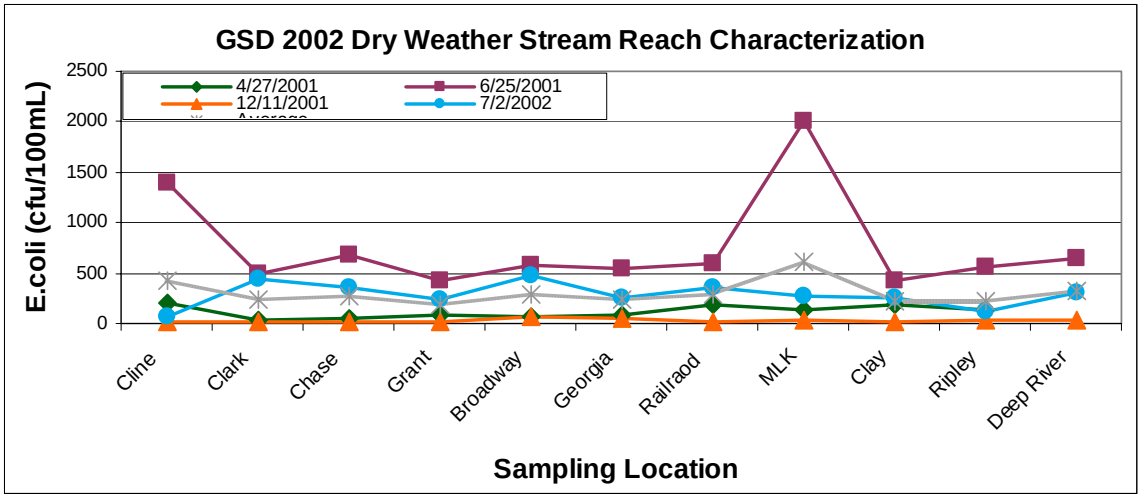

Figure 2: *E.coli* dry weather sampling results from 2002 study by Greeley and Hansen.

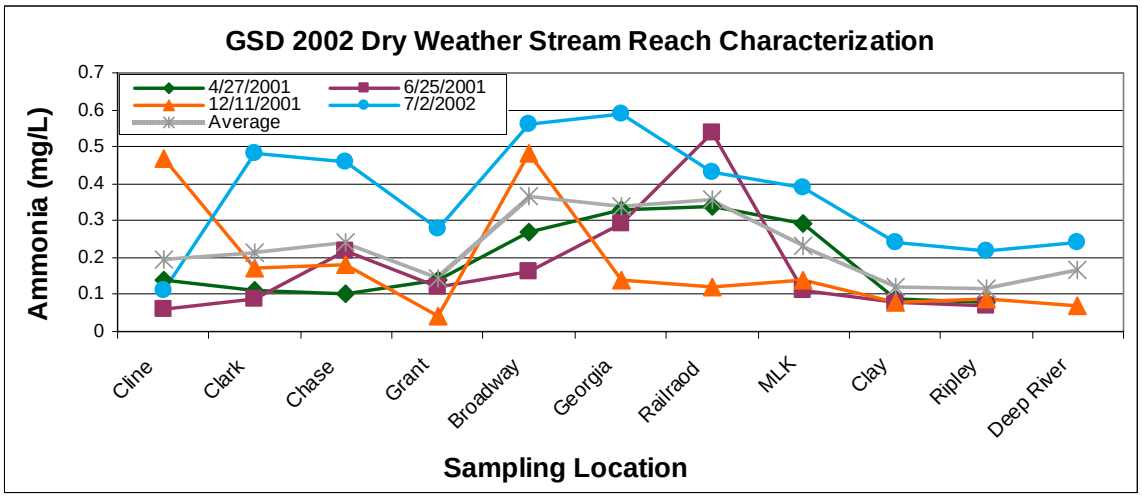

Figure 3: Ammonia dry weather sampling results from 2002 study by Greeley and Hansen.

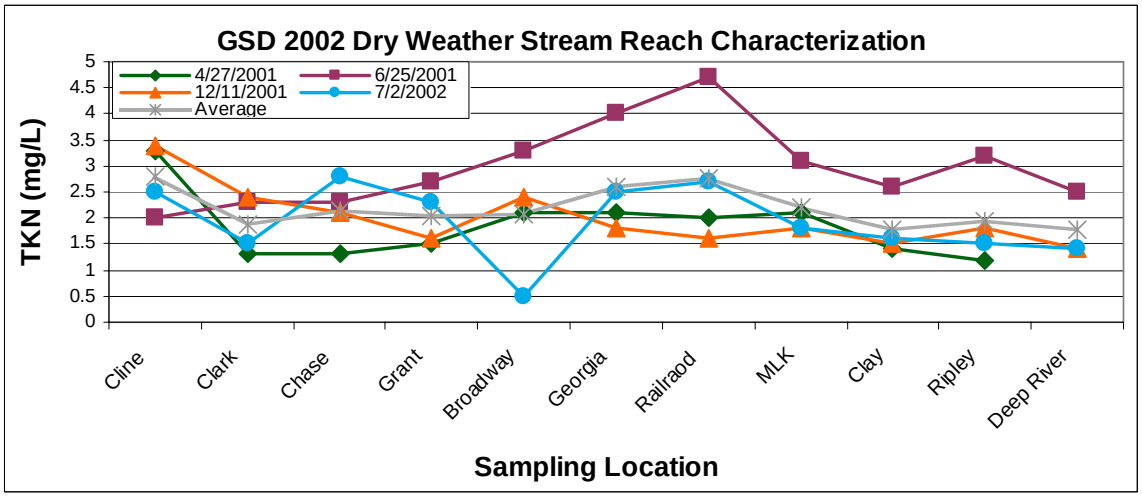

Figure 4: TKN dry weather sampling results from 2002 study by Greeley and Hansen.

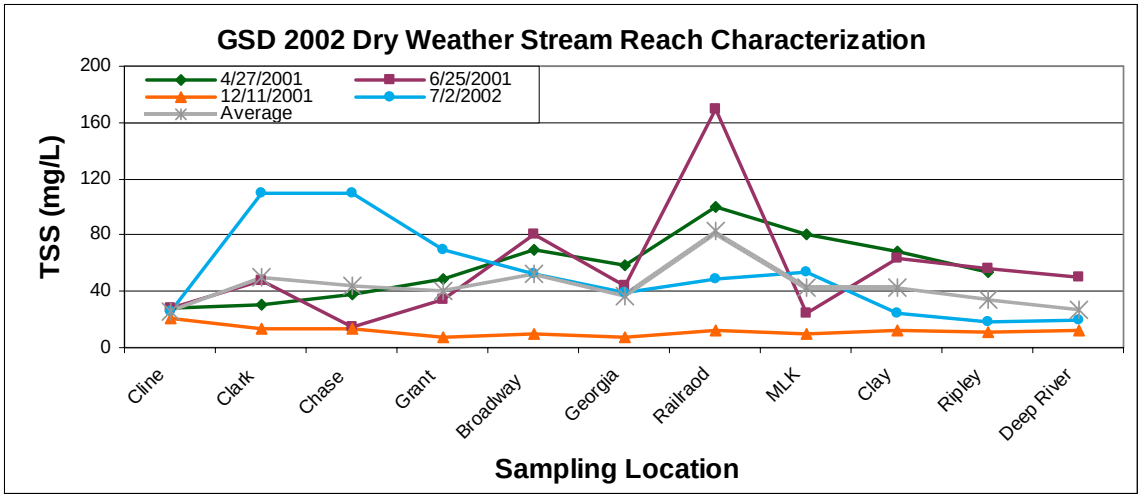

Figure 5: TSS dry weather sampling results from 2002 study by Greeley and Hansen.

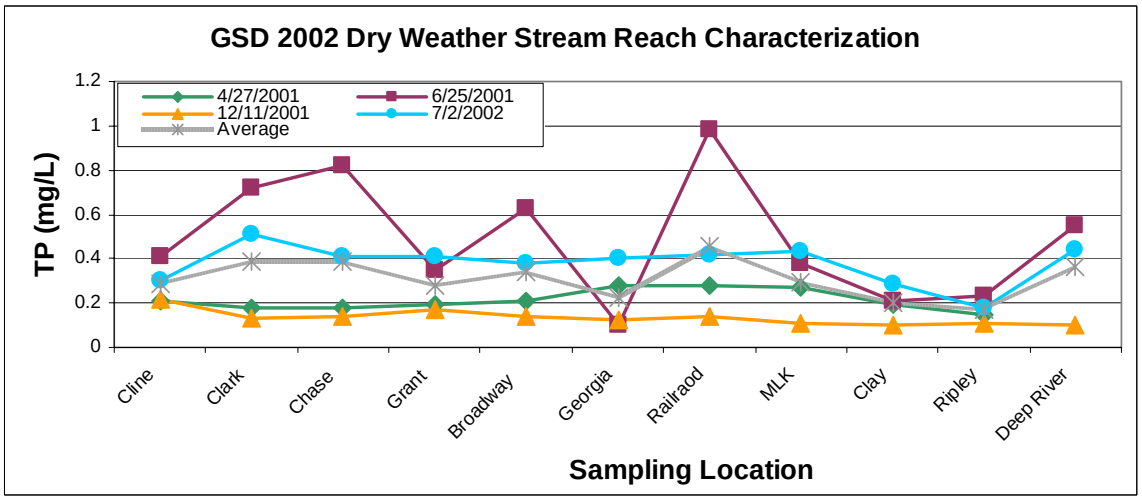

Figure 6: TP dry weather sampling results from 2002 study by Greeley and Hansen.

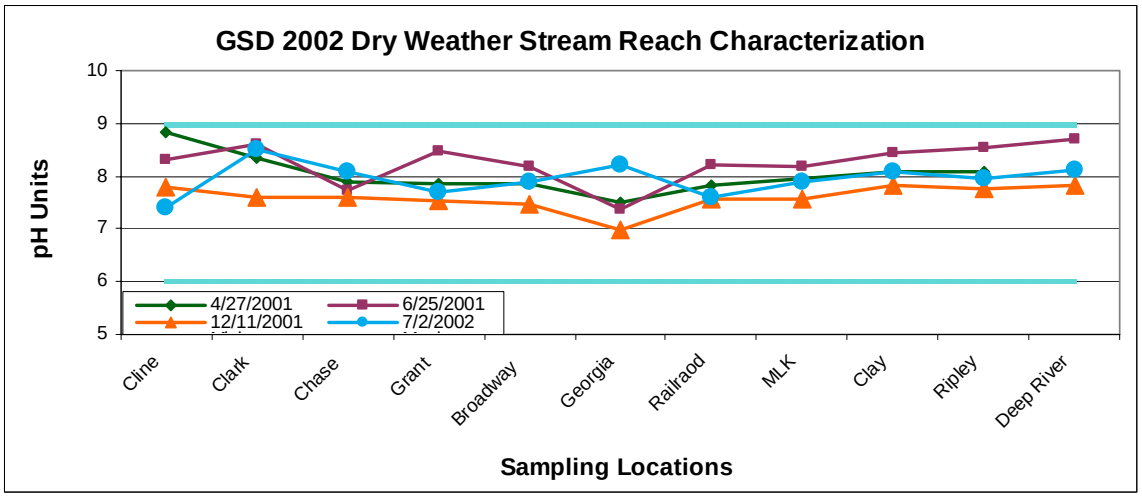

Figure 7: pH units dry weather sampling results from 2002 study by Greeley and Hansen.

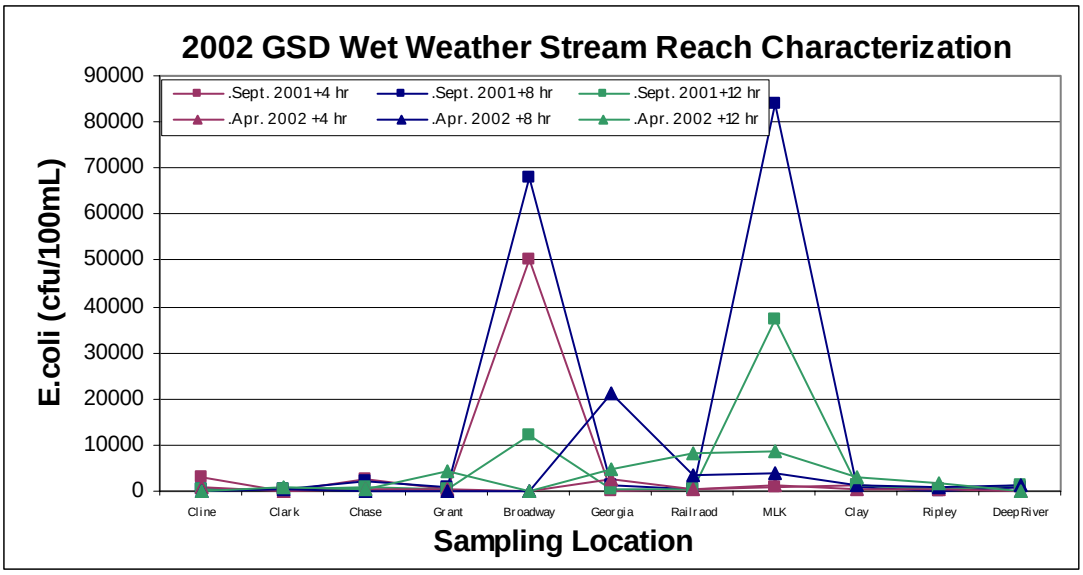

Figure 8: *E.coli* wet weather sampling results from 2002 study by Greeley and Hansen.

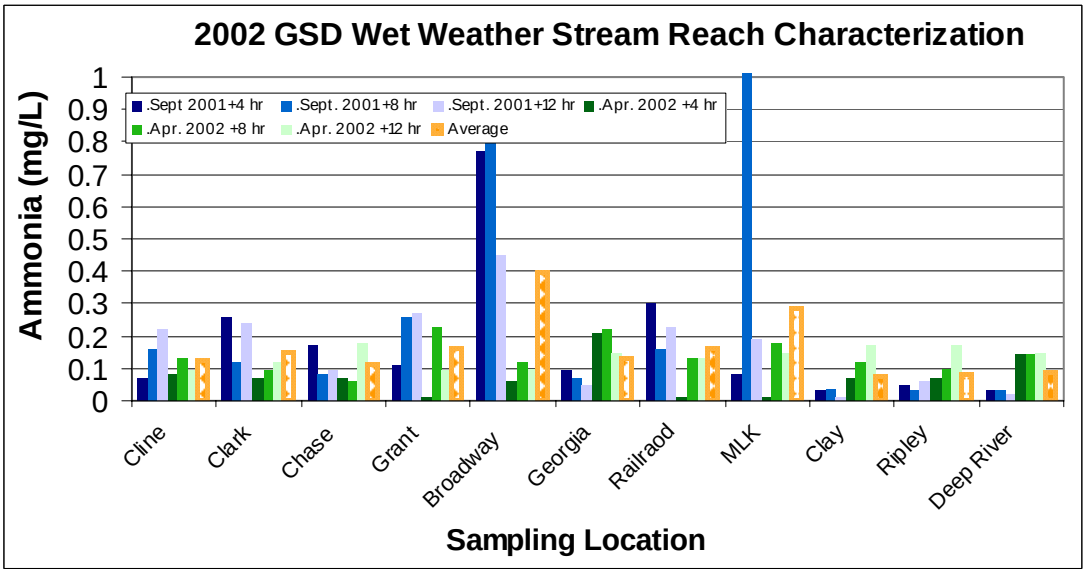

Figure 9: Ammonia wet weather sampling results from 2002 study by Greeley and Hansen.

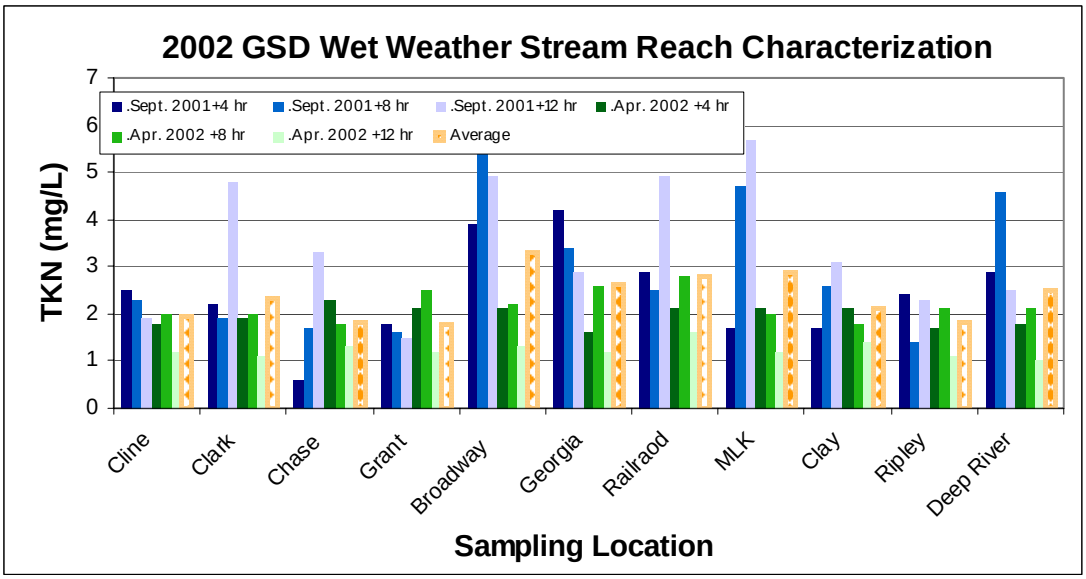

Figure 10: TKN wet weather sampling results from 2002 study by Greeley and Hansen.

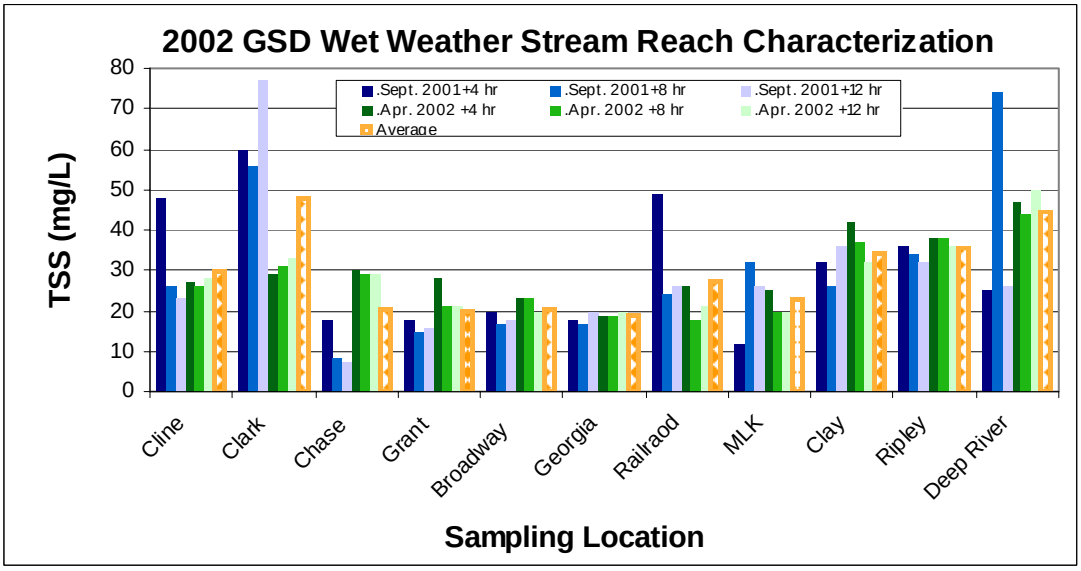

Figure 11: TSS wet weather sampling results from 2002 study by Greeley and Hansen.

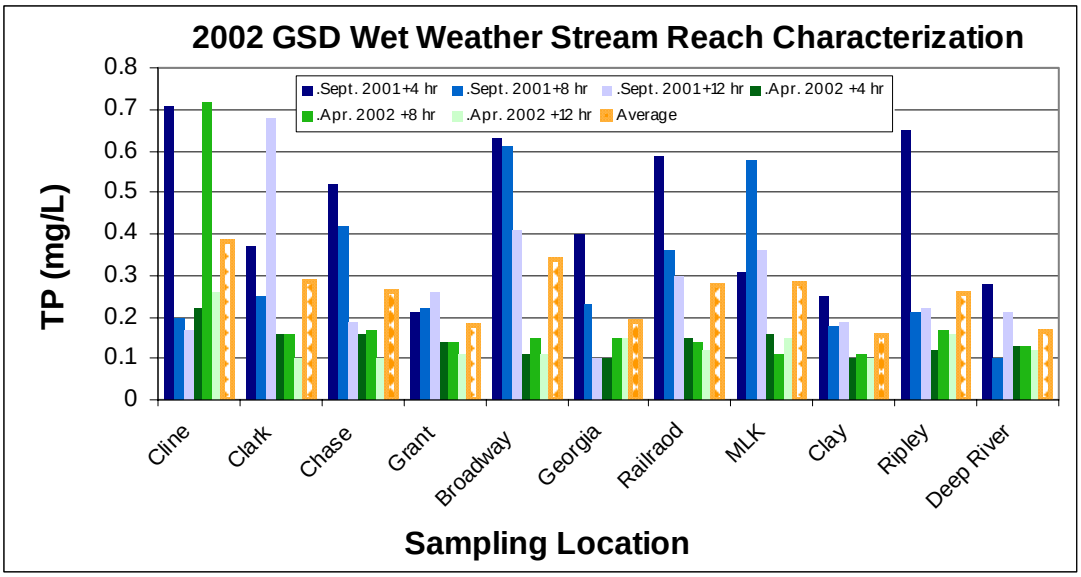

Figure 12: TP wet weather sampling results from 2002 study by Greeley and Hansen.

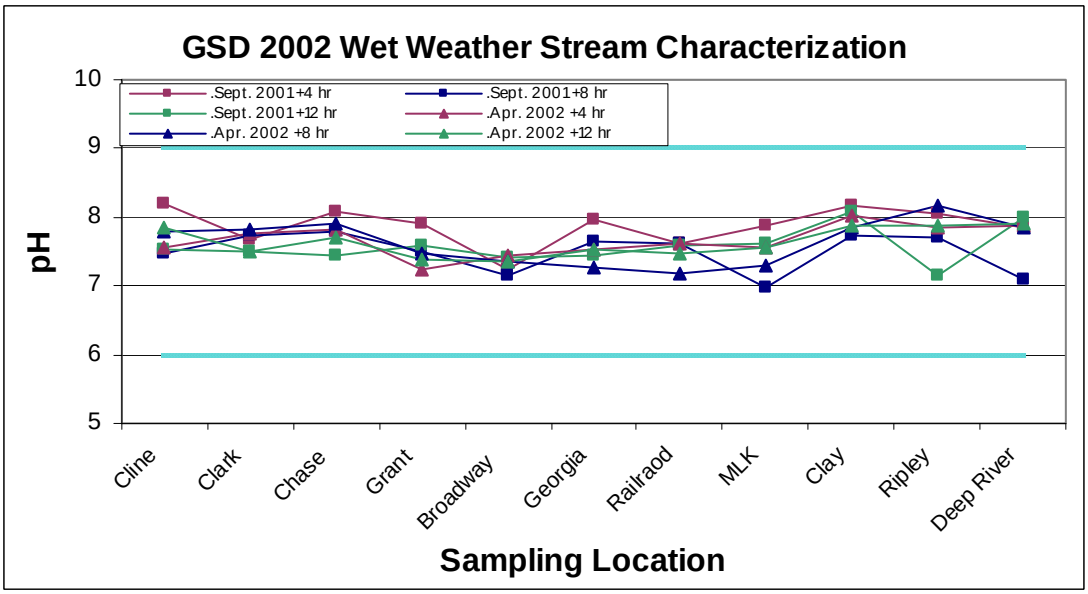

Figure 13: pH units wet weather sampling results from 2002 study by Greeley and Hansen.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-6
Cline Avenue Bridge (BT)
Dry Weather Analyses

PARAMETER	SAMPLE DATE: April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002	Geometric Mean[1,2]	Maximum Value[1]	Minimum Value[2,3]	Detection Limit	WATER QUALITY LIMITS: Acute	Chronic
CONVENTIONALS										
Fecal Coliform (CFU/100mL)	210	1496	22	70	242	1496	20	1	235	235
Oil and Grease	2.6	<2.0	2.0	<2.0	2.0	2.6	2.0	2.0	-	
Ammonia (NH3) as N	0.24	0.06	0.47	0.13	0.21	0.47	0.06	0.05	1.7	0.27
Carbonaceous Biochemical Oxygen Demand (CBOD)	18	14	22	17	17	18	14	2.0		
Chemical Oxygen Demand (COD)	79	65	95	45	64	95	40	20	-	
Chloride	1[illegible]	149	135	115	137	170	115	15	860	230
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.022	0.0052
Fluoride (F)	2.36	1.32	3.47	4.64	2.71	4.64	1.32	0.10	12	1.4
Hardness, Total as CaCO3	309	310	300	310	308	310	300	2.0		
Nitrogen, Total Kjeldahl as N (TKN)	3.4	2.0	3.4	2.5	2.7	3.4	2.0	0.50		-
Phosphorus, Total	0.21	0.41	0.21	0.3	0.27	0.41	0.21	0.10	-	
Solids, Total Dissolved (TDS)	555	395	395	525	447	555	480	15		-
Solids, Total Suspended (TSS)	28	28	21	29	26	28	21	5.0		-
Solids, Total Volatile Suspended (TVSS)	23	19	8.0	11.0	13	23	8.0	1.0	-	
Sulfide (S2-)	140	80	62	96	91	140	80	5.0	-	
pH (pH units)	8.84	8.31	7.80	7.40	8.07	8.84	7.40	0.01	6.0 - 9.0	6.0 - 9.0
METALS										
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	0.01	0.34	0.15
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	0.02	0.00	0.02	<0.00	0.02	0.34	0.15
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	0.005	0.000	0.005	0.000	0.005	0.0[illegible]	[illegible]
Cadmium (Cd), Dissolved	<0.005	<0.005	0.005	<0.005	0.005	0.005	0.000	0.005	0.0175	[illegible]
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	3.0	0.04
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	1.59	0.02
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.00	0.01	0.046	0.027
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.011	0.009
Iron (Fe), Total Recoverable	0.10	1.15	[illegible]	0.79	0.85	2.05	0.29	0.05		
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.00	0.05	-	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.00	0.05	0.66	0.065
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.00	0.05	2.97	0.032
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	0.0000	0.0002	0.0017	0.0091
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	0.0000	0.0002	0.0014	0.0077
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.00	0.01	1.4	0.151
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	0.00	0.01	0.00	0.01	1.35	0.15
Zinc (Zn), Total Recoverable	<0.01	0.01	0.05	0.02	0.02	0.05	0.01	0.01	0.45	0.35
Zinc (Zn), Dissolved	0.02	<0.01	0.02	<0.01	0.01	0.02	0.01	0.01	0.31	0.31
PESTICIDES										
Heptachlor	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Aldrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
alpha-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
beta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
delta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
gamma-BHC (Lindane)	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	0.5
Chlordane	ND	ND	ND	ND	0.00	0.00	0.00	2.50	-	[illegible]
4,4'-DDD	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Heptachlor Epoxide	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
4,4'-DDE	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
4,4'-DDT	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Dieldrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	[illegible]
Endosulfan I	ND	ND	ND	ND	0.00	0.00	0.00	0.05	0.24	[illegible]
Endosulfan II	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Endosulfan Sulfate	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Endrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
NOTES										

All conventional parameters and metals are reported in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4(a) (NPDES) in which samples with concentrations below the detection limit are assigned the value "0."

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-7
Clark Street Bridge (B2)
Dry Weather Analyses

PARAMETER	SAMPLE DATE April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002	Geometric Mean[1,4]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	WATER QUALITY LIMITS Acute	Chronic
CONVENTIONALS										
Lipids (FET 100mL)	36	810	10	440	96	506	16	10	255	125
Grease & Grease	<2.0	<2.0	<2.0	<2.0	0.0	0.0	0.0	2.0		
Ammonia (NH3) as N	4.11	0.69	0.21	7.48	0.17	<0.48	0.09	0.01	1.2	<0.7
Carbonaceous Biochemical Oxygen Demand (CBOD)	6.6	11	3.6	8.2	7.1	14	3.6	2.0		
Chemical Oxygen Demand (COD)	52	97	40	55	62	97	40	20		
Chloride	170	164	170	155	165	170	160	10	860	230
Cyanide, Weak Acid Dissociable (WCN)	<0.005	<0.005	<0.005	<0.005	<0.005	0.010	0.005	<0.005	0.022	<0.005
Fluoride (F)	1.72	1.11	1.17	2.35	1.54	2.35	1.11	0.10	12	1.4
Hardness, Total as CaCO3	196	[illegible]	310	450	356	450	310	2.0		
Nitrogen, Total Kjeldahl as N (TKN)	1.3	2.3	2.4	2.5	1.8	2.4	1.3	0.20	-	-
Phosphorus, Total	0.28	0.72	0.15	0.51	0.33	0.72	0.13	0.10	-	-
Solids, Total Dissolved (TDS)	690	620	550	610	623	690	550	10	-	-
Solids, Total Suspended (TSS)	93	48	13	19	35	110	13	2.0		
Solids, Total Volatile Suspended (TVSS)	32	21	11	25	20	25	10	1.0		
Sulfate (SO_4)	126	91	92		96	130	92	5.0		
pH (pH units)	8.39	8.29	7.6	8.29	8.25	8.39	7.60	0.01	6 pH 9	6 pH 9
METALS										
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.14	0.15
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	0.00	0.00	0.02	0.34	0.15
Cadmium (Cd), Total Recoverable	<0.0005	<0.005	<0.005	<0.005	0.0005	0.005	0.0005	0.0005	0.0159	0.0009
Cadmium (Cd), Dissolved	<0.0005	<0.005	<0.005	<0.005	0.0005	0.005	0.0005	0.0005	0.0175	0.0250
Chromium (Cr), Total Recoverable	<0.02	<0.01	<0.01	<0.01	0.01	0.02	0.00	0.01	5.0	1.21
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.02	0.01	0.02	0.00	0.01	1.10	1.21
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.00	0.01	0.019	0.07
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.00	0.01	0.044	0.26
Iron (Fe), Total Recoverable	1.56	1.99	2.24	3.75	1.70	3.75	1.56	0.05		
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.00	0.05	-	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.00	0.05	0.95	0.02
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.00	0.05	0.50	0.02
Mercury (Hg), Total Recoverable	0.0002	<0.0002	<0.0002	<0.0002	0.0001	0.0002	0.0000	0.0002	0.0017	0.0000
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0001	0.0000	0.0000	0.0002	0.0013	0.0077
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.00	0.01	2.78	1.61
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.00	0.01	1.55	1.61
Zinc (Zn), Total Recoverable	<0.01	0.01	0.02	0.03	0.02	0.02	0.01	0.01	0.35	1.55
Zinc (Zn), Dissolved	0.01	<0.01	0.01	0.02	0.02	0.02	0.01	0.01	0.34	2.34
PESTICIDES										
Heptachlor	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	
Aldrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Alpha-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Beta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Delta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
gamma-BHC (Lindane)	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Chlordane	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
4,4'-DDD	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	0.00223
Heptachlor Epoxide	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
4,4'-DDE	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
4,4'-DDT	ND	ND	ND	ND	0.00	0.00	0.00	0.05		-
Dieldrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05		0.00013
Endosulfan I	ND	ND	ND	ND	0.00	0.00	0.00	0.05	0.34	0.00056
Endosulfan II	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Endosulfan Sulfate	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Endrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05		-
Toxaphene	ND	ND	ND	ND	0.00	0.00	0.00	0.05	0.086	0.036

NOTES
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
[1] Geometric mean calculated using method identified in 327 IAC 2-1-4 (a)(5)(C) in which samples with concentrations below the detection limit are assigned the value "0".
[2] If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3] The minimum value may be equal to a calculated "0" value.

Bridge B2 Clark St
Clark

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-8
Chase Street Bridge (B3)
Dry Weather Analysis

PARAMETER	SAMPLE DATE				Geometric Mean[1,2]	Maximum Value[1]	Minimum Value[1,3]	Detection Limit	WATER QUALITY LIMITS	
	April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002					Acute	Chronic
CONVENTIONALS										
Fecal Coliform (cfu/100 ml)	50	650	13	350	104	650	10	10	245	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	0.0	0.0	0.0	2.0		
Ammonia (NH3 as N)	0.12	0.22	0.58	0.46	0.21	0.46	0.12	0.0	2.2	0.27
Carbonaceous Biochemical Oxygen Demand (CBOD)	<2.0	9.8	3.2	2.4	4.3	9.8	1.5	2.0	-	-
Chemical Oxygen Demand (COD)	60	95	59	80	70	95	59	20	-	-
Chloride	190	340	120	412	197	412	120	10	860	230
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.022	0.0052
Fluoride, (F)	1.24	1.46	1.74	1.36	1.38	1.36	1.24	0.10	12	1.4
Hardness, Total as CaCO3	350	340	350	350	347	350	340	2.0	-	-
Nitrogen, Total Kjeldahl as N (TKN)	1.3	2.3	2.1	2.5	2.0	2.5	1.3	0.5		
Phosphorus, Total	0.18	0.52	0.14	0.11	0.22	0.52	0.14	0.10	-	-
Solids, Total Dissolved (TDS)	650	586	510	626	594	660	510	10		
Solids, Total Suspended (TSS)	38	18	14	110	31	110	14	2.0		
Solids, Total Volatile Suspended (TVSS)	9.6	8.5	6.4	20	8	20	6.4	1.0	-	-
Sulfate (SO4)	170	47	70		71	190	47	5.0		
pH (pH Units)	7.88	7.15	7.62	8.12	7.63	8.12	7.61	0.1	6 - pH - 9	6 - pH - 9
METALS										
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.09	0.00	0.01	0.34	0.15
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	0.02	0.06	0.00	0.02	<0.14	0.15
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	0.000	0.005	0.000	0.005	0.0156	0.0066
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	0.000	0.000	0.000	0.005	0.0175	0.0066
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	3.2	0.24
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	3.2	0.24
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.00	0.06	0.00	0.01	0.59	0.21
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	0.00	0.04	0.00	0.01	0.949	0.027
Iron (Fe), Total Recoverable	1.22	1.02	1.28	3.6	1.54	3.6	1.02	0.05	3.984	0.426
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	0.02	0.08	0.00	0.05	-	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	0.05	0.06	0.00	0.05	0.50	0.032
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.00	0.05	0.60	0.012
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	0.0000	0.0000	0.0000	0.0002	0.0017	0.00091
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	0.0000	0.0000	0.0000	0.0002	0.0018	0.00077
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	1.35	0.151
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	1.35	0.150
Zinc (Zn), Total Recoverable	<0.05	<0.05	0.04	0.05	0.01	0.05	0.00	0.05	0.35	0.35
Zinc (Zn), Dissolved	<0.01	<0.01	0.01	0.02	0.01	0.04	0.00	0.01	0.34	0.34
PESTICIDES										
Heptachlor	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Aldrin	ND	ND	ND	ND	0.00	0.00	0.00	0.15	-	-
Alpha BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Beta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Delta BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Gamma BHC (Lindane)	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Chlordane	ND	ND	ND	ND	0.00	0.00	0.00	0.15	-	2.4
4,4-DDD	ND	ND	ND	ND	0.00	0.00	0.00	2.50	-	0.00025
Heptachlor Epoxide	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
4,4-DDE	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
4,4-DDT	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Dieldrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	0.0000011
Endosulfan I	ND	ND	ND	ND	0.00	0.00	0.00	0.05	0.22	0.0000062
Endosulfan II	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Endosulfan Sulfate	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Endrin	ND	ND	ND	ND	0.00	0.00	0.00	0.10	-	-
					0.00	0.00	0.00	0.05	0.086	0.036

NOTES
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
[1] Geometric mean calculated using method identified in 327 IAC 5-2-11.4(a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0."
[2] If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3] The minimum value may be equal to a calculated "0" value.

Stage 2A Evaluation
Chase

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-9
Grant Street Bridge (B4)
Dry Weather Analyses

PARAMETER	SAMPLE DATE April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[1,2]	Detection Limit	WATER QUALITY LIMITS Acute	Chronic
CONVENTIONALS										
E. coli (CFU/100mL)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	235	235
Oil and Grease	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		-
Ammonia (NH3) as N	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	1.2	[illegible]
Carbonaceous Biochemical Oxygen Demand (CBOD)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Chemical Oxygen Demand (COD)	60	50	50	70	61	80	50	20	-	-
Chloride	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	10	860	230
Cyanide, Weak Acid Dissociable (WAD)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	0.022	0.0052
Fluoride (F)	[illegible]	40	[illegible]	3.66	1.79	3.66	[illegible]	0.10	12	3.4
Hardness, Total as CaCO3	[illegible]	[illegible]	[illegible]	[illegible]	341	380	[illegible]	[illegible]	-	-
Nitrogen, Total Kjeldahl as N (TKN)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Phosphorus, Total	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		-
Solids, Total Dissolved (TDS)	[illegible]	[illegible]	[illegible]	[illegible]	503	560	[illegible]	10	-	-
Solids, Total Suspended (TSS)	40	[illegible]	[illegible]	69	38	69	[illegible]	[illegible]		-
Solids, Total Volatile Suspended (TVSS)	13	[illegible]	[illegible]	19	13	19	[illegible]	[illegible]	-	-
Sulfate (SO4)	[illegible]	65	[illegible]	[illegible]	79	94	65	[illegible]		-
pH (pH units)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	6 - pH - 9	6 - pH - 9
METALS										
Arsenic (As), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Arsenic (As), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cadmium (Cd), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cadmium (Cd), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chromium (Cr), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chromium (Cr), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Copper (Cu), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Copper (Cu), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iron (Fe), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iron (Fe), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Lead (Pb), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Lead (Pb), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mercury (Hg), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mercury (Hg), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nickel (Ni), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nickel (Ni), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zinc (Zn), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zinc (Zn), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PESTICIDES										
Heptachlor	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		
Aldrin	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Alpha BHC	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		-
Beta BHC	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	-
delta BHC	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		
gamma-BHC (Lindane)	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]
Chlordane	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		
4,4-DDD	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		
Heptachlor Epoxide	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		
4,4-DDE	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		
4,4'-DDT	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		
Dieldrin	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]
Endosulfan I	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Endosulfan II	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		-
Endosulfan Sulfate	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	
Endrin	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]		-
NOTES					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
Geometric mean calculated using method identified in 327 IAC 2-1.5-8(a)(2) in which samples with no exceedances below the detection limit are assigned the value "0".
If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-10
Broadway Street Bridge (BS)
Dry Weather Analyses

PARAMETER	SAMPLE DATE April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	WATER QUALITY LIMITS Acute	Chronic
CONVENTIONALS										
Bacteria (CFU/100 ml)	69	550	[illegible]	470	284	560	60	10	235	235
Oil and Grease	<2.5	<2.5	<5.0	<2.5	2.5	5.0	0.0	2.5	-	-
Ammonia (NH3 as N)	0.27	0.16	1.48	0.56	0.43	0.56	0.16	0.05	1.2	0.27
Carbonaceous Biochemical Oxygen Demand (CBOD)	<2.0	13	2.2	4.8	4.	15.	1.5	2.0	-	-
Chemical Oxygen Demand (COD)	79	98	47	69	62	99	30	20	-	-
Chloride	260	426	133	248	216	426	133	10	860	230
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	0.005	0.009	0.00	0.005	0.022	0.005
Fluoride (F)	1.17	1.36	1.55	1.54	1.39	1.54	1.13	0.10	12	1.4
Hardness, Total as CaCO3	370	340	370	300	260	350	340	2.0		
Nitrogen, Total Kjeldahl as N (TKN)	2.1	3.2	2.4	<0.50	1.6	3.2	<0.38	0.50	-	
Phosphorus, Total	0.2	0.63	<0.14	0.35	0.29	0.63	0.14	0.10	-	
Solids, Total Dissolved (TDS)	700	550	610	600	630	700	580	10		-
Solids, Total Suspended (TSS)	69	90	9.6	55	41	85	9.6	2.0	-	
Solids, Total Volatile Suspended (TVSS)	11	58	2.5	18	13	58	2.5	1.0		-
Sulfate (SO4)	120	73	103		96	122	73	5.0	-	
pH (pH units)	7.65	6.19	7.[illegible]	7.38	7.34	8.19	7.47	0.01	6.[illegible] - 9	6.[illegible] - 9
METALS										
Arsenic (As), Total Recoverable	<0.01	<0.10	<0.01	<0.01	0.00	0.10	0.00	0.01	0.34	0.15
Arsenic (As), Dissolved	<0.02	0.42	<0.02	<0.42	0.03	0.36	0.00	0.02	0.34	0.15
Cadmium (Cd), Total Recoverable	0.005	<0.005	<0.005	<0.005	0.006	0.009	<0.005	<0.005	0.0096	<0.0060
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.0125	0.0066
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.00	0.01	3.0	0.74
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	1.10	0.21
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.046	0.027
Copper (Cu), Dissolved	<0.01	0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.044	0.026
Iron (Fe), Total Recoverable	3.09	1.38	1.31	2.05	1.84	3.09	1.31	0.05	-	
Iron (Fe), Dissolved	0.08	<0.05	<0.05	<0.05	0.05	0.08	0.05	0.05		-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	0.05		
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	0.05	0.60	0.032
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	0.0000	0.0002	0.0000	0.0002	0.066	0.012
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	0.0000	0.0002	0.0000	0.0002	0.0011	0.000051
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.00	0.01	0.00	0.01	1.35	0.151
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	0.00	0.01	0.00	0.01	1.35	0.151
Zinc (Zn), Total Recoverable	0.03	0.01	<0.01	0.04	0.02	0.04	0.01	0.01	0.35	0.33
Zinc (Zn), Dissolved	<0.02	<0.01	<0.01	0.02	0.02	0.02	0.01	0.01	0.24	0.33
PESTICIDES										
Heptachlor	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Mirex	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
alpha-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
beta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
delta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
gamma-BHC (lindane)	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Chlordane	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
4,4'-DDD	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Heptachlor epoxide	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	<0.0025
4,4'-DDE	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	
4,4'-DDT	ND	ND	ND	ND	0.00	0.00	0.00	0.03	-	
Dieldrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Endosulfan I	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Endosulfan II	ND	ND	ND	ND	0.00	0.00	0.00	0.05	0.34	0.00056
Endosulfan sulfate	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
Endrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
NOTE:	ND	ND	ND	ND	0.00	0.00	0.00	0.05	0.086	0.036

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
Geometric mean calculated using method identified in 327 IAC 5-2-12.4 (at 60°C) in which samples with concentrations below the detection limit are assigned the value "0".
If all sample concentrations for a parameter are below the detection limit, the geometric mean, maximum value and minimum value are equal to zero.
[3] The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-11
Georgia Street Bridge (B6)
Dry Weather Analyses

PARAMETER	SAMPLE DATE April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	WATER QUALITY LIMITS Acute	Chronic
CONVENTIONALS										
E-coli (CFU/100 ml)	30	346	96	2959	192	580	30	10	235	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	0.5	2.0	0.0	2.0	-	-
Ammonia (NH3) as N	0.31	0.20	0.12	0.59	0.30	<0.0	0.14	0.01	1.5	0.2
Carbonaceous Biochemical Oxygen Demand (CBOD5)	4.8	22	2.0	6.6	6.4	22	2.4	2.0	-	-
Chemical Oxygen Demand (COD)	79	99	5	57	66	41	30	10		
Chloride	168	170	176	176	171	174	170	10	860	230
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	0.012	<0.005	0.005	0.010	<0.01	0.005	0.022	0.0052
Fluoride (F)	1.02	1.24	1.55	1.60	1.37	1.60	1.02	0.10	12	1.4
Hardness, Total as CaCO3	356	340	352	370	357	384	340	2.0	-	-
Nitrogen, Total Kjeldahl as N (TKN)	2.1	4.1	1.5	2.5	2.5	4.6	1.5	0.50	-	
Phosphorus, Total	1.28	<0.10	0.12	0.68	0.18	0.42	0.05	0.10		-
Solids, Total Dissolved (TDS)	710	670	560	680	642	720	560	10		
Solids, Total Suspended (TSS)	38	44	65	30	39	65	30	2.5	-	-
Solids, Total Volatile Suspended (VSS)	13	25	4.0	15	12	28	4.0	1.0	-	-
Sulfate (SO_4)	110	96	92		99	110	92	5.0	-	-
pH (pH units)	7.60	7.04	6.99	8.21	7.51	8.26	6.99	0.10	6.5 - 9	6.5 - 9
METALS										
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	0.01	0.004	<0.01	0.003	0.01	0.34	0.15
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	0.02	0.02	<0.02	0.02	0.34	0.15
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	0.006	0.013	0.005	0.005	0.0199	<0.0166
Cadmium (Cd), Dissolved	<0.005	<0.005	0.005	0.005	0.005	<0.005	0.005	0.005	0.0175	0.0169
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	5.0	1.24
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	1.93	0.28
Copper (Cu), Total Recoverable	<0.01	0.01	<0.01	<0.01	0.01	0.02	0.01	0.01	0.010	0.027
Copper (Cu), Dissolved	0.01	<0.01	0.01	<0.01	0.01	0.02	0.01	0.01	0.0188	0.026
Iron (Fe), Total Recoverable	2.59	1.37	1.11	1.58	1.64	2.59	1.10	0.05	-	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	0.05		
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	0.05	0.62	0.032
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	0.05	0.54	0.032
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	0.0002	0.0002	0.0014	0.0004
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	0.0002	0.0002	0.0014	0.0004
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	1.35	0.151
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	1.35	0.152
Zinc (Zn), Total Recoverable	0.72	0.32	0.01	0.34	0.32	0.34	0.01	0.01	0.35	0.35
Zinc (Zn), Dissolved	0.01	0.02	<0.01	0.21	0.02	0.21	0.01	0.01	0.34	0.34
PESTICIDES										
Heptachlor	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Aldrin	ND	ND	ND	ND	0.05	0.05	0.05	0.05	-	-
Alpha-BHC	ND	ND	ND	ND	0.06	0.06	0.06	0.05		-
Beta-BHC	ND	ND	ND	ND	0.05	0.05	0.05	0.05	-	-
Delta-BHC	ND	ND	ND	ND	0.05	0.07	0.05	0.05		-
Gamma BHC (Lindane)	ND	ND	ND	ND	0.05	0.05	0.05	0.05	-	-
Chlordane	ND	ND	ND	ND	0.01	0.01	0.01	2.50		0.0025
4,4' DDD	ND	ND	ND	ND	0.06	0.07	0.06	0.05		
Heptachlor Epoxide	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	-
4,4' DDE	ND	ND	ND	ND	0.05	0.05	0.05	0.05		-
4,4'-DDT	ND	ND	ND	ND	0.05	0.05	0.05	0.05		
Dieldrin	ND	ND	ND	ND	0.05	0.06	0.05	0.05	-	0.0241
Endosulfan I	ND	ND	ND	ND	0.05	0.05	0.05	0.5	0.24	0.0056
Endosulfan II	ND	ND	ND	ND	0.05	0.05	0.05	0.05	-	
Endosulfan Sulfate	ND	ND	ND	ND	0.05	0.05	0.05	0.05	-	-
Endrin	ND	ND	ND	ND	0.05	0.05	0.05	0.05		-
Endrin	ND	ND	ND	ND	0.05	0.06	0.05	0.05	0.086	0.036

NOTES

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1] Geometric mean calculated using method identified in 327 IAC 2-1-3(a)(6)(A) in which samples with concentrations below the detection limit are assigned the value "0".

[2] If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3] The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-12
Railroad Tracks Bridge (B7)
Dry Weather Analysis

PARAMETER	SAMPLE DATE April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	WATER QUALITY LIMITS Acute	Chronic
CONVENTIONALS:										
Fecal Coliform (#/100ml)	160	392	19	166	166	590	95	10	235	215
Oil and Grease	<2.0	<2.0	2.3	<2.0	0.7	2.3	0.5	2.0		
Ammonia (NH_3) as N	0.34	0.54	0.12	0.15	0.31	0.54	0.12	0.01	3.2	0.27
Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)	8.6	28	3.8	8.0	7.1	28	3.0	2.0	-	-
Chemical Oxygen Demand (COD)	90	30	9	70	35	130	30	25	-	-
Chloride	190	270	85	243	155	243	63	20	860	230
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	0.006	0.006	0.006	0.005	0.005	0.022	0.005
Fluoride (F)	0.56	2.17	2.18	3.22	1.51	3.22	0.56	0.10	12	1.4
Hardness, Total as $CaCO_3$	340	900	370	467	521	360	300	2.0	-	-
Nitrogen, Total Kjeldahl as N (TKN)	2.0	4.7	1.6	2.7	2.5	4.7	1.6	0.50	-	-
Phosphorus, Total	0.28	0.95	0.24	0.42	0.36	0.95	0.24	0.10	-	-
Solids, Total Dissolved (TDS)	720	570	350	960	547	623	350	10	-	-
Solids, Total Suspended (TSS)	100	170	42	48	55	170	12	2.0	-	-
Solids, Total Volatile Suspended (VSS)	22	160	4.4	7	22	160	4.4	1.2	-	-
Sulfate (SO_4)	110	46	4		28	110	46	5.0	-	-
pH (pH units)	7.82	8.22	7.57	7.60	7.80	8.22	7.57	0.01	6 - pH - 9	6 - pH - 9
METALS:										
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.005	0.01	0.005	0.01	0.32	0.15
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	0.02	0.04	0.02	0.02	0.34	0.15
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.0[illegible]	0.00[illegible]
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.0175	0.0060
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.005	0.01	0.6	0.23
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	1.59	0.[illegible]
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.045	0.027
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.0411	0.026
Iron (Fe), Total Recoverable	4.69	1.37	2.39	1.29	1.93	1.69	1.17	0.05		
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	0.05	-	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	0.05	0.61	0.[illegible]
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	0.05	0.65	0.032
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0002	0.0017	0.0011
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0002	0.0016	0.0077
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	0.01	0.01	0.01	<0.01	0.01	1.34	0.150
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	1.35	0.150
Zinc (Zn), Total Recoverable	0.04	<0.01	0.02	0.03	0.02	0.04	0.01	0.01	0.45	0.35
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	0.01	0.01	0.02	0.01	0.01	0.31	0.31
PESTICIDES:										
Heptachlor	ND	ND	ND	ND	0.01	0.01	0.01	0.01	-	-
Aldrin	ND	ND	ND	ND	0.01	0.01	0.01	0.15	-	-
Alpha-BHC	ND	ND	ND	ND	0.01	0.01	0.01	0.01	-	-
Beta-BHC	ND	ND	ND	ND	0.01	0.01	0.01	0.01	-	-
Delta-BHC	ND	ND	ND	ND	0.01	0.01	0.01	0.01	-	-
Gamma-BHC (Lindane)	ND	ND	ND	ND	0.01	0.01	0.01	0.01		-
Chlordane	ND	ND	ND	ND	0.05	0.05	0.05	0.05		0.5
4,4'-DDD	ND	ND	ND	ND	0.01	0.01	0.01	0.05		0.0025
Heptachlor Epoxide	ND	ND	ND	ND	0.01	0.01	0.01	0.05	-	
4,4'-DDE	ND	ND	ND	ND	0.01	0.01	0.01	0.05		-
4,4'-DDT	ND	ND	ND	ND	0.01	0.06	0.01	0.05	-	-
Dieldrin	ND	ND	ND	ND	0.01	0.01	0.01	0.05		0.0[illegible]1
Endosulfan I	ND	ND	ND	ND	0.01	0.01	0.01	0.05	0.24	0.0056[illegible]
Endosulfan II	ND	ND	ND	ND	0.01	0.01	0.01	0.05	-	-
Endosulfan Sulfate	ND	ND	ND	ND	0.01	0.01	0.01	0.05		
Endrin	ND	ND	ND	ND	0.01	0.01	0.01	0.10		-
Endrin Aldehyde	ND	ND	ND	ND	0.01	0.01	0.01	0.05	0.086	0.036

NOTES:
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
Geometric mean calculated using method described in 327 IAC 5-2-11.6(a)(1) in which samples with concentrations below the detection limit are assigned the value "0".
If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-13
Martin Luther King Drive Bridge (B8)
Dry Weather Analyses

PARAMETER	SAMPLE DATE April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	WATER QUALITY LIMITS Acute	Chronic
CONVENTIONALS										
[illegible]	130	2000	35	240	216	2000	30	10	133	33
Oil and Grease	<2.0	<1.0	3.1	<2.0	0.7	3.1	1.0	2.0		
Ammonia (NH_3) as N	0.25	0.11	<0.13	0.38	0.27	0.39	0.11	0.01	1.2	[illegible]
Carbonaceous Biochemical Oxygen Demand (CBOD5)	2.5	1.4	2.7	7.3	4.0	14	2.0	2.0		
Chemical Oxygen Demand (COD)	35	46	42	42	39	50	30	20		
Chloride	173	322	136	159	183	320	136	50	860	230
Cyanide, Weak Acid Dissociable (CAD)	<0.005	0.006	<0.005	<0.005	0.002	0.006	<0.001	0.002	0.022	0.0052
Fluoride (F)	1.6	1.27	1.40	1.50	1.6	3.62	1.16	0.10	12	1.1
Hardness, Total as CaCO3	990	320	350	360	523	360	320	2.0	-	-
Nitrogen, Total Kjeldahl as N (TKN)	2.1	3.1	1.6	1.8	2.1	3.1	1.8	0.50	-	-
Phosphorus, Total	0.27	0.38	0.11	0.19	0.20	0.38	0.11	0.10		-
Solids, Total Dissolved (TDS)	790	430	662	440	647	700	396	10		
Solids, Total Suspended (TSS)	51	21	10	50	32	51	10	2.0	-	-
Solids, Total Volatile Suspended (VSS)	68	17	52	5	28	68	5.2	1.0		-
Sulfate (SO_4)	116	5	89		77	180	5.1	5.0	-	-
pH (pH units)	7.94	8.1	7.58	7.91	7.79	8.17	7.58	0.01	6 - pH - 9	6 - pH - 9
METALS										
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.004	0.01	0.003	0.02	0.34	0.15
Arsenic (As), Dissolved	<0.01	<0.02	<0.02	<0.01	0.00	0.00	0.00	0.02	0.34	0.15
Cadmium (Cd), Total Recoverable	<0.005	<0.005	0.005	<0.005	0.005	0.006	0.003	0.002	0.0186	0.0066
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	0.005	0.006	0.003	0.005	0.0175	0.0060
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	0.01	0.00	0.00	0.00	0.01	3.5	0.28
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.01	1.59	0.21
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.00	0.01	0.00	0.01	0.046	0.027
Copper (Cu), Dissolved	<0.01	0.01	<0.01	<0.01	0.004	0.01	0.003	0.01	0.044	0.026
Iron (Fe), Total Recoverable	3.46	2.21	2.29	1.44	1.87	3.46	1.16	0.05		
Iron (Fe), Dissolved	<0.05	<0.05	0.02	<0.05	0.03	0.05	0.01	0.05		
Lead (Pb), Total Recoverable	<0.05	<0.05	0.05	<0.05	0.03	0.05	0.01	0.05	0.60	0.032
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	0.00	0.00	0.05	0.60	0.032
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0004	0.0001	0.0002	0.001	0.00051
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	0.0001	0.0002	0.001	0.00051
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.01	0.01	1.35	0.151
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.01	0.01	1.35	0.151
Zinc (Zn), Total Recoverable	0.55	<0.01	0.43	0.62	0.37	0.64	0.01	0.02	0.35	0.35
Zinc (Zn), Dissolved	<0.01	<0.01	0.02	0.11	0.02	0.12	0.01	0.01	0.34	0.34
PESTICIDES										
Heptachlor	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Aldrin	ND	ND	ND	ND	0.01	0.10	0.00	0.05		
Alpha-BHC	ND	ND	ND	ND	[illegible]	0.07	0.00	[illegible]		
Beta-BHC	ND	ND	ND	ND	0.04	0.09	0.00	0.05		
Delta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
gamma BHC (Lindane)	ND	ND	ND	ND	0.09	0.00	0.00	0.05		
Chlordane	ND	ND	ND	ND	0.00	0.00	0.00	0.50		0.5
4,4'-DDD	ND	ND	ND	ND	0.00	0.00	0.00	0.05		0.00125
Heptachlor Epoxide	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
4,4'-DDE	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
4,4'-DDT	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Dieldrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Endosulfan I	ND	ND	ND	ND	0.00	0.00	0.00	0.05	0.04	[illegible]
Endosulfan II	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Endosulfan Sulfate	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Endrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05		

NOTES

All conventional parameters and metals are stated in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

Geometric mean calculated using method identified in 327 IAC 5-2-11.4(a)(3)(C) in which samples with concentration below the detection limit are assigned the value "0".

If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-14
Clay Street Bridge (B9)
Dry Weather Analyses

PARAMETER	SAMPLE DATE April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	WATER QUALITY LIMITS Acute	Chronic
CONVENTIONALS										
Fecal (CFU/100mL)	190	470	79	20	100	470	20	10	235	235
Oil and Grease	<2.0	<2.0	5.2	<2.0	2.9	7.0	2.0	2.0	-	-
Ammonia (NH3 as N)	0.76	<0.08	0.48	<0.08	0.11	0.24	0.08	0.05	1.3	0.17
Carbonaceous Biochemical Oxygen Demand (CBOD5)	2.6	10	2.9	4.0	4.6	16	2.6	2.0		
Chemical Oxygen Demand (COD)	66	92	42	47	53	92	40	20	-	-
Chloride	130	100	93	1.1	19	130	93	15	860	230
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	0.005	0.005	0.005	<0.005	0.022	0.005
Fluoride (F)	0.55	0.40	0.51	1.3	0.61	1.3	0.40	0.10	12	1.1
Hardness, Total as CaCO3	340	290	330	370	340	390	290	2.0	-	-
Nitrogen, Total Kjeldahl as N (TKN)	1.4	2.6	1.5	3	1.7	2.6	1.4	0.50		
Phosphorus, Total	0.35	0.22	<0.10	<0.20	0.17	0.35	0.08	0.10		
Solids, Total Dissolved (TDS)	410	450	410	2.0	314	410	450	10	-	-
Solids, Total Suspended (TSS)	69	64	12	25	34	69	12	2.0	-	-
Solids, Total Volatile Suspended (TVSS)	15	22	5.5	7.4	12	22	4	2.0		
Sulfate (SO_4)	113	86	96		97	113	86	2.5		
pH (pH units)	8.16	8.45	7.52	8.19	8.11	8.45	7.52	0.01	6.5 pH 9	6.5 pH 9
METALS										
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	0.02	0.01	0.02	0.01	0.01	0.34	0.15
Arsenic (As), Dissolved	<0.02	<0.02	0.02	<0.02	0.01	0.02	0.01	0.02	0.34	0.15
Cadmium (Cd), Total Recoverable	<0.005	0.005	0.005	<0.005	0.005	0.005	0.005	0.005	0.0186	0.0015
Cadmium (Cd), Dissolved	0.005	<0.005	<0.005	<0.005	0.005	0.005	0.005	0.005	0.0175	0.0016
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.01	0.01	5.9	0.11
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.02	0.01	0.01	1.19	0.21
Copper (Cu), Total Recoverable	<0.07	<0.01	<0.01	<0.01	0.01	0.06	0.01	0.01	0.046	0.037
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	0.044	0.029
Iron (Fe), Total Recoverable	2.02	2.02	1.00	0.87	1.34	2.02	0.33	0.05		
Iron (Fe), Dissolved	<0.05	<0.05	0.07	<0.05	0.02	0.07	0.01	0.05	-	
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	0.05	0.05	0.65	0.037
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	0.05	0.05	0.05	0.05	0.60	0.037
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	0.0002	<0.0002	0.0001	0.0002	0.0001	0.0002	0.0014	0.00012
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	0.0001	0.0002	0.0001	0.0002	0.0014	0.00012
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	1.38	0.151
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	0.01	0.01	1.35	0.15
Zinc (Zn), Total Recoverable	0.01	0.01	<0.01	0.02	0.01	0.02	0.01	0.01	0.35	0.35
Zinc (Zn), Dissolved	<0.01	<0.01	0.01	0.02	<0.01	0.02	0.01	0.01	0.34	0.34
PESTICIDES										
Heptachlor	ND	ND	ND	ND	0.00	0.00	<0.05	0.05	-	-
Aldrin	ND	ND	ND	ND	0.00	0.00	<0.05	0.15		
alpha-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.02	-	
beta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
delta-BHC	ND	ND	ND	ND	0.00	0.00	0.00	0.03	-	
gamma-BHC (Lindane)	ND	ND	ND	ND	0.00	0.00	0.00	0.03		
Chlordane	ND	ND	ND	ND	0.00	0.00	0.00	2.50	-	<0.0025
4,4'-DDD	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Heptachlor Epoxide	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
4,4'-DDE	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	
4,4'-DDT	ND	ND	ND	ND	0.00	0.00	0.00	0.05		
Dieldrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05		0.0019
Endosulfan I	ND	ND	ND	ND	0.00	0.00	0.00	0.05	0.22	0.0056
Endosulfan II	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	
Endosulfan Sulfate	ND	ND	ND	ND	0.00	0.00	0.00	0.05		-
Endrin	ND	ND	ND	ND	0.00	0.00	0.00	0.05	-	
Endrin Aldehyde	ND	ND	ND	ND	0.00	0.00	0.00	0.05	0.086	0.029

NOTES
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
[1]Geometric mean calculated using method identified in 327 IAC 2-1.5-8(a)(3) in which samples with concentrations below the detection limit are assigned the value "0".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "0" value.

Prepared By: Tetra Tech
Date:

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-15
Ripley Street Bridge (B10)
Dry Weather Analyses

PARAMETER	SAMPLE DATE: April 27, 2001	June 25, 2001	December 11, 2001	July 2, 2002	Geometric Mean[1]	Maximum Value[2]	Minimum Value[2]	Detection Limit	WATER QUALITY LIMITS: Acute	Chronic
CONVENTIONALS										
[illegible]	140	260	40	120	[illegible]	567	19	[illegible]	233	375
Oil and Grease	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Ammonia (NH3, as N)	0.68	0.37	0.39	0.22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Carbonaceous Biochemical Oxygen Demand (CBOD)	2.4	19	2.5	4.1	4.9	19	2.4	2.0	-	-
Chemical Oxygen Demand (COD)	56	92	39	40	54	92	39	20		
Chloride	150	200	95	195	124	195	95	20	860	[illegible]
Cyanide, Weak Acid Dissociable (WAD)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Fluoride (F)	[illegible]	[illegible]	[illegible]	1.22	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Hardness, Total as $CaCO_3$	380	340	347	33	361	405	340	2.0	-	-
Nitrogen, Total Kjeldahl as N (TKN)	[illegible]	[illegible]	[illegible]	1.5	5	[illegible]	[illegible]	[illegible]	-	
Phosphorus, Total	0.15	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Solids, Total Dissolved (TDS)	590	[illegible]	511	558	541	595	530	10		
Solids, Total Suspended (TSS)	54	56	[illegible]	15	26	56	22	[illegible]		
Solids, Total Volatile Suspended (TVSS)	12	25	[illegible]	[illegible]	10	25	6.1	[illegible]	-	
Sulfate (SO_4)	[illegible]	68	104	96	65	113	55	[illegible]	-	
pH (pH units)	[illegible]	[illegible]	[illegible]	7.06	[illegible]	[illegible]	[illegible]	0.01	[illegible]	[illegible]
METALS										
Arsenic (As), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Arsenic (As), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cadmium (Cd), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cadmium (Cd), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chromium (Cr), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Chromium (Cr), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Copper (Cu), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Copper (Cu), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iron (Fe), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Iron (Fe), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	-	
Lead (Pb), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]		
Lead (Pb), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mercury (Hg), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Mercury (Hg), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nickel (Ni), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nickel (Ni), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zinc (Zn), Total Recoverable	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Zinc (Zn), Dissolved	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
PESTICIDES										
Heptachlor	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Aldrin	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Alpha-BHC	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	
Beta-BHC	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	
Delta-BHC	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Gamma-BHC (Lindane)	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	-
Chlordane	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	-
4,4'-DDD	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]
4,4'-DDE	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]
Heptachlor Epoxide	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	
4,4'-DDT	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	
Dieldrin	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	
Endosulfan I	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	[illegible]
Endosulfan II	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Endosulfan Sulfate	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	
Endrin	ND	ND	ND	ND	[illegible]	[illegible]	[illegible]	[illegible]	-	
NOTES:					[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

All conventionals, nutrients and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
Geometric mean calculated using method identified in 327 IAC 5-2-11.3 (applicable to when samples with concentrations below the detection limit are assigned the value "0").
Total sample concentrations below a parameter's detection limit, then the parameter mean = maximum value and the minimum value equal to zero.
The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-16
Deep River
Dry Weather Analyses

PARAMETER	SAMPLE DATE				Geometric Mean[2,3]	Maximum Value[3]	Minimum Value[3,4]	Detection Limit	WATER QUALITY LIMITS	
	April 27, 2001[1]	June 25, 2001	December 11, 2001	July 2, 2002					Acute	Chronic
CONVENTIONALS										
[illegible]	[illegible]	[illegible]	36	710	151	540	30	10	245	200
Oil and Grease	<2.0	<2.0	<2.0	3.0	0.9	0.9	0.9	2.0	-	-
Ammonia (NH_3 as N	0.29	0.07	0.24	0.18	0.24	0.07	0.07	0.01	1.2	0.23
Carbonaceous Biochemical Oxygen Demand (CBOD)	13	2.0	2.4	4.2	3.3	2.4	2.0	2.0	-	-
Chemical Oxygen Demand (COD)	46	25	36	46	40	36	25	20		
Chlorine	98	6	67	79	58	67	6	20	19.6	11.0
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	0.010	0.006	0.010	<0.005	0.005	0.022	0.0052
Fluoride (F)	0.39	0.32	0.19	0.29	0.29	0.39	0.19	0.10	17	3.4
Hardness, Total as CaCO	390	350	350	386	369	390	350	2.0	-	-
Nitrogen, Total Kjeldahl as N (TKN)	2.5	1.1	2.4	2	2.5	2.4	1.1	0.50		
Phosphorus, Total	0.55	0.25	0.44	0.25	0.35	0.55	0.25	0.10	-	
Solids, Total Dissolved (TDS)	470	470	420	453	470	420	470	10	-	-
Solids, Total Suspended (TSS)	50	13	19	23	30	50	13	2.0		
Solids, Total Volatile Suspended (TVSS)	22	5.6	5.6	8.8	12	22	5.6	1.0		
Sulfate (SO_4)	3	5		3.3	4.6	5	3	5.0	-	-
pH (Units)	8.1	7.1	8.1	8.22	8.0	8.2	7.1	0.02	6.5 - 9.0	6.5 - 9
METALS										
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	0.20	<0.01	0.01	0.34	0.15
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	0.00	0.00	<0.02	0.02	0.34	0.15
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	0.005	0.0156	0.0066
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	0.005	0.006	<0.005	0.005	0.0156	0.0066
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.00	0.02	0.00	0.01	16	0.74
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	0.00	0.30	0.00	0.01	2.59	0.31
Copper (Cu), Total Recoverable	<0.01	0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.046	0.027
Copper (Cu), Dissolved	<0.01	0.01	<0.01	<0.01	0.00	0.00	0.00	0.01	0.044	0.026
Iron (Fe), Total Recoverable	2.16	1.46	0.87	1.31	1.16	2.82	0.87	1.05	-	-
Iron (Fe), Dissolved	<0.25	<0.25	<0.25	0.00	0.00	0.00	0.00	0.25	-	-
Lead (Pb), Total Recoverable	0.05	<0.05	<0.05	0.03	0.10	0.05	0.03	0.05	0.65	0.025
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	0.00	0.00	0.00	0.00	0.05	0.50	0.02
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	0.0009	0.0005	0.0019	<0.0002	0.0002	0.0014	0.0012
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	0.0002	0.0014	0.0012
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	0.00	0.00	0.00	<0.01	0.01	0.0013	[illegible]
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	0.00	0.00	0.00	<0.01	0.01	1.35	0.151
Zinc (Zn), Total Recoverable	<0.01	<0.01	<0.01	0.00	0.30	0.09	<0.01	0.01	1.35	0.159
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	0.01	0.02	<0.01	<0.01	0.01	0.35	0.35
PESTICIDES									0.14	0.14
Heptachlor	ND	ND	ND	0.00	0.00	0.00	0.00	0.03	-	
Mirex	ND	ND	ND	0.00	0.00	0.00	0.00	0.03	-	
Alpha-BHC	ND	ND	ND	0.02	0.00	0.09	0.00	0.15	-	-
Beta-BHC	ND	ND	ND	0.02	0.00	0.06	0.00	0.03	-	-
delta-BHC	ND	ND	ND	0.00	0.05	0.06	0.00	0.05	-	-
gamma-BHC (Lindane)	ND	ND	ND	0.00	0.00	0.00	0.00	0.03		-
Chlordane	ND	ND	ND	0.00	0.00	0.00	0.00	0.03		0.5
4,4'-DDD	ND	ND	ND	0.00	0.00	0.00	0.00	2.59		0.00025
Heptachlor Epoxide	ND	ND	ND	0.02	0.00	0.02	0.00	0.03	-	-
4,4'-DDE	ND	ND	ND	0.00	0.00	0.00	0.00	0.03	-	-
4,4'-DDT	ND	ND	ND	0.00	0.00	0.00	0.00	0.03	-	-
Dieldrin	ND	ND	ND	0.00	0.00	0.00	0.00	0.03	-	0.00000141
Endrin Ketone	ND	ND	ND	0.00	0.00	0.00	0.00	0.03	0.086	0.0300365
Endosulfan Sulfate	ND	ND	ND	0.00	0.00	0.00	0.00	0.03	-	-
Endrin	ND	ND	ND	0.00	0.00	0.00	0.00	0.03	-	-
Endrin Aldehyde	ND	ND	ND	0.00	0.00	0.00	0.00	0.03	-	-
NOTES:									0.086	0.036

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1] The Deep River was not sampled during the April 27, 2001 event. Subsequently, data from the remaining three events were used to calculate the geometric mean, maximum and minimum values.

[2] Geometric mean, calculated using method identified in 327 IAC 5-2-11.3(a)[illegible] in which samples with concentrations below the detection limit are assigned the value "0".

[3] If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[4] The minimum value may be equal to a calculated "0" value.

Hydro Dry Weather
[illegible]

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-22
Cline Avenue Bridge (B1)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	40	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU / 100mL)	1200	200	2900	400	300	1000	400	300	800	1700	3100	700	3400	900	1000	1300	528	3100	200	100	235
Oil and Grease	<2.0	<2.0	<2.0	2.2	<2.0	2.3	<2.0	<2.0	<2.0	3.6	3.6	<2.0	<2.0				0.0	3.0	0.0	2.0	-
Ammonia (NH_3), as N	0.17	0.10	0.07	0.16	0.22	0.21	0.22	0.23	0.25	0.26	0.52	0.44	0.79	0.32	0.11	0.13	0.22	0.70	0.07	0.01	2.7
Carbonaceous Biochemical Oxygen Demand	8.0	4.7	12	6.7	8.0	12	10	5.1	2.8	16	2.6	4.3	2.7	3.7	12	9.0	5.4	16.0	2.6	2.0	-
Chemical Oxygen Demand (COD)	60	50	70	50	40	50	50	30	40	40	40	40	50				46	70	30	20	-
Chloride	99	100	110	91	90	92	90	100	96	110	94	94	96				97	110	90	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	0.007	0.006	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.002	0.008	0.001	0.005	0.022
Fluoride, (F)	2.42	1.91	1.83	1.84	1.81	1.60	2.07	2.36	2.70	2.64	2.02	2.13	2.21				2.09	2.70	1.60	0.10	12
Hardness, Total as $CaCO_3$	240	230	300	230	190	190	160	180	50	190	190	210	220				186.5	300.0	50.0	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.8	2.1	2.5	2.5	1.9	4.6	2.7	1.8	1.9	1.9	<0.50	2.1	2.7	1.8	2.1	1.8	2.05	4.60	0.47	0.50	-
Phosphorus, Total	0.31	0.21	0.71	0.20	0.17	0.25	0.23	2.8	0.16	0.63	<0.10	<0.10	0.11				0.26	2.80	0.08	0.10	-
Solids, Total Dissolved (TDS)	530	480	470	420	410	460	410	400	460	410	460	470	450				447	530	400	10	-
Solids, Total Suspended (TSS)	33	27	48	26	23	32	21	19	20	15	17	20	28				24.1	48.0	15.0	2.0	-
Solids, Total Volatile Suspended (TVSS)	14	11	17	10	10	8.0	11	3.2	8.4	4.8	8.0	12	11				9.7	17.0	4.8	1.0	-
Sulfate (SO_4)	56	56	79	58	59	78	54	71	49	52	56	58	73				61	79	49	10	-
pH (pH units)	8.00	8.15	8.21	7.48	7.53	7.36	7.36	7.5	7.42	7.64	7.42	7.43	7.41	7.48	7.61	7.50	7.59	8.21	7.36	0.01	6<=pH<=9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	0.93	0.81	1.68	0.86	0.57	1.01	0.73	0.69	0.64	0.56	0.51	0.68	0.72				0.76	1.68	0.51	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	0.0002	<0.0002	<0.0002	<0.0002				0.0001	0.0002	0.0001	0.0002	0.0037
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01				0.00	0.01	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.03	0.03	0.04	0.04	0.02	0.04	0.03	<0.01	<0.01	<0.01	<0.01	0.01	0.02				0.02	0.04	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	0.01	0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01				0.005	0.02	0.003	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES:
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-23
Clark Street Bridge (B2)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[1]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU / 100ml)	<100	100	200	600	500	1800	300	500	200	100	300	200	200	200	100	200	243	1800	94	100	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.7	<2.0	<2.0	2.1	<2.0	<2.0	<2.0				0.4	2.7	0.3	2.0	-
Ammonia (NH_3), as N	0.15	0.16	0.26	0.12	0.24	0.09	0.24	0.27	0.17	0.21	0.44	0.26	0.34	0.17	0.17	0.12	0.19	0.44	0.09	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	6.6	12	4.4	5.1	7.6	7.2	61	5.4	3.8	2.8	11	7.7	<2.0	2.9	9.6	10	6.3	61.0	1.9	2.0	-
Chemical Oxygen Demand (COD)	100	100	60	100	190	80	70	60	20	50	60	60	50				70	100	50	20	-
Chloride	120	120	120	130	120	100	150	110	120	110	110	100	100				115	150	100	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	0.006	0.012	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.002	0.012	0.001	0.005	0.022
Fluoride, (F)	1.78	1.63	1.63	1.49	1.34	1.28	1.44	1.49	1.86	1.68	1.44	1.59	1.54				1.54	1.86	1.28	0.10	12
Hardness, Total as $CaCO_3$	280	310	310	320	350	330	310	310	310	270	280	250	300				303.8	350.0	270.0	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.4	3.1	2.2	1.9	4.8	1.9	2.0	2.8	2.6	1.9	3.2	4.2	1.5	2.0	2.1	1.7	2.39	4.80	1.50	0.50	-
Phosphorus, Total	0.16	1.3	0.37	0.25	0.68	0.43	0.22	0.38	<0.10	0.24	0.74	0.12	<0.10				0.28	1.30	0.08	0.10	-
Solids, Total Dissolved (TDS)	520	540	490	580	600	510	550	530	560	540	510	510	520				527	580	490	10	-
Solids, Total Suspended (TSS)	70	85	60	56	77	26	100	85	58	45	66	32	27				55.6	100.0	26.0	2.0	-
Solids, Total Volatile Suspended (TVSS)	23	29	18	16	42	13	69	49	29	12	29	13	12				23.7	69.0	12.0	1.0	-
Sulfate (SO_4)	56	65	72	86	72	42	73	77	72	82	66	58	67				67	86	42	5.0	-
pH (pH units)	7.50	7.86	7.68	7.74	7.51	7.59	7.59	7.50	7.51	7.27	7.41	7.50	7.63	7.61	7.78	7.60	7.58	7.86	7.27	0.01	6< pH< 9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Detsolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	2.67	2.79	2.52	2.26	1.56	0.99	1.90	2.29	1.86	1.66	2.08	1.22	1.17				1.83	2.79	0.99	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.005	0.06	0.004	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.03	0.03	0.03	0.02	0.02	0.02	0.03	0.03	0.02	0.02	0.03	0.06	0.01				0.02	0.06	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.002	0.01	0.002	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
																	0.00	0.00	0.00	0.05	0.086

NOTES
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-24
Chase Street Bridge (B3)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100ml)	270	100	2600	2200	1000	2400	600	300	500	500	200	900	600	100	100	700	463	2700	100	100	235
Oil and Grease	2.5	3.0	2.6	<2.0	2.5	<2.0	3.5	2.8	4.0	2.5	2.7	<2.0	<2.0				2.3	4.0	1.4	2.0	-
Ammonia (NH_3) as N	0.29	0.11	0.17	0.03	0.50	0.04	0.26	0.26	0.27	0.29	0.34	0.07	0.14	0.14	0.14	0.09	0.13	0.34	0.04	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	1.5	3.5	6.1	<5.0	4.1	3.6	4.1	5.4	4.6	4	14	4.3	4.1	2.3	5.5	6.9	4.9	14.0	1.9	2.0	
Chemical Oxygen Demand (COD)	50	50	60	60	40	60	60	60	90	110	60	90	60				63	110	40	20	
Chloride				120	120	116	110	100	120	93	110	110	89				105	120	89	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	0.008	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.001	0.008	0.001	0.005	0.022
Fluoride (F)	1.45	1.31	1.29	1.33	1.22	1.34	1.32	1.01	0.95	0.74	1.07	1.09	1.18				1.16	1.52	0.74	0.10	12
Hardness, Total as $CaCO_3$	340	340	380	340	340	330	300	320	350	360	300	300	300				329.6	380.0	290.0	2.0	-
Nitrogen, Total Kjeldhl as N (TKN)	1.8	1.8	0.58	1.7	3.3	1.1	4.9	1.6	2.7	1.8	0.65	2.5	1.9	1.8	1.3	2.0	1.56	4.90	0.58	0.53	
Phosphorus, Total	0.66	0.69	1.37	0.42	0.35	0.31	0.20	0.38	0.48	0.14	0.25	0.23	0.13				0.32	0.89	0.13	0.10	-
Solids, Total Dissolved (TDS)	320	440	530	500	670	500	520	330	320	510	510	530	530				452	670	300	10	
Solids, Total Suspended (TSS)	15	7.2	18	8.4	12	12	120	110	54	45	47	16	28				24.2	120.0	7.2	2.0	
Solids, Total Volatile Suspended (TVSS)	9.6	3.6	10	4.8	6.4	7.2	72	53	23	10	14	16	11				12.1	72.0	3.6	1.0	
Sulfate (SO_4)	48	47	50	40	35	12	72	12	6.8	5	12	11	66				29	75	7	10	
pH (pH units)	7.68	7.76	8.08	7.78	7.44	7.35	7.56	7.50	7.46	7.31	7.43	7.52	7.56	7.60	7.63	7.70	7.46	8.08	7.31	0.01	6-, pH>-9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0159
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.0005	0.006	0.0004	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.1
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	0.49	0.40	0.38	0.35	0.28	1.02	1.81	1.75	1.66	1.77	2.19	0.53	1.16				0.84	2.19	0.28	0.05	
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	<0.01	0.03	0.04	0.01	<0.01	<0.01	0.03	0.03	0.02	0.02	0.03	0.04	0.01				0.02	0.04	0.01	0.01	0.36
Zinc (Zn), Dissolved	<0.01	0.02	0.01	0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01				0.01	0.02	0.004	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES:
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4(a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-25
Grant Street Bridge (B4)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	300	500	500	700	600	900	200	500	300	200	100	400	300	100	100	100	286	900	100	100	235
Oil and Grease	<2.0	<2.0	<2.0	2.0	2.6	3.2	3.1	<2.0	<2.0	2.2	<2.0	<2.0	<2.0				1.2	3.2	0.8	2.0	
Ammonia (NH_3), as N	0.22	0.18	0.11	0.26	0.37	0.22	0.09	0.27	0.16	0.02	0.45	0.06	0.02	0.11	0.07	0.02	0.11	0.45	0.02	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	6.5	4.7	5.5	4.3	3.9	4.5	9.7	6.3	4.4	9.6	2.4	4.3	<2.0	2.5	9.3	6.1	4.8	9.7	1.9	2.0	-
Chemical Oxygen Demand (COD)	100	90	50	60	40	60	60	70	80	70	60	60	50				64	100	40	20	-
Chloride	95	92	100	69	79	86	110	110	98	110	110	110	120				97	110	69	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	0.007	0.01	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.002	0.010	0.001	0.005	0.022
Fluoride, (F)	1.06	0.92	0.93	0.96	0.90	0.86	0.50	1.03	0.99	1.05	0.99	1.07	1.08				0.93	1.08	0.50	0.10	12
Hardness, Total as $CaCO_3$	260	250	230	160	190	290	240	250	280	290	270	280	320				238.9	320.0	160.0	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.0	1.8	1.8	1.6	1.5	4.3	2.0	2.3	2.4	2.2	2.1	3.1	1.5	1.2	1.9	1.8	2.04	4.30	1.50	0.50	-
Phosphorus, Total	0.22	0.24	0.21	0.22	0.26	0.23	0.27	0.28	0.21	0.22	<0.10	<0.10	<0.10				0.18	0.28	0.08	0.10	-
Solids, Total Dissolved (TDS)	420	420	400	270	330	380	440	440	470	520	500	500	480				423	520	270	10	-
Solids, Total Suspended (TSS)	13	13	28	15	16	15	160	66	83	41	37	26	20				28.3	160.0	13.0	2.0	-
Solids, Total Volatile Suspended (TVSS)	7.6	5.2	7.6	5.6	8.4	8.0	110	35	56	17	13	12	9.6				12.2	110.0	1.6	1.0	-
Sulfate (SO_4)	34	32	34	22	27	32	38	46	46	43	37	41	41				36	46	22	5.0	
pH (pH units)	7.89	7.47	7.92	7.59	7.58	7.60	7.74	7.64	7.62	7.47	7.43	7.11	7.83	7.75	7.91	7.70	7.63	7.92	7.11	0.01	6< pH<9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.035
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	0.68	0.68	0.64	0.72	0.71	0.97	1.76	1.68	1.49	1.31	1.47	0.80	0.60				0.96	1.76	0.60	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.02	0.02	0.02	0.04	0.03	0.03	0.02	0.02	0.01	0.01	0.01	0.02	<0.01				0.02	0.04	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	0.01	0.02	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01				0.01	0.02	0.004	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES:
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-26
Broadway Street Bridge (B5)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	41000	67000	50000	68000	12000	13000	4100	1500	1000	1000	1000	1100	12000	1100	2300	2000	3389	68000	1000	100	235
Oil and Grease	2.8	<2.0	3.3	4.5	2.4	3.5	3.5	2.1	5.5	<2.0	-	<2.0	<2.0				2.3	5.5	1.2	2.0	-
Ammonia (NH_3), as N	1.0	1.0	0.77	0.87	0.45	0.36	0.64	0.38	0.36	0.44	0.64	0.04	1.1	0.19	0.15	<0.01	0.35	1.10	0.01	0.01	3.2
Carbonaceous Biochemical Oxygen Demand	15	24	22	16	5.7	4.3	14	67	9.1	15	14	2.7	83	2.7	15	5.1	22.5	83.0	2.7	2.0	-
Chemical Oxygen Demand (COD)	130	250	120	99	69	80	60	120	100	120	80	90	150				99	150	60	20	-
Chloride	210	100	120	70	110	200	120	120	120	120	120	130	110				110	230	70	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	0.006	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.001	0.006	0.001	0.005	0.022
Fluoride, (F)	1.02	0.99	0.92	0.74	0.34	0.72	1.26	2.70	1.35	2.52	2.47	2.61	2.62				1.38	2.70	0.72	0.10	12
Hardness, Total as $CaCO_3$	240	240	250	160	250	260	290	340	290	280	260	270	260				259.8	340.0	160.0	2.0	
Nitrogen, Total Kjeldahl as N (TKN)	4.9	9.8	3.9	5.5	4.9	2.3	2.9	4.9	3.8	4.1	4.6	1.8	6.0	2.3	1.4	1.8	3.58	9.80	1.40	0.50	-
Phosphorus, Total	0.85	1.1	0.63	0.61	0.41	0.40	1.3	0.85	0.45	0.57	0.37	<0.10	0.40				0.52	1.50	0.09	0.10	-
Solids, Total Dissolved (TDS)	560	400	460	260	420	456	490	500	490	600	480	510	470				458	600	260	10	-
Solids, Total Suspended (TSS)	93	190	30	17	18	19	22	160	70	18	37	18	220				42.2	220.0	17.0	2.0	-
Solids, Total Volatile Suspended (TVSS)	76	160	18	14	10	16	13	140	56	11	31	9.2	190				31.5	190.0	9.2	1.0	-
Sulfate (SO_4)	42	28	50	21	42	43	40	44	42	43	33	37	27				35	44	21	10	-
pH (pH units)	8.12	8.12	7.24	7.15	7.41	7.52	7.58	7.40	7.43	7.34	7.39	8.04	7.46	7.52	7.63	7.49	7.54	8.12	7.15	0.01	6< pH<9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.0005	0.005	0.0004	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01				0.001	0.01	0.001	0.01	0.038
Copper (Cu), Dissolved	1.08	0.96	0.64	0.53	0.72	0.75	1.14	3.04	0.93	1.02	0.90	0.71	0.76				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	0.09	0.12	0.09	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.91	3.04	0.53	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.03	0.12	0.02	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	0.01	<0.01	0.02	<0.02	<0.01	<0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.01	0.02	0.004	0.01	1.15
Zinc (Zn), Total Recoverable	0.04	0.05	0.03	0.04	0.01	<0.01	0.02	0.08	0.01	0.02	0.01	<0.01	<0.01				0.02	0.08	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	0.01	0.02	0.03	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.01	0.03	0.003	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.60	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.05	-
NOTES	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	ND	ND				0.00	0.00	0.00	0.10	-
																	0.00	0.00	0.00	0.05	0.036

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "A".

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "A" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-27
Georgia Street Bridge (B6)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	100	200	200	1300	400	300	300	300	600	200	100	1000	200	300	1100	700	337	1300	100	100	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	<2.0	2.6	4.0	<2.0	2.1	<2.0	<2.0	<2.0	<2.0				0.7	4.0	0.5	2.0	-
Ammonia (NH_3), as N	0.03	0.21	0.09	0.07	0.05	0.03	0.36	0.19	0.26	0.18	0.37	0.35	0.43	0.26	0.22	0.37	0.16	0.43	0.03	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	6.5	8.0	14	7.3	9.6	10	9.3	10	46	6.6	6.9	4.7	6.3	10	12	8.6	9.2	46.0	4.7	2.0	-
Chemical Oxygen Demand (COD)	119	110	92	70	70	70	99	180	90	70	60	60	90				84	180	60	20	-
Chloride	120	120	130	130	130	130	140	120	160	110	170	140	140				133	170	110	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	0.017	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.001	0.017	0.001	0.005	0.022
Fluoride, (F)	1.10	0.96	0.95	0.69	0.67	0.61	0.77	0.95	1.38	1.36	1.36	1.42	0.84				0.97	1.42	0.63	0.10	12
Hardness, Total as $CaCO_3$	250	330	290	280	280	270	290	280	280	270	270	280	280				278.2	310.0	250.0	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.0	2.5	4.2	3.4	2.9	5.2	2.6	3.1	4.0	2.3	4.0	2.5	4.2	3.1	3.1	2.7	2.13	5.20	2.00	0.50	-
Phosphorus, Total	0.24	0.24	0.40	0.23	<0.10	0.34	0.38	0.50	0.25	0.26	0.19	0.31	0.25				0.26	0.50	0.09	0.10	-
Solids, Total Dissolved (TDS)	510	520	490	510	570	540	550	560	600	450	560	520	530				537	600	450	10	-
Solids, Total Suspended (TSS)	15	17	18	17	20	22	21	47	130	540	11	14	16				27.8	540.0	11.0	2.0	-
Solids, Total Volatile Suspended (TVSS)	5.6	12	11	12	11	14	2.0	28	100	450	8.0	9.2	10				15.0	450.0	3.0	1.0	-
Sulfate (SO_4)	45	34	26	35	36	33	38	32	29	37	32	29	33				33	45	26	10	-
pH (pH units)	7.71	8.21	7.97	7.64	7.43	7.63	7.55	7.44	7.29	7.23	7.33	7.57	7.49	7.47	7.60	7.40	7.56	8.21	7.23	0.01	6< pH< 9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005				0.0005	0.006	0.0004	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	0.71	0.83	0.68	0.74	0.84	0.87	0.89	0.79	2.02	0.86	0.76	1.03	0.83				0.87	2.02	0.68	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.005	0.09	0.004	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0003	<0.0002				0.00002	0.0003	0.00002	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0007	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.001	0.02	0.001	0.01	1.15
Zinc (Zn), Total Recoverable	0.01	0.03	0.05	<0.01	0.03	<0.01	0.03	<0.01	0.02	0.02	0.02	0.02	0.02				0.02	0.05	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	0.02	<0.01	0.02	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.004	0.02	0.002	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
																	0.00	0.00	0.00	0.05	0.086

NOTES:
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4(a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "0" value

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-28
Railroad Tracks Bridge (B7)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU / 100mL)	400	200	400	600	400	300	1300	500	200	400	100	100	200	100	100	200	261	1700	100	100	235
Oil and Grease	<2.0	<2.0	2.0	2.0	<2.0	2.3	<2.0	<2.0	2.0	<2.0	2.6	<2.0	<2.0				1.1	2.6	0.8	2.0	
Ammonia (NH_3), as N	0.15	0.29	0.30	0.16	0.73	0.22	0.42	0.22	0.29	0.27	0.24	0.30	0.32	<0.01	0.05	0.04	0.10	0.42	0.01	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	12	5.7	10	5.3	6.7	6.6	6.6	4.8	3.2	3.6	6.6	3.9	7.6	8.5	4.3	5.5	5.9	12.0	3.2	2.0	-
Chemical Oxygen Demand (COD)	140	120	130	80	80	70	60	60	50	50	70	100	70	-	-		70	140	50	20	-
Chloride	120	120	130	130	130	130	110	130	130	130	130	110	120	-			124	130	110	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	0.007	0.011	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	-			0.002	0.011	0.002	0.005	0.022
Fluoride, (F)	0.91	0.91	1.0	0.93	0.91	0.85	0.72	0.99	0.37	0.61	0.92	0.96	0.93	-			0.82	1.00	0.37	0.10	12
Hardness, Total as $CaCO_3$	290	290	300	270	300	290	300	300	300	270	270	290	280				288.2	300.0	270.0	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	5.8	2.9	2.9	2.5	4.0	3.2	2.8	2.4	2.1	2.9	4.3	2.4	3.8	1.6	1.0	1.1	2.74	5.80	1.10	0.50	-
Phosphorus, Total	0.86	0.86	0.59	0.56	0.30	0.34	0.31	0.55	1.5	<0.10	0.10	0.26	0.34	-	-		0.37	1.50	0.09	0.10	-
Solids, Total Dissolved (TDS)	530	520	500	470	560	550	530	520	530	500	510	520	510	-	-		519	560	470	10	-
Solids, Total Suspended (TSS)	110	85	49	24	26	43	22	16	12	14	23	19	44		-		29.6	110.0	12.0	2.0	-
Solids, Total Volatile Suspended (TVSS)	54	36	24	11	16	20	11	12	8.0	5.2	21	14	17	-	-		16.0	54.0	5.2	1.0	-
Sulfate (SO_4)	32	28	32	46	44	38	11	37	38	33	34	32	32				32	46	11	10	-
pH (pH units)	7.65	7.97	7.63	7.62	7.58	7.55	7.68	7.44	7.45	7.49	7.46	7.75	7.65	7.60	7.65	7.45	7.60	7.97	7.44	0.01	6<=pH<=9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.001	0.006	0.001	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.5
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	3.84	2.67	1.48	1.12	1.84	1.78	1.32	1.30	1.26	1.35	1.45	1.16	3.07				1.68	3.84	1.12	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Dissolved	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.03	0.05	0.04	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.02				0.002	0.01	0.002	0.01	1.15
Zinc (Zn), Dissolved	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01				0.002	0.05	0.01	0.01	0.30
PESTICIDES																	0.002	0.02	0.002	0.01	0.29
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.34
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES:
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0"
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-29
Martin Luther King Drive Bridge (B8)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	300	300	800	84000	35000	65000	42000	21000	14000	8100	5000	2500	2500	600	500	900	4273	88000	200	100	235
Oil and Grease	2.4	<2.0	<2.0	5.1	<2.0	2.9	2.0	<2.0	<2.0	2.0	<2.0	<2.0	<2.0				1.2	5.1	0.8	2.0	-
Ammonia (NH_3), as N	0.14	0.14	0.08	1.1	0.19	0.64	0.48	0.27	0.26	0.24	0.28	0.10	0.18	0.17	0.09	0.03	0.19	1.10	0.03	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	3.5	3.1	9.2	15	9.7	9.5	7.4	5.8	4.8	5.0	7.2	5.5	5.3	6.1	4.5	10	6.2	15.0	3.1	2.0	-
Chemical Oxygen Demand (COD)	100	100	60	130	60	60	60	60	60	60	60	50	60				68	130	50	20	
Chloride	120	120	140	40	130	85	100	100	92	130	140	130	120				107	140	40	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	0.009	0.007	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.002	0.009	0.001	0.005	0.022
Fluoride, (F)	0.97	0.91	0.90	0.85	0.82	0.80	0.50	0.69	0.64	0.85	0.81	0.85	0.85				0.79	0.97	0.50	0.10	12
Hardness, Total as $CaCO_3$	260	280	250	90	260	210	200	240	250	250	270	270	260				225.8	280.0	70.0	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	1.6	1.8	1.7	4.7	3.7	3.5	3.1	2.4	2.3	2.3	3.0	2.7	1.7	2.6	1.7	1.8	2.44	5.70	1.60	0.50	
Phosphorus, Total	0.28	0.30	0.31	0.58	0.36	0.43	0.51	0.48	0.46	0.43	0.25	0.19	0.18				0.34	0.58	0.18	0.10	-
Solids, Total Dissolved (TDS)	500	510	500	140	550	380	400	450	510	490	530	550	470				440	550	140	10	
Solids, Total Suspended (TSS)	9.6	11	12	32	26	16	14	16	13	16	17	18	14				15.6	32.0	9.6	2.0	-
Solids, Total Volatile Suspended (TVSS)	7.6	9.2	8.8	24	17	13	12	8.0	8.8	9.6	12	14	10				11.2	24.0	7.6	1.0	-
Sulfate (SO_4)	30	50	27	15	32	29	32	32	29	36	34	33	32				31	50	15	10	-
pH (pH units)	8.15	7.44	7.87	6.99	7.61	7.31	7.20	7.40	7.26	7.35	7.38	8.36	8.18	7.68	8.30	8.05	7.64	8.30	6.99	0.01	6< pH<9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.07	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006				0.0005	0.006	0.0004	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.001	0.01	0.001	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	0.78	0.81	0.81	0.91	2.15	0.78	0.89	1.27	1.27	1.39	1.28	1.27	1.06				1.08	2.15	0.78	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	0.11	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.005	0.11	0.004	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	<0.01	0.03	0.02	0.06	0.02	0.02	0.03	0.02	0.02	0.01	0.02	<0.01	0.02				0.02	0.06	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	0.03	<0.01	<0.01				0.004	0.03	0.002	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4(a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value

Bridge_Wet_Event_1.xls
MLK

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-30
Clay Street Bridge (B9)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU / 100mL)	200	500	1100	800	1100	1300	500	600	600	300	200	700	300	700	500	<100	435	1300	94	100	235
Oil and Grease	<2.0	2.5	<2.0	2.2	2.9	2.9	<2.0	<2.0	<2.0	3.5	<2.0	<2.0	<2.0				1.3	3.5	0.8	2.0	-
Ammonia (NH_3, as N	0.03	0.05	0.03	0.01	<0.01	<0.01	0.02	0.02	0.03	<0.01	0.01	0.02	<0.01	0.30	0.26	0.29	0.03	0.30	0.01	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	4.1	3.7	3.7	4.5	8.0	4.5	4.4	3.4	2.6	<2.0	6.3	4.3	2.7	4.5	4.3	3.8	4.0	8.0	1.9	2.0	-
Chemical Oxygen Demand (COD)	80	80	70	30	50	50	20	50	60	50	50	40	50				49	80	20	20	-
Chloride	52	64	63	63	78	78	64	55	75	72	74	69	64				67	78	52	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	0.007	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.001	0.007	0.001	0.005	0.022
Fluoride, (F)	0.48	0.47	0.46	0.47	0.45	0.44	0.33	0.30	0.35	0.41	0.35	0.38	0.38				0.40	0.48	0.30	0.10	12
Hardness, Total as $CaCO_3$	270	250	250	250	250	250	250	250	260	270	260	260	250				255.3	270.0	250.0	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	1.7	1.6	1.7	2.6	3.1	3.2	3.9	2.2	1.6	1.6	2.4	2.4	2.2	3.4	2.4	2.0	2.28	3.90	1.60	0.50	-
Phosphorus, Total	0.18	0.18	0.25	0.18	0.19	0.22	0.17	0.19	<0.10	<0.10	0.11	0.12	<0.10				0.15	0.25	0.08	0.10	-
Solids, Total Dissolved (TDS)	400	380	400	440	410	420	410	440	430	430	430	420	430				418	440	380	10	-
Solids, Total Suspended (TSS)	35	58	32	26	36	38	35	39	41	43	46	42	59				37.3	46.0	26.0	2.0	-
Solids, Total Volatile Suspended (TVSS)	12	12	9.2	8.4	11	12	11	13	13	14	13	14	14				11.9	14.0	8.4	1.0	-
Sulfate (SO_4)	49	61	48	60	65	52	59	60	62	55	78	59	49				58	78	48	10	-
pH (pH units)	8.12	8.14	8.17	7.74	8.09	7.94	7.80	7.99	7.87	7.76	7.89	8.07	8.11	7.90	8.13	7.84	7.97	8.17	7.74	0.01	6< pH<9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.001	0.01	0.001	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	1.29	1.22	1.19	0.94	1.26	1.21	1.19	1.33	1.32	1.45	1.34	1.30	1.20				1.24	1.45	0.94	0.05	-
Iron (Fe), Dissolved	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.005	0.05	0.004	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	<0.01	<0.01	<0.01	<0.01	0.01	0.01	<0.01	0.01	0.02	0.02	0.02	0.02	0.01				0.01	0.02	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES:
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0"
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "0" value

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-31
Ripley Street Bridge (B10)
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	500	300	300	100	600	1100	2400	1000	700	400	300	300	300	200	200	400	399	1400	100	100	235
Oil and Grease	<2.0	<2.0	4.1	2.1	2.0	2.9	3.2	<2.0	<2.0	<2.0	<2.0	3.2	<2.0				1.6	5.2	0.9	2.0	-
Ammonia (NH_3) as N	0.02	0.04	0.05	0.03	0.06	0.03	0.07	0.04	0.09	0.02	0.09	0.01	0.02	<0.01	0.01	0.01	0.03	0.09	0.01	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	3.1	3.7	9.7	4.1	3.7	3.5	3.7	4.8	4.0	<2.0	<2.0	3.5	2.5	4.3	8.7	10	3.9	10.0	1.8	2.0	-
Chemical Oxygen Demand (COD)	50	70	70	40	50	60	90	40	30	40	40	70	40				51	90	30	20	-
Chloride	60	61	68	66	75	76	65	68	73	71	67	76	55				67	76	55	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.007	0.000	0.005	0.022
Fluoride (F)	0.40	0.46	0.40	0.39	0.37	0.36	0.31	0.27	0.28	0.26	0.27	0.31	0.29				0.33	0.40	0.26	0.10	12
Hardness, Total as $CaCO_3$	260	250	250	270	260	260	240	240	260	260	250	250	260				254.5	270.0	240.0	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	1.7	1.8	2.4	1.4	2.3	1.4	1.3	0.98	1.5	2.3	2.2	2.7	1.9	1.7	1.5	1.7	1.94	2.70	0.98	0.50	-
Phosphorus, Total	0.18	0.80	0.65	0.21	0.22	0.25	<0.10	0.17	0.15	<0.10	<0.10	<0.10	0.10				0.17	0.80	0.07	0.10	-
Solids, Total Dissolved (TDS)	390	360	450	450	280	420	400	400	430	410	440	410	400				415	450	380	10	-
Solids, Total Suspended (TSS)	29	46	36	34	32	28	24	25	36	35	36	28	27				30.9	46.0	24.0	2.0	-
Solids, Total Volatile Suspended (TVSS)	13	15	12	11	8.4	9.6	6.0	8.4	12	12	12	10	11				10.5	15.0	6.0	1.0	-
Sulfate (SO_4)	50	52	52	62	68	14	11	56	130	59	63	11	54				42	130	11	10	-
pH (pH units)	8.12	8.12	8.05	7.71	7.14	7.94	7.91	7.80	7.52	7.77	7.66	8.10	8.02	7.95	8.29	7.97	7.89	8.29	7.14	0.01	6< pH< 9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.004	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	0.95	1.23	1.16	1.13	1.01	1.01	0.84	0.82	1.09	0.96	1.03	0.87	0.91				0.99	1.23	0.82	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	<0.01	<0.01	0.02	0.02	0.01	0.03	<0.01	0.01	0.02	0.02	0.02	0.02	0.01				0.01	0.03	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
NOTES:																	0.00	0.00	0.00	0.05	0.086

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-32
Deep River
First Wet Weather Sample Event
September 18 - 21, 2001

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU / 100mL)	300	100	800	700	1500	500	400	300	400	500	800	200	100	200	100	100	327	1500	100	100	235
Oil and Grease	<2.0	2.0	<2.0	<2.0	<2.0	3.0	<2.0	<2.0	2.3	2.7	<2.0	<2.0	<2.0				0.94	3.0	0.62	2.0	-
Ammonia (NH_3), as N	<0.01	0.03	0.03	0.03	0.02	0.01	0.01	0.02	<0.01	0.01	0.02	0.05	0.14	0.02	0.04	0.07	0.02	0.14	0.01	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	2.7	3.5	9.5	4.1	4.5	4.6	3.2	4.2	4.4	2.6	16	3.9	5.5	4.5	4.4	4.8	4.6	16	2.6	2.0	-
Chemical Oxygen Demand (COD)	30	40	50	60	50	20	30	40	40	40	40	80	40				46	80	20	20	-
Chloride	61	62	65	63	62	63	63	76	70	61	61	61	60				64	76	60	10	860
Cyanide Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	0.006	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.001	0.006	0.001	0.005	0.022
Fluoride (F)	0.39	0.47	0.52	0.49	0.47	0.46	0.67	0.92	0.41	0.38	0.38	0.42	0.39				0.47	0.92	0.38	0.25	12
Hardness, Total as $CaCO_3$	260	270	260	290	260	250	240	250	250	250	260	280	260				260	290	240	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.0	2.2	2.9	4.6	2.5	2.1	1.4	1.1	1.4	2.1	2.3	1.6	2.4	1.7	1.5	<0.50	1.8	4.6	0.47	0.50	-
Phosphorus, Total	0.23	0.19	0.28	<0.10	0.21	0.15	<0.10	0.16	0.15	0.14	0.14	0.16	0.14				0.16	0.28	0.08	0.10	-
Solids, Total Dissolved (TDS)	420	400	370	360	360	430	390	410	430	430	430	450	400				404	440	360	10	-
Solids, Total Suspended (TSS)	30	44	75	74	26	33	32	36	41	31	34	40	49				36	74	25	2.0	-
Solids, Total Volatile Suspended (TVSS)	13	12	9.2	19	10	11	8.0	14	14	10	13	16	14				12	19	8	1.0	-
Sulfate (SO_4)	48	48	47	60	70	51	50	56	53	55	62	61	51				48	70	11	10	-
pH (pH units)	8.29	8.08	7.86	7.10	7.99	7.78	7.93	8.05	7.87	7.75	7.83	8.12	8.20	8.03	8.07	7.97	7.93	8.29	7.10	0.01	6< pH< 9
METALS																					
Arsenic (As), Total Recoverable	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	1.24	1.06	1.38	0.45	0.79	1.05	1.01	1.14	1.28	0.97	1.02	1.09	1.64				1.04	1.64	0.45	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	<0.01	<0.01				0.001	0.02	0.001	0.01	1.15
Zinc (Zn), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	0.01	0.01				0.003	0.01	0.002	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0"

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "0" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-33
Cline Avenue Bridge (B1)
Second Wet Weather Sample Event
April 22 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E. coli (CFU/100ml.)	500	200	700	200	100	300	500	4500	6000	3100	3400	3100	3000	2200	1300	1300	1008	5900	100	100	235
Oil and Grease	2.4	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.6	<2.0	2.7	<2.0				0.7	2.7	0.5	2.0	
Ammonia (NH_3), as N	0.07	0.08	0.08	0.13	0.60	0.17	0.70	0.16	0.13	0.12	0.14	0.14	0.16	0.68	0.08	0.09	0.12	0.70	0.07	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	6.2	6	6.3	4.3	4.7	4.1	5.6	6.2	6.3	6.3	4.5	6.9	5.0	2.6	4.1	6.4	5.2	6.9	2.6	2.0	-
Chemical Oxygen Demand (COD)	40	40	40	40	70	50	40	30	40	40	40	70	60				45	70	30	20	-
Chloride	106	109	106	100	160	110	130	93	130	49	97	74	50				91	130	49	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	0.010	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.0005	0.010	0.0001	0.005	0.022
Fluoride, (F)	2.76	3.36	3.80	3.64	3.68	3.58	3.73	3.37	3.66	3.61	3.64	3.68	3.60				3.60	3.80	3.16	0.25	12
Hardness, Total as $CaCO_3$	290	360	300	300	320	310	350	330	200	270	260	240	240				291	350	240	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.8	1.9	1.8	2.0	1.2	1.5	1.5	1.4	0.90	1.7	1.7	1.5	2.7	1.6	1.8	1.8	1.7	2.7	0.90	0.50	
Phosphorus, Total	0.15	0.16	0.22	0.72	0.26	0.21	0.15	0.16	0.23	0.17	0.12	0.17	1.7				0.24	1.7	0.12	0.10	-
Solids, Total Dissolved (TDS)	540	540	510	550	520	540	560	550	510	479	470	430	460				500	560	460	10	-
Solids, Total Suspended (TSS)	22	23	27	26	28	33	31	35	29	34	32	39	45				30	45	22	1.0	-
Solids, Total Volatile Suspended (TVSS)	5.4	5.4	6.6	5.6	5.9	8.0	6.8	5.2	5.8	7.0	6.6	6.3	8.4				6.1	8.4	5.2	3.0	-
Sulfate (SO_4)	110	84	91	110	78	100	82	100	89	95	90	120	84				94	120	78	10	-
pH (pH units)	7.34	7.81	7.55	7.79	7.84	7.67	7.13	7.67	7.75	7.77	7.62	7.64	7.79	7.60	7.69	7.68	7.65	7.87	7.13	0.01	6.5-9.0 SU
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	1.30	1.21	1.27	1.23	1.35	1.29	1.32	1.15	1.37	1.30	1.00	1.72	2.61				0.001	0.01	0.00	0.01	0.037
Iron (Fe), Total Recoverable	0.08	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.10				1.41	2.61	1.18	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.01	0.10	0.01	0.05	-
Lead (Pb), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	0.02	0.01	0.02	<0.01	0.01	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.02				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.02	0.02	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.001	0.01	0.001	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
NOTES:																	0.00	0.00	0.00	0.05	0.086

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0".

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "0" value.

[4]The original analysis for Sample No. 8 yielded a concentration of 520 mg/l. A second analysis conducted beyond the sample holding time yielded a concentration of 330 mg/l. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation.

Bridge_Wet_Event_2.xls
Cline

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-34
Clark Street Bridge (B2)
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	100	300	100	300	900	500	600	1300	600	1300	1400	1900	1200	500	900	1000	609	1900	100	100	235
Oil and Grease	7.8	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0				0.4	2.8	0.3	2.0	-
Ammonia (NH_3), as N	<0.01	0.06	0.07	0.09	0.12	0.17	0.13	0.15	0.13	0.13	0.12	0.14	0.14	0.18	0.09	0.11	0.10	0.18	0.01	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	6.9	7.6	6.3	6.2	3.6	3.2	4.0	6.0	5.9	4.9	4.6	4.9	6.0	2.9	4.8	6.5	5.0	7.6	2.9	2.0	-
Chemical Oxygen Demand (COD)[4]	50	50	40	40	50	30	40	30	50	50	50	40	40				42	50	30	20	-
Chloride	120	120	120	120	120	110	120	150	100	61	130	130	40				104	150	40	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	0.017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.001	0.017	0.0004	0.005	0.022
Fluoride, (F)	1.04	3.12	3.24	3.31	2.95	2.95	2.87	2.77	3.09	3.04	3.12	3.01	3.21				3.05	3.31	2.77	0.25	12
Hardness, Total as $CaCO_3$	310	340	300	310	320	350	300	110	290	320	320	250	300				311	350	280	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.2	1.9	1.9	2.0	1.1	1.3	2.2	1.3	0.81	0.60	1.8	2.0	1.8	<0.50	1.7	1.7	1.4	2.2	0.47	0.50	-
Phosphorus, Total	0.16	0.15	0.16	0.16	<0.10	0.18	0.13	0.16	0.18	0.22	0.24	0.17	0.17				0.16	0.24	0.09	0.10	-
Solids, Total Dissolved (TDS)[5]	590	560	570	570	520	540	500	510	610	570	700	510	480				554	700	450	10	-
Solids, Total Suspended (TSS)	42	37	29	31	33	37	31	35	32	33	35	30	40				33	42	29	1.0	-
Solids, Total Volatile Suspended (TVSS)	9.6	8.0	7.4	7.8	7.4	8.0	6.6	7.6	7.5	6.6	6.4	6.2	7.0				7.4	9.6	6.2	1.0	-
Sulfate (SO_4)	130	180	230	120	88	69	90	110	94	180	92	91	100				110	230	69	10	-
pH (pH units)	7.70	7.81	7.75	7.81	7.56	7.17	7.42	7.84	7.71	7.59	7.66	7.66	7.66	7.36	7.59	7.56	7.60	7.84	7.17	0.01	6<=pH<=9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	1.96	1.65	1.57	1.29	1.12	1.51	0.94	1.44	1.50	1.48	1.71	1.56	1.54				1.46	1.96	0.94	0.05	
Iron (Fe), Dissolved	0.49	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.06	<0.05	<0.05	<0.05	<0.05	<0.05				0.01	0.49	0.008	0.05	
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.04	0.01	0.02	0.01	0.02	0.02	0.02	0.02	0.04	0.02	0.03	0.03	0.03				0.02	0.04	0.01	0.01	0.30
Zinc (Zn), Dissolved	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03	0.05	<0.01	<0.01	0.01	0.01	<0.01				0.01	0.05	0.004	0.01	0.29
Pesticides																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
																	0.00	0.00	0.00	0.05	0.086

NOTES:
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0".

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "0" value.

[4]The original analysis for Sample No. 11 yielded a concentration of 190 mg/L. A second analysis conducted beyond the sample holding time yielded a concentration of 50 mg/L. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation.

[5]The original analysis for Sample No. 1 yielded a concentration of 11,000 mg/L. A second analysis conducted beyond the sample holding time yielded a concentration of 590 mg/L. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-35
Chase Street Bridge (B3)
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100ml)	300	200	400	200	600	200	200	1300	700	1500	1100	1500	1600	300	800	1600	623	1800	200	100	235
Oil and Grease	<2.0	3.7	<2.0	2.3	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	<2.0	2.3				3.0	3.7	0.6	2.0	-
Ammonia (NH_3), as N	<0.01	0.05	0.07	0.06	0.18	0.19	0.17	0.15	0.15	0.18	0.16	0.19	0.17	0.15	0.10	0.13	0.11	0.19	0.01	0.01	1.7
Carbonaceous Biochemical Oxygen Demand	6.7	7.7	6.2	6.5	3.4	3.7	4.0	6.7	4.2	4.7	4.4	4.8	4.0	<2.0	4.4	4.2	4.7	7.7	1.9	2.0	-
Chemical Oxygen Demand (COD)	50	40	50	40	50	70	60	60	50	50	70	60	70				54	70	40	20	-
Chloride	120	120	120	120	120	110	120	49	100	110	120	47	97				100	120	47	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.022
Fluoride, (F)	3.39	3.30	3.37	3.26	3.31	3.21	3.15	3.32	3.15	3.09	3.21	3.15	3.25				3.24	3.39	3.09	0.25	17
Hardness, Total as $CaCO_3$	350	400	340	330	320	290	310	320	320	330	260	240	270				312	400	240	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.2	1.7	2.3	1.8	1.3	1.1	1.5	<0.50	0.67	0.63	2.4	2.2	1.5	1.6	1.9	1.7	1.4	2.4	0.47	0.50	-
Phosphorus, Total	0.10	0.10	0.16	0.17	0.10	0.18	0.16	0.16	0.20	0.15	0.17	0.21	0.16				0.15	0.21	0.09	0.10	
Solids, Total Dissolved (TDS)	590	620	560	560	550	540	540	520	560	540	570	500	470				545	620	470	10	-
Solids, Total Suspended (TSS)	44	39	30	29	29	38	33	33	37	35	35	32	29				33	44	29	1.0	-
Solids, Total Volatile Suspended (TVSS)	10	8.8	9.0	7.4	6.4	7.2	6.9	7.2	6.6	7.0	6.6	6.0	6.7				7.2	10	6.0	1.0	-
Sulfate (SO_4)[4,5,6]	100	95	120	67	82	58	91	94	94	120	160	94	100				98	160	67	10	-
pH (pH units)	7.96	7.87	7.82	7.91	7.70	7.49	7.35	7.82	7.65	7.39	6.96	7.59	8.16	7.34	7.68	7.60	7.64	8.16	6.96	0.01	6<=pH<=9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	1.80	1.60	1.55	1.29	1.58	1.82	1.52	1.48	1.53	1.66	1.78	1.70	1.51				1.59	1.82	1.29	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.04	0.02	0.03	0.01	0.03	0.02	0.03	0.03	0.04	0.03	0.04	0.03	0.03				0.03	0.04	0.01	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.02	0.04	0.01	<0.01				0.01	0.04	0.003	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
																	0.00	0.00	0.00	0.05	0.086

NOTES:

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0"

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "0" value.

[4]The original analysis for Sample No. 7 yielded a concentration of 230 mg/l. A second analysis conducted beyond the sample holding time yielded a concentration of 91 mg/l. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation

[5]The original analysis for Sample No. 8 yielded a concentration of 220 mg/l. A second analysis conducted beyond the sample holding time yielded a concentration of 94 mg/l. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation

[6]The original analysis for Sample No. 9 yielded a concentration of 230 mg/l. A second analysis conducted beyond the sample holding time yielded a concentration of 94 mg/l. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-36
Grant Street Bridge (B4)
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU / 100mL)	200	200	300	100	4200	300	600	300	100	200	400	900	350	900	700	500	439	4200	100	100	235
Oil and Grease	<2.0	<2.0	<2.0	2.6	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0				6.4	2.6	0.3	2.0	
Ammonia (NH_3), as N	<0.01	<0.01	<0.01	0.21	0.09	0.11	0.18	0.31	0.32	0.68	0.09	0.10	0.11	0.07	0.07	0.09	0.07	0.37	0.01	0.01	5.7
Carbonaceous Biochemical Oxygen Demand	7.3	8.9	7.3	5.9	4.6	5.9	4.3	6.4	4.5	7.5	4.6	3.6	5.6	4.8	4.8	5.5	5.5	8.9	3.6	2.0	-
Chemical Oxygen Demand (COD)	60	50	40	50	50	50	40	50	50	50	40	40	50				47	60	40	20	-
Chloride	120	120	120	100	110	100	110	160	110	130	68	210	110				111	160	68	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.022
Fluoride, (F)	2.65	2.81	2.81	2.70	2.62	2.76	2.65	2.65	2.60	2.53	2.62	2.59	2.67				2.66	2.81	2.53	0.25	12
Hardness, Total as $CaCO_3$	340	310	320	420	410	330	390	350	370	320	300	390	290				343	420	290	20	-
Nitrogen, Total Kjeldahl as N (TKN)	2.1	2.2	2.1	2.5	1.2	1.2	1.2	0.69	0.87	0.79	1.9	1.5	1.7	1.4	1.8	1.0	1.5	2.5	0.69	0.50	-
Phosphorus, Total	0.18	0.15	0.14	0.14	0.11	0.50	0.12	0.14	0.14	0.14	0.17	0.13	0.14				0.15	0.50	0.11	0.10	-
Solids, Total Dissolved (TDS)	590	610	540	680	620	600	600	580	590	540	650	550	540				590	680	540	10	-
Solids, Total Suspended (TSS)	43	32	28	21	21	24	28	41	42	38	38	29	28				31	43	21	1.0	-
Solids, Total Volatile Suspended (TVSS)	11	8.6	9.4	6.0	5.6	6.6	7.2	9.8	8.2	9.4	7.8	5.8	6.8				7.2	11	5.6	1.0	-
Sulfate (SO_4)	190	200	230	190	100	96	150	170	230	67	100	150	98				135	230	67	10	-
pH (pH units)	7.35	7.34	7.25	7.47	7.37	7.11	7.39	7.50	7.31	7.38	7.81	7.86	7.59	7.78	7.66	7.69	7.52	7.88	7.11	0.01	6<=pH<=9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	1.68	1.07	0.95	0.95	0.92	1.07	1.07	1.55	1.53	1.51	1.57	1.27	1.60				1.26	1.68	0.92	0.05	-
Iron (Fe), Dissolved	0.09	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.005	0.09	0.004	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.03	0.02	0.03	0.03	0.02	0.05	0.03	0.03	0.03	0.03	0.04	0.03	0.05				0.03	0.05	0.02	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	0.04	<0.01	0.02	<0.01	<0.01	<0.01	0.01	0.01				0.01	0.04	0.005	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
																	0.00	0.00	0.00	0.05	0.086

NOTES:
All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter
[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V"
[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.
[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-37
Broadway Street Bridge (B5)
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	100	100	100	200	200	200	500	400	300	500	100	560	820	600	600	900	287	900	100	100	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.0	<2.0	<2.0	<2.0	<2.0				0.0	0.0	0.0	2.0	-
Ammonia (NH_3), as N	0.01	0.28	0.06	0.12	0.10	0.14	0.16	0.16	0.27	0.16	0.10	0.14	0.17	0.12	0.08	0.10	0.11	0.28	0.01	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	8.7	7.2	5.8	6.8	5.9	4.0	5.5	7.0	5.6	6.5	5.3	3.8	4.5	3.2	2.8	5.6	5.3	8.7	2.8	2.6	-
Chemical Oxygen Demand (COD)	50	50	40	50	50	50	60	50	50	40	50	50	50				49	60	40	20	-
Chloride	120	130	120	120	110	110	70	150	170	74	56	260	85				109	200	56	10	860
Cyanide, Weak Acid Dissociable (WAD)	0.022	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.0005	0.022	0.0004	0.005	0.022
Fluoride, (F)	2.52	2.33	2.31	2.26	2.33	2.31	2.26	2.28	2.26	2.28	2.26	2.33	2.34				2.31	2.52	2.20	0.25	12
Hardness, Total as $CaCO_3$	340	330	320	320	390	390	370	380	360	240	330	260	250				325	390	240	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.0	2.4	2.1	2.2	1.3	1.3	1.7	0.64	0.83	1.7	0.61	2.1	1.3	1.8	1.6	1.4	1.5	2.4	0.61	0.50	-
Phosphorus, Total	0.13	<0.10	0.11	0.15	0.11	0.11	<0.16	0.13	3.5	0.14	0.13	0.26	0.13				0.16	3.5	0.08	0.10	-
Solids, Total Dissolved (TDS)	550	570	560	550	680	660	590	620	680	550	550	580	520				589	680	520	10	-
Solids, Total Suspended (TSS)	34	28	23	23	26	21	22	25	30	34	29	27	31				26	34	20	1.0	-
Solids, Total Volatile Suspended (TVSS)	9.4	8.6	6.6	7.2	6.0	6.8	6.6	7.0	8.0	7.0	5.8	6.2	7.8				7.1	9.4	5.8	1.0	-
Sulfate (SO_4)	110	93	93	85	130	99	160	140	150	84	110	170	100				114	170	84	10	-
pH (pH units)	7.28	7.83	7.44	7.36	7.36	7.07	7.60	7.71	7.55	7.80	7.86	7.67	7.35	7.76	7.60	7.58	7.55	7.86	7.07	0.01	6< pH<=9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.001	0.03	0.001	0.01	0.037
Iron (Fe), Total Recoverable	1.39	1.20	0.97	1.06	0.97	1.00	1.03	1.16	1.30	1.39	1.40	1.25	1.34				1.18	1.40	0.97	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.07	0.04	0.02	0.03	0.03	0.02	0.05	0.03	0.04	0.04	0.03	0.03	0.03				0.03	0.07	0.02	0.01	0.30
Zinc (Zn), Dissolved	<0.01	0.02	<0.01	0.04	0.02	0.02	0.03	0.01	<0.01	<0.01	0.01	0.02	0.02				0.01	0.04	0.01	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES:

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V"

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-38
Georgia Street Bridge (B6)
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	400	600	2800	21000	4600	4200	900	700	300	600	650	400	500	400	200	600	1000	2,400	200	100	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.1	2.0	<2.0	2.1	<2.0	<2.0				0.4	2.1	0.3	2.0	-
Ammonia (NH_3), as N	<0.01	<0.01	0.27	0.22	0.15	0.20	0.20	0.12	0.22	0.19	0.10	0.10	0.23	0.06	0.10	0.09	0.10	0.23	0.01	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	8.1	8.1	8.4	6.9	5.3	4.6	5.2	6.3	5	5.3	3.9	5.1	4.6	3.0	4.8	6.1	5.8	9.9	3.9	2.0	-
Chemical Oxygen Demand (COD)	60	50	50	50	60	60	50	40	20	60	40	40	40				49	60	40	20	-
Chloride[4]	120	120	120	120	130	120	130	83	120	97	110	110	65				107	130	65	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005				0.0005	0.005	0.0004	0.005	0.022
Fluoride, (F)	2.10	2.18	2.12	2.09	2.20	2.24	2.18	2.12	2.19	2.33	2.28	2.44	2.37				2.23	2.44	2.09	0.25	12
Hardness, Total as $CaCO_3$	330	340	300	320	360	380	380	370	360	340	310	330	300				336	380	300	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	1.8	2.1	1.6	2.6	1.2	<0.50	1.2	0.74	0.52	1.5	1.5	0.68	2.0	0.99	1.4	1.4	1.2	2.6	0.47	0.50	-
Phosphorus, Total	0.13	0.13	<0.10	0.15	0.15	<0.10	0.12	0.12	<0.10	<0.10	0.13	0.13	0.13				0.11	0.15	0.08	0.10	-
Solids, Total Dissolved (TDS)	590	550	560	590	600	650	610	600	590	600	580	570	660				595	660	550	10	-
Solids, Total Suspended (TSS)	28	26	29	19	20	18	28	18	22	24	25	20	19				21	28	18	5.0	-
Solids, Total Volatile Suspended (TVSS)	7.2	8.2	7.3	7.8	6.6	6.2	5.2	4.8	6.4	7.0	6.4	5.2	4.6				6.3	8.2	4.8	1.0	-
Sulfate (SO_4)	140	130	130	120	83	110	140	130	94	86	78	120	90				109	140	78	10	-
pH (pH units)	7.50	7.52	7.54	7.28	7.52	7.34	7.53	7.44	7.25	7.68	7.78	7.18	7.81	7.73	7.57	7.46	7.52	7.81	7.18	0.01	6< pH<9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.033
Iron (Fe), Total Recoverable	1.09	1.01	0.80	0.74	0.84	0.89	0.86	0.81	0.96	0.98	1.02	1.20	0.95				0.91	1.20	0.74	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.02	0.04	0.03	0.03	0.04	0.03	0.03	0.03	0.03	0.01	0.03	0.02	0.05				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Dissolved	<0.01	0.02	0.01	0.02	0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.03				0.00	0.05	0.01	0.01	0.30
PESTICIDES																	0.0	0.01	0.005	0.01	0.29
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND								
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
																	0.00	0.00	0.00	0.05	0.086

NOTES

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(BRC) in which samples with concentrations below the detection limit are assigned the value "0".

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "0" value.

[4]The original analysis for Sample No. 12 yielded a concentration of 210 mg/L. A second analysis conducted beyond the sample holding time yielded a concentration of 110 mg/L. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-39
Railroad Trucks Bridge (B7)
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
PARAMETER																					
CONVENTIONALS:																					
E-coli (CFU/100mL)	500	400	300	3300	8700	2200	1100	900	900	800	300	360	300	360	100	100	575	8300	100	100	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	-	-	-	0.0	0.0	0.0	2.0	-
Ammonia (NH_3) as N	<0.01	<0.01	<0.01	0.13	0.13	0.09	0.08	0.04	0.06	0.03	0.16	0.10	0.14	0.05	0.02	0.06	0.05	0.16	0.01	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	7.8	9.5	8.0	6.9	5.3	4.7	5.2	7.2	5.6	5.9	7.0	4.4	5.4	6.6	4.0	4.7	6.0	9.5	4.0	2.0	-
Chemical Oxygen Demand (COD)	50	50	60	40	90	70	50	50	60	40	50	50	50	-	-	-	51	90	40	20	-
Chloride*	120	120	130	120	280	130	110	130	120	150	100	110	110	-	-	-	128	280	100	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	0.000	0.000	0.000	0.005	0.022
Fluoride (F)	2.18	2.26	2.26	2.24	2.24	2.18	2.18	2.14	2.18	2.18	2.20	2.18	2.24	-	-	-	2.20	2.26	2.14	0.25	12
Hardness, Total as $CaCO_3$	360	350	390	310	330	360	380	380	320	320	260	310	350	-	-	-	321	380	250	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.2	2.7	2.1	2.8	1.6	2.7	1.4	2.8	1.9	1.7	0.67	1.7	1.9	<0.50	1.6	1.7	1.7	2.8	0.47	0.50	-
Phosphorus, Total	<0.10	0.10	0.15	0.14	0.12	0.15	0.11	0.16	0.11	0.14	<0.10	0.11	<0.10	-	-	-	0.11	0.16	0.08	0.10	-
Solids, Total Dissolved (TDS)	560	560	580	580	580	660	650	600	620	590	590	550	560	-	-	-	591	650	560	50	-
Solids, Total Suspended (TSS)	39	28	26	18	21	21	18	19	17	20	21	20	15	-	-	-	21	29	15	1.0	-
Solids, Total Volatile Suspended (TVSS)	10	10	9.0	6.4	6.8	8.8	6.4	7.6	4.4	6.2	3.0	5.2	4.4	-	-	-	6.9	10	4.4	1.0	-
Sulfate (SO_4)	92	85	86	58	85	85	150	110	140	86	97	98	110	-	-	-	96	159	58	10	-
pH (pH units)	7.20	8.10	7.63	7.17	7.46	7.48	7.46	7.84	7.66	7.68	7.33	7.08	7.54	7.52	7.65	7.71	7.57	8.10	7.08	0.01	6< pH<=9
METALS:																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	-	-	-	0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	0.007	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	-	-	-	<0.005	0.007	0.0004	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	1.13	1.13	0.92	0.81	0.88	0.90	0.87	0.85	0.72	0.90	0.92	1.07	0.80	-	-	-	0.91	1.13	0.72	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.05	-	-	-	0.005	0.05	0.004	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	-	-	0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	-	0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	-	-	-	0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	-	-	0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.01	0.01	0.03	0.03	0.02	0.02	0.03	0.02	0.03	0.02	0.02	0.02	0.01	-	-	-	0.02	0.03	0.01	0.01	0.30
Zinc (Zn), Dissolved	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.01	-	-	-	0.003	0.01	0.002	0.01	0.29
PESTICIDES:																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	-	-	-	0.00	0.00	0.00	0.10	-
																	0.00	0.00	0.00	0.05	0.086

NOTES:

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "0".

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "0" value

*The original analysis for Sample No. 5 yielded a concentration of 660 mg/L. A second analysis conducted beyond the sample holding time yielded a concentration of 280 mg/L. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-40
Martin Luther King Drive Bridge (B8)
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	200	1200	1100	4100	8600	5700	4100	800	900	500	500	360	380	160	300	300	386	8600	100	100	235
Oil and Grease	<2.0	<2.0	2.2	<2.0	<2.0	<2.0	<2.0	<2.0	2.6	<2.0	<2.0	<2.0	<2.0				0.4	2.4	0.3	2.0	-
Ammonia (NH_3, as N	<0.01	0.01	<0.01	0.18	0.15	0.16	0.15	0.12	0.09	0.14	0.13	0.23	0.08	0.08	0.06	0.10	0.07	0.18	0.01	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	7.9	8.1	8.6	8.2	5.0	5.5	4.6	6.6	6.2	5.0	6.1	6.2	5.1	4.2	3.6	4.9	5.8	8.6	3.6	2.0	-
Chemical Oxygen Demand (COD)	50	40	50	50	50	70	50	50	50	60	40	50	40				48	70	40	20	
Chloride*	120	120	120	120	130	130	120	110	64	94	120	110	44				102	130	44	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.022
Fluoride, (F)	2.05	2.05	2.09	2.03	2.12	2.03	2.05	2.07	1.99	2.09	2.12	2.12	2.18				2.06	2.18	1.99	0.25	12
Hardness, Total as $CaCO_3$	340	320	310	320	330	340	380	360	350	340	350	320	330				335	380	310	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.2	2.4	2.1	2.0	1.2	1.4	1.2	0.70	0.43	1.6	1.9	1.7	2.0	0.83	1.3	1.6	1.5	2.4	0.70	0.50	-
Phosphorus, Total	0.12	0.12	0.16	0.11	0.15	0.17	0.16	<0.10	0.13	0.13	0.11	0.12	0.10				0.13	0.17	0.09	0.10	-
Solids, Total Dissolved (TDS)	570	600	590	550	590	600	630	610	690	580	590	570	550				587	630	550	10	-
Solids, Total Suspended (TSS)	33	30	25	29	20	24	19	17	15	19	21	19	16				21	33	15	1.0	-
Solids, Total Volatile Suspended (TVSS)	12	10	11	7.0	7.0	9.0	7.6	6.2	3.0	6.4	7.2	5.6	5.6				7.4	12	5.0	1.0	-
Sulfate (SO_4)	160	120	120	86	94	71	96	97	120	83	73	120	81				99	160	71	10	-
pH (pH units)	7.76	7.60	7.56	7.29	7.57	7.75	7.69	7.88	7.18	7.61	7.39	7.66	8.29	7.91	7.67	7.72	7.69	8.29	7.29	0.01	6<=pH<=9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.3a
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	1.12	1.09	0.96	0.77	0.87	0.90	0.84	0.82	0.75	0.90	0.86	0.91	0.77				0.88	1.12	0.75	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0002	0.0002	0.00002	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.01	0.01	0.04	0.03	0.03	0.04	0.03	0.03	0.02	0.02	0.02	0.02	0.02				0.02	0.04	0.01	0.01	0.30
Zinc (Zn), Dissolved	0.02	<0.01	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.02	0.04	0.01	0.01	0.30
PESTICIDES																	0.002	0.03	0.002	0.01	0.29
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4' DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
NOTES																	0.00	0.00	0.00	0.05	0.086

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V"

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero

[3]The minimum value may be equal to a calculated "V" value

[4]The original analysis for Sample No. 8 yielded a concentration of 210 mg/L. A second analysis conducted beyond the sample holding time yielded a concentration of 110 mg/L. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-41
Clay Street Bridge (B9)
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,3]	Maximum Value[2]	Minimum Value[2,4]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU/100mL)	300	300	300	1100	3000	1200	600	900	200	300	100	200	320	300	700	400	431	3000	100	100	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.2	2.3				0.0	2.1	0.0	2.0	-
Ammonia (NH_3), as N	0.09	0.11	0.07	0.12	0.17	0.13	0.13	0.15	0.10	0.10	0.12	0.15	0.19	0.18	0.15	0.15	0.13	0.19	0.07	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	6.3	7.8	4.7	5.4	5.0	4.1	4.0	7.2	<1	3.9	3.6	4.2	4.0	4.3	2.7	3.6	4.1	7.8	2.7	2.0	-
Chemical Oxygen Demand (COD)	60	40	40	30	50	40	50	60	30	50	40	50	60				47	60	30	20	-
Chloride	86	87	84	86	83	80	60	98	32	61	66	60	61				77	98	60	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	0.008	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.0005	0.008	0.0004	0.005	0.022
Fluoride, (F)	1.98	0.72	1.94	1.96	1.98	1.90	1.90	1.82	1.87	1.90	1.95	1.90	1.99				1.78	1.99	0.72	0.25	12
Hardness, Total as $CaCO_3$	300	290	290	280	300	290	290	250	280	290	260	240	240				276	300	240	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.1	2.0	2.1	1.8	1.4	1.8	1.2	0.60	0.72	1.3	0.92	2.2	2.0	2.2	0.68	1.5	1.4	2.2	0.60	0.50	-
Phosphorus, Total	0.17	<0.10	<0.10	0.11	<0.10	0.16	<0.10	<0.10	0.13	<0.10	<0.10	<0.10	0.13				0.06	0.17	0.04	0.10	-
Solids, Total Dissolved (TDS)	440	460	420	440	440	440	470	450	430	430	440	460	420				442	470	420	10	-
Solids, Total Suspended (TSS)	44	42	42	37	32	32	32	31	29	37	37	35	44				36	44	29	1.0	-
Solids, Total Volatile Suspended (TVSS)	8.6	8.6	8.6	8.8	6.4	6.4	7.4	6.6	5.6	6.8	8.0	5.3	7.6				7.2	8.8	5.3	1.0	-
Sulfate (SO_4)*	99	80	93	100	56	50	96	76	130	49	56	87	99				79	130	49	10	-
pH (pH units)	7.92	8.10	8.02	7.85	7.87	7.87	7.50	7.95	7.91	7.91	7.96	7.82	7.91	7.95	7.91	7.83	7.89	8.10	7.50	0.01	6< pH<9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	1.93	1.78	1.83	1.66	1.45	1.68	1.41	1.37	1.34	1.43	1.58	1.57	1.94				1.60	1.94	1.37	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	0.05	<0.05	0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.01	0.05	0.01	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	0.0007	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.00005	0.0007	0.00003	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.02	0.02	0.01	0.01	0.03	0.01				0.02	0.03	0.02	0.01	0.30
Zinc (Zn), Dissolved	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.01	0.01	0.00	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES:

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1] Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".

[2] If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3] The minimum value may be equal to a calculated "V" value.

[4] The original analysis for Sample No. 8 yielded a concentration of 210 mg/L. A second analysis conducted beyond the sample holding time yielded a concentration of 76 mg/L. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in this geometric mean calculation.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-42
Ripley Street Bridge (B10)
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,3]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU / 100mL)	400	500	400	700	1700	1800	700	900	300	300	100	200	220	200	200	300	392	1800	100	100	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	2.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0				0.2	2.1	0.2	2.0	-
Ammonia (NH_3), as N	0.07	0.08	0.07	0.10	0.17	0.15	0.17	0.12	0.12	0.12	0.11	0.13	0.20	0.19	0.16	0.15	0.13	0.20	0.07	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	6.6	5.3	6.0	7.2	4.2	4.0	6.0	5.8	5.1	4.7	4.0	4.7	4.0	5.9	4.1	4.4	5.1	7.2	4.0	2.0	-
Chemical Oxygen Demand (COD)	40	40	30	50	50	50	50	50	50	40	40	60	60				45	60	30	20	-
Chloride	87	87	87	100	87	87	74	75	120	66	82	80	76				84	120	66	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.022
Fluoride, (F)	0.67	0.68	0.68	0.66	0.68	0.66	0.67	0.61	0.56	0.55	0.57	0.58	0.58				0.62	0.68	0.55	0.25	12
Hardness, Total as $CaCO_3$	270	280	290	290	290	290	310	280	300	270	260	300	270				284	310	260	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	1.6	2.4	1.7	2.1	1.1	1.9	1.4	0.92	0.75	0.67	1.8	1.5	2.3	2.1	1.9	2.0	1.5	2.4	0.67	0.50	-
Phosphorus, Total	0.11	0.12	0.12	0.17	0.16	<0.10	0.15	0.13	0.14	0.10	0.12	0.11	0.15				0.13	0.17	0.09	0.10	-
Solids, Total Dissolved (TDS)	460	440	450	470	450	480	470	470	470	460	460	450	470				461	480	440	10	-
Solids, Total Suspended (TSS)	49	40	38	38	36	32	41	32	31	33	35	38	40				37	49	31	1.0	-
Solids, Total Volatile Suspended (TVSS)	9.2	8.4	5.8	7.8	5.8	5.4	12	6.6	7.2	7.2	4.2	7.4	6.6				7.2	12	4.2	1.0	-
Sulfate (SO_4)	78	73	69	86	40	56	73	150	140	59	52	87	120				75	150	40	10	-
pH (pH units)	7.84	7.89	7.84	8.16	7.87	7.69	7.76	7.89	7.66	7.72	7.33	7.85	7.91	7.83	7.54	7.78	7.79	8.16	7.33	0.01	6< pH<=9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.34
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.36
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	2.11	1.70	1.77	1.70	1.58	1.45	1.68	1.37	1.31	1.50	1.62	1.67	1.83				1.63	2.11	1.31	0.05	-
Iron (Fe), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.07	0.06	0.02	0.02	0.02	0.02	0.03	0.02	0.01	0.02	0.04	0.02	0.03				0.03	0.07	0.01	0.01	0.30
Zinc (Zn), Dissolved	0.03	0.02	<0.01	<0.01	<0.01	0.01	0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.02				0.01	0.03	0.005	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.086

NOTES

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (g)(8)(C) in which samples with concentrations below the detection limit are assigned the value "V".

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "V" value.

GARY SANITARY DISTRICT
Gary, Indiana

Little Calumet River
Stream Reach Characterization and Evaluation Report

TABLE 3-43
Deep River
Second Wet Weather Sample Event
April 27 - 30, 2002

FROM START OF STORM, HOURS	-4	0	4	8	12	16	20	24	28	32	36	44	52	60	68	72	Geometric Mean[1,2]	Maximum Value[2]	Minimum Value[2,3]	Detection Limit	Acute Water Quality Limit
SAMPLE NO. / PARAMETER	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16					
CONVENTIONALS																					
E-coli (CFU / 100mL)	100	300	100	1100	200	200	300	900	100	200	200	180	1200	300	500	500	289	1200	100	100	235
Oil and Grease	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0				0.0	0.0	0.0	2.0	-
Ammonia (NH_3), as N	0.10	0.13	0.14	0.34	0.15	0.15	0.17	0.07	0.09	0.12	0.13	0.13	0.21	0.19	0.17	0.15	0.14	0.21	0.07	0.01	3.7
Carbonaceous Biochemical Oxygen Demand	5.2	3.3	6.1	4.8	5.1	2.8	3.8	6.0	3.8	4.6	4.3	5.0	2.7	4.4	4.1	4.1	4.4	6.1	2.7	2.0	-
Chemical Oxygen Demand (COD)	40	46	60	60	50	50	50	60	50	50	50	50	50				51	60	40	20	-
Chloride[4]	69	70	77	91	70	75	140	96	83	43	55	80	74				76	140	43	10	860
Cyanide, Weak Acid Dissociable (WAD)	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.022
Fluoride, (F)	0.18	0.19	0.17	0.17	0.18	0.17	0.17	0.16	0.16	0.17	0.18	0.15	0.18				0.17	0.19	0.16	0.25	22
Hardness, Total as $CaCO_3$	270	260	280	260	290	270	260	290	240	270	270	280	250				265	290	240	2.0	-
Nitrogen, Total Kjeldahl as N (TKN)	2.2	2.2	1.8	2.1	1.0	0.72	1.6	0.53	1.6	1.5	1.7	2.6	2.2	1.9	2.1	2.0	1.5	2.6	0.53	0.50	-
Phosphorus, Total	0.11	0.11	0.13	0.13	0.12	0.16	<0.10	0.13	0.13	<0.10	<0.10	0.17	0.15				0.13	0.16	0.08	0.10	-
Solids, Total Dissolved (TDS)	420	410	400	420	410	410	400	410	390	400	440	420	440				419	440	390	10	-
Solids, Total Suspended (TSS)	53	49	47	44	50	34	29	39	32	39	45	40	35				39	52	29	1.0	-
Solids, Total Volatile Suspended (TVSS)	8.5	9.2	9.6	7.6	7.0	6.8	5.4	5.2	6.6	7.2	7.6	6.8	6.6				7.1	9.2	5.2	1.0	-
Sulfate (SO_4)	60	57	60	60	57	55	53	70	52	54	55	79	80				58	80	37	10	-
pH (pH units)	7.91	7.92	7.82	7.84	7.92	7.79	7.87	7.90	7.77	7.84	7.86	7.53	7.62	7.69	7.89	7.75	7.85	7.96	7.53	0.01	6<=pH<= 9
METALS																					
Arsenic (As), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	-
Arsenic (As), Dissolved	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02				0.00	0.00	0.00	0.02	0.34
Cadmium (Cd), Total Recoverable	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0150
Cadmium (Cd), Dissolved	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005				0.000	0.000	0.000	0.005	0.0142
Chromium (Cr), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	4.3
Chromium (Cr), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.56
Copper (Cu), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.038
Copper (Cu), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	0.037
Iron (Fe), Total Recoverable	2.35	2.11	2.10	2.08	2.17	1.97	1.45	1.47	1.55	1.76	1.92	1.79	1.70				1.86	2.35	1.45	0.05	-
Iron (Fe), Dissolved	0.06	0.10	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.07	0.10	0.01	0.05	-
Lead (Pb), Total Recoverable	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Lead (Pb), Dissolved	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05				0.00	0.00	0.00	0.05	0.47
Mercury (Hg), Total Recoverable	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0017
Mercury (Hg), Dissolved	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002				0.0000	0.0000	0.0000	0.0002	0.0014
Nickel (Ni), Total Recoverable	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Nickel (Ni), Dissolved	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.00	0.00	0.00	0.01	1.15
Zinc (Zn), Total Recoverable	0.02	0.02	0.06	0.02	0.02	0.02	0.01	0.02	0.02	0.01	0.02	0.02	<0.01				0.02	0.06	0.01	0.01	0.36
Zinc (Zn), Dissolved	0.03	0.03	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01				0.004	0.03	0.002	0.01	0.29
PESTICIDES																					
Heptachlor	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Aldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
alpha-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
beta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
delta-BHC	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
gamma-BHC (Lindane)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Chlordane	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDD	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	2.50	-
Heptachlor Epoxide	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDE	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
4,4'-DDT	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Dieldrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan I	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	0.24
Endosulfan II	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endosulfan Sulfate	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.05	-
Endrin	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND				0.00	0.00	0.00	0.10	-
NOTES:																	0.00	0.00	0.00	0.05	0.086

All conventional parameters and metals are listed in milligrams per liter unless otherwise noted. All pesticides are listed in micrograms per liter.

[1]Geometric mean calculated using method identified in 327 IAC 5-2-11.4 (a)(8)(C); in which samples with concentrations below the detection limit are assigned the value "0"

[2]If all sample concentrations for a parameter are below the detection limit, then the geometric mean, maximum value and minimum value are equal to zero.

[3]The minimum value may be equal to a calculated "0" value.

[4]The original analysis for Sample No. 7 yielded a concentration of 540 mg/L. A second analysis conducted beyond the sample holding time yielded a concentration of 240 mg/L. Based on a comparison of the original sample analyses to the resampled analyte, and the fact that the resampled analyte result corresponds with previous analyses, the resampled analyte result was used in the geometric mean calculation.