TABLES

Table 2-1a. Summary of Risk Drivers from the PFD
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Aquatic Receptors				Terrestrial Receptors			
	Mink HQ[1]	COPC?	Great Blue Heron HQ[1]	COPC?	Short-Tailed Shrew HQ[1]	COPC?	Red Tailed Hawk HQ[1]	COPC?
Aluminum	15	COPC	0.24	no	3,500	COPC	35	COPC
Antimony	0.21	no	29	COPC	NAP	NC	NAP	NC
Arsenic	1.4	COPC	0.018	no	16	COPC	0.054	no
Barium	0.049	no	0.010	no	8.2	COPC	0.14	no
Cadmium	3.5	COPC	2.0	COPC	NAP	NC	NAP	NC
Chromium	0.12	no	0.41	no	170	COPC	190	COPC
Copper	0.096	no	0.029	no	14	COPC	21	COPC
Cyanide	0.00023	no	0.0079	no	0.048	no	1.6	COPC
Lead	0.043	no	0.11	no	3.5	COPC	5.6	COPC
Nickel	0.0067	no	0.0034	no	3.0	COPC	3.7	COPC
Selenium	10	COPC	3.6	COPC	2.7	COPC	2.9	COPC
Thallium	0.64	no	87	COPC	NAP	NC	NAP	NC
Vanadium	0.36	no	0.0078	no	40	COPC	0.72	no
Zinc	0.18	no	1.7	COPC	21	COPC	240	COPC
Acenaphthene	0.024	no	0.015	no	1.8	COPC	0.71	no
Anthracene	0.98	no	0.46	no	11	COPC	4.0	COPC
Benzo(a)anthracene	2.7	COPC	1.6	COPC	1.1	COPC	0.53	no
Benzo(b)fluoranthene	0.40	no	1.5	COPC	1.1	COPC	3.0	COPC
Benzo(k)fluoranthene	0.090	no	0.36	no	0.37	no	1.1	COPC
Benzo[a]pyrene	3.4	COPC	1.6	COPC	0.93	no	0.37	no
Chrysene	2.5	COPC	1.2	COPC	1.2	COPC	0.46	no
Dibenzo(a,h)anthracene	0.038	no	0.061	no	1.7	COPC	1.8	COPC
Fluoranthene	6.4	COPC	3.0	COPC	3.4	COPC	1.4	COPC
Fluorene	0.060	no	0.031	no	2.9	COPC	1.2	COPC
Phenanthrene	51	COPC	24	COPC	30	COPC	12	COPC
Pyrene	1.3	COPC	0.67	no	2.9	COPC	1.2	COPC
Aroclor 1016	9.2	COPC	10	COPC	NAP	NC	NAP	NC
Aroclor 1248	3,600	COPC	150	COPC	480,000	COPC	1,600	COPC
Aroclor 1254	45	COPC	39	COPC	620	COPC	7.6	COPC
Aroclor 1260	17	COPC	15	COPC	NAP	NC	NAP	NC
Total PCBs	NAP	NC	NAP	NC	10,000	COPC	120	COPC
Bis(2-ethylhexyl)phthalate	0.24	no	1.8	COPC	0.51	no	3.5	COPC
Butyl benzyl phthalate	NAP	NC	NAP	NC	1.1	COPC	3.8	COPC
Di-n-octyl phthalate	0.0000047	no	0.0041	no	0.43	no	850	COPC
Total TCDD TEQ	1.3	COPC	0.089	no	NAP	NC	NAP	NC
Trichloroethene	0.065	no	7.3	COPC	0.74	no	NAP	NC

Table 2-1b. Summary of Risk Drivers from the PFD for Additional Receptors
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Additional Terrestrial Receptors			
	American Robin HQ[1]	COPC?	Cottontail Rabbit HQ[1]	COPC?
Aluminum	180	COPC	39	COPC
Antimony	170	COPC	0.53	no
Arsenic	1.3	COPC	2.1	COPC
Barium	12	COPC	0.58	no
Beryllium	22	COPC	0.0055	no
Cadmium	25	COPC	0.10	no
Chromium	3,000	COPC	2.3	COPC
Copper	24	COPC	2.8	COPC
Cyanide	320	COPC	0.0031	no
Iron	16,000	COPC	13	COPC
Lead	140	COPC	0.13	no
Mercury	3.4	COPC	0.0056	no
Nickel	8.7	COPC	0.10	no
Selenium	5.9	COPC	0.8	no
Vanadium	3.7	COPC	0.55	no
Zinc	1,200	COPC	1.3	COPC
Aroclor 1248	1,200,000	COPC	790	COPC
Aroclor 1254	550	COPC	1.0	COPC
2-Methylnaphthalene	5.4	COPC	0.36	no
Acenaphthene	130	COPC	0.010	no
Benzo(a)anthracene	1.9	COPC	0.22	no
Benzo(a)pyrene	1.9	COPC	4.5	COPC
Benzo(b)fluoranthene	1.9	COPC	0.17	no
Benzo(ghi)perylene	1.7	COPC	4.7	COPC
Chrysene	2.1	COPC	0.23	no
Dibenz(a,h)anthracene	3.1	COPC	0.25	no
Dibenzofuran	8.9	COPC	11	COPC
Di-n-octyl phthalate	47	COPC	0.00052	no
Fluoranthene	6.0	COPC	0.52	no
Indeno(1,2,3-cd)pyrene	1.1	COPC	0.081	no
Pyrene	5.1	COPC	0.8	no
Trichloroethene	61	COPC	0.33	no

Notes:

[1] HQ calculated as total daily intake divided by selected toxicity value (TRV).

COPC = Constituent of potential concern (based on a hazard quotient greater than 1).
HQ = Hazard Quotient.
NC = Not calculated due to insufficient information (i.e., uptake factor or toxicity value).

Table 3-1. 1985 EDI Fish Analytical Data
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Species	Aroclor 1248 (µg/g)	Aroclor 1254 (µg/g)	Total PCB (µg/g)	Dry Weight (%)	Lipid Weight (%)	Total Weight (g)	Non-carcinogenic Final Fish Flesh Criteria (Newell et al. 1987) (µg/g)
Bluegill	≤0.2	---	≤0.2	25.0	0.25	60	0.11
Bluegill	≤0.3	---	≤0.3	27.4	0.26	62	
Bluegill	≤0.2	---	≤0.2	26.0	0.85	64	
Bluegill	≤0.4	---	≤0.4	26.5	1.1	86	
Bluegill	≤0.2	---	≤0.2	25.1	0.40	59	
Pumpkinseed	≤0.3	---	≤0.3	26.0	0.10	65	
Shiners	<3	---	<3	25.6	1.6	11	
Brown Bullhead	≤0.2	---	≤0.2	19.4	0.07	134	
Carp	4.1	2.7	6.8	31.2	7.3	2680	
Carp	≤0.3	---	<0.3	20.9	0.17	2885	
Carp	2.2	1.2	3.4	30.9	4.8	1884	
Carp	0.55	0.53	1.1	21.7	0.24	3481	

Notes:

EDI Engineering & Science. 1985. *Oil and PCB Sampling and Analyses of Portions of Ley Creek, Onondaga County, New York.*

Newell, A.J., D.W. Johnson, L.K. Allen. 1987. *Niagara River Biota Contamination Project: Fish Flesh Criteria for Piscivorous Wildlife*. New York State Department of Environmental Conservation. Division of Fish and Wildlife.

Table 3-2. Fish Tissue Analytical Data
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Fish Sample	Number Analyzed	Length (mm)	Mass (g)	Percent Lipid	Percent Moisture	Wet Weight Concentration (mg/kg)						
						Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260
UPSTREAM												
Golden Shiner (Whole Fish)	3	65	7	0.5%	NA	0.1 U	0.2 U	0.1 U	0.1 U	**0.86 JN**	0.1 U	0.1 U
Longnose Dace (Whole Fish)	20	17 - 61	10	0.1%	NA	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
White Sucker Juv. (Whole Fish)	26	32 - 47	19	0.1%	NA	0.1 U	0.2 U	0.1 U	0.1 U	0.1 U	0.1 U	0.1 U
Pumpkinseed #1 (Edible Portion)	1	95	11	0.1%	NA	0.5 U	1.0 U	0.5 U	0.5 U	**2.4**	0.5 U	0.5 U
Pumpkinseed #2 (Edible Portion)	1	77	8.5	0.1%	NA	0.1 U	0.2 U	0.1 U	0.1 U	**1.7**	0.1 U	0.1 U
Pumpkinseed #3 (Edible Portion)	1	84	9.5	0.1%	NA	0.1 U	0.2 U	0.1 U	0.1 U	**0.11 J**	0.1 U	0.1 U
OUTFALL												
Golden Shiner #1 (Whole Fish)	1	186	83	0.1%	79.7%	0.1 U	0.2 U	0.1 U	0.1 U	**0.19**	0.1 U	0.1 U
Golden Shiner #2 (Whole Fish)	1	96	12	0.5%	NA	0.1 U	0.2 U	0.1 U	0.1 U	**0.38**	0.1 U	0.1 U
Dace (Whole Fish)	25	30 - 61	25	0.2%	NA	0.1 U	0.2 U	0.1 U	0.1 U	**0.24**	0.1 U	0.1 U
White Sucker #3 (Whole Fish)	1	120	17	0.2%	NA	0.1 U	0.2 U	0.1 U	0.1 U	**0.82**	0.1 U	**0.23 JN**
DOWNSTREAM												
Dace (Whole Fish)	14	32 - 80	22	0.5%	NA	0.1 U	0.2 U	0.1 U	0.1 U	**0.87**	0.1 U	**0.33 JN**
White Sucker #6 (Whole Fish)	1	120	19	0.1% J	NA	0.1 U	0.2 U	0.1 U	0.1 U	**0.46 J**	0.1 U	0.1 U
Carp #1 (Whole Fish)	1	550	2,727	2.3%	76.0%	0.1 U	0.2 U	0.1 U	0.1 U	**0.47**	0.1 U	**0.7 J**
Carp #4 (Whole Fish)	1	508	2,386	1.2%	77.8%	0.1 U	0.2 U	0.1 U	0.1 U	**1.1**	0.1 U	**0.35**
Carp #2 (Fillet)	1	545	2,727	1.1%	73.3%	0.1 U	0.2 U	0.1 U	0.1 U	**0.11**	0.1 U	0.1 U
Carp #3 (Fillet)	1	660	4,091	3.0%	72.6%	0.1 U	0.2 U	0.1 U	0.1 U	**0.2**	0.1 U	0.1 U
Pumpkinseed #1 (Edible Portion)	1	120	24	0.1%	NA	0.1 U	0.2 U	0.1 U	0.1 U	**0.32**	0.1 U	0.1 U

Notes appear on page 2.

Table 3-2. Fish Tissue Analytical Data
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Notes:

(Source: O'Brien & Gere 1993)

NA	Not available; insufficient sample volume for analysis.
U	Not detected at the indicated quantitation limit.
J	Detected results are estimated.
UJ	Detection limits are estimated.
JN	Detected results are presumptively present at an approximated quantity.

Table 3-3. Plant Screening Benchmark Concentrations for the Phytotoxicity of COPCs in Soil, Soil Solution, and Sediment
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	RME Concentration		Plant Screening Benchmarks		
	Surface Soil (mg/kg)	Sediment (mg/kg)	Soil (mg/kg)[1]	Soil Solution (mg/L)[1]	Sediment (mg/kg)[2]
Aluminum	13,000	7,700	50	0.30	NA
Antimony	1.4	1.7	5.0	NA	NA
Arsenic	18	5.8	10	0.0010	NA
Barium	160	87	NA	500	NA
Beryllium	0.94	0.42	10	0.50	NA
Cadmium	1.0	1.6	4.0	0.10	5.1
Calcium	77,000	64,000	NA	NA	NA
Chromium	2,000	51	1.0	0.050	0.0050
Cobalt	11	8.2	20	0.060	NA
Copper	890	61	100	0.060	NA
Cyanide	11	1.8	NA	NA	NA
Iron	26,000	19,000	NA	10	NA
Lead	65	81	50	0.020	NA
Magnesium	18,000	18,000	NA	NA	NA
Manganese	480	430	500	4.0	NA
Mercury	0.095	0.17	0.30	0.0050	0.15
Nickel	610	23	30	0.50	20.9
Potassium	2,400	2,200	NA	NA	NA
Selenium	1.9	0.69	1.0	0.70	NA
Silver	ND	1.4	2.0	0.10	1.0
Sodium	410	370	NA	NA	NA
Thallium	0.40	0.60	1.0	0.050	NA
Vanadium	28	18	2.0	0.20	NA
Zinc	1,300	200	50	0.40	150
Aroclor 1016	ND	5.8	NA	NA	NA
Aroclor 1242	ND	36	NA	NA	NA
Aroclor 1248	3,900	25	NA	NA	NA
Aroclor 1254	8.0	2.9	NA	NA	NA
Aroclor 1260	ND	1.1	NA	NA	NA
1,2-Dichlorobenzene	0	ND	NA	NA	0.035
2,4-Dimethylphenol	ND	0.17	NA	NA	0.029
2-Methylnaphthalene	1.7	0.82	NA	NA	0.070
2-Methylphenol	ND	0.073	NA	50	0.063
4-Methylphenol	ND	0.29	NA	NA	0.67
Acenaphthene	40	2.1	NA	NA	0.044
Acenaphthylene	0.073	0.28	20	0.10	0.016
Anthracene	230	2.7	NA	NA	NA
Benzo(a)anthracene	24	13	NA	NA	0.261
Benzo(a)pyrene	21	13	NA	NA	0.43
Benzo(b)fluoranthene	24	13	NA	NA	3.2
Benzo(ghi)perylene	22	8.2	NA	NA	0.67
Benzo(k)fluoranthene	8.4	5.1	NA	NA	NA
bis(2-Ethylhexyl)phthalate	2.3	0.83	NA	NA	NA
Butyl benzyl phthalate	36	0.61	NA	NA	NA
Carbazole	120	2.3	NA	NA	NA
Chrysene	26	14	NA	NA	0.384
Dibenz(a,h)anthracene	39	3.7	NA	NA	0.0634
Dibenzofuran	21	1.7	NA	NA	0.54
Di-n-butyl phthalate	0.35	ND	200	NA	NA
Di-n-octyl phthalate	56	ND	NA	NA	NA
Fluoranthene	75	23	NA	NA	0.60

Table 3-3. Plant Screening Benchmark Concentrations for the Phytotoxicity of COPCs in Soil, Soil Solution, and Sediment
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	RME Concentration		Plant Screening Benchmarks		
	Surface Soil (mg/kg)	Sediment (mg/kg)	Soil (mg/kg)[1]	Soil Solution (mg/L)[1]	Sediment (mg/kg)[2]
Fluorene	65	2.0	NA	NA	0.019
Hexachlorobenzene	0.10	ND	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	7.2	NA	NA	0.60
Naphthalene	2.1	2.3	NA	10	0.16
Phenanthrene	670	69	NA	NA	0.24
Phenol	0.85	0.099	70	10	NA
Pyrene	65	38	NA	NA	0.665
2-Butanone	ND	0.006	NA	NA	NA
Acetone	ND	0.065	NA	NA	NA
Carbon disulfide	0.038	0.0090	NA	NA	NA
Chloroform	0.019	ND	NA	NA	NA
Chloromethane	ND	ND	NA	NA	NA
Ethylbenzene	0.060	0.0020	NA	NA	0.010
Tetrachloroethene	0.012	0.0020	NA	10	0.057
Toluene	0.21	ND	200	10	NA
Trichloroethene	46	0.0030	NA	NA	NA
Xylenes (total)	0.60	0.0060	NA	100	0.040

1. Source is Efroymson et al. (1997a). Toxicological benchmarks for screening COPCs for effects on terrestrial plants.
2. Source is USEPA (1995c) Region 3 Biological Technical Assistance Group (BTAG) Screening levels for flora.

mg/kg = Milligrams per kilogram.
mg/L = Milligrams per liter.
NA = Not available.
ND = Not detected.

Table 3-4. Derivation of Surface Soil Exposure Point Concentrations
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Log-Normal	Critical Value	Normal	Log-Normal	Dataset Distribution D'agostino	Dataset Distribution Shapiro-Wilke	DataSet Distribution
Aluminum	mg/kg	7	7	100%	7	0.91	0.90	0.84	NA, n<50	NA, n<50	NA	Normal	Normal
Antimony	mg/kg	7	2	29%	7	ND	ND	ND	ND	ND	ND	ND	ND
Arsenic	mg/kg	47	47	100%	47	0.33	0.78	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Barium	mg/kg	7	7	100%	7	0.72	0.87	0.84	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Beryllium	mg/kg	7	7	100%	7	0.87	0.89	0.84	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Cadmium	mg/kg	12	7	58%	12	0.60	0.80	0.88	NA, n<50	NA, n<50	NA	Unknown	Unknown
Calcium	mg/kg	7	7	100%	7	0.88	0.98	0.84	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Chromium	mg/kg	45	45	100%	45	0.17	0.68	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Cobalt	mg/kg	7	7	100%	7	0.87	0.88	0.84	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Copper	mg/kg	52	52	100%	52	NA, n>50	NA, n>50	NA, n>50	-12.76	-49.11	Unknown	NA	Unknown
Cyanide	mg/kg	101	30	30%	101	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/kg	7	7	100%	7	0.92	0.95	0.84	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Lead	mg/kg	42	42	100%	42	0.32	0.93	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Magnesium	mg/kg	7	7	100%	7	0.89	0.94	0.84	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Manganese	mg/kg	7	7	100%	7	0.94	0.91	0.84	NA, n<50	NA, n<50	NA	Normal	Normal
Mercury	mg/kg	13	8	62%	13	0.85	0.91	0.89	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Nickel	mg/kg	50	50	100%	50	0.25	0.74	0.96	NA, n<50	NA, n<50	NA	Unknown	Unknown
Potassium	mg/kg	7	7	100%	7	0.90	0.88	0.84	NA, n<50	NA, n<50	NA	Normal	Normal
Selenium	mg/kg	7	7	100%	7	0.87	0.97	0.84	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Sodium	mg/kg	7	7	100%	7	0.73	0.91	0.84	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Thallium	mg/kg	7	1	14%	7	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	mg/kg	7	7	100%	7	0.80	0.80	0.84	NA, n<50	NA, n<50	NA	Unknown	Unknown
Zinc	mg/kg	43	43	100%	43	0.35	0.87	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Oil and Grease	mg/kg	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Percent Solids (%)	%	69	69	100%	69	NA, n>50	NA, n>50	NA, n>50	-17.10	-13.61	Unknown	NA	Unknown
Total PCB	0	92	92	100%	92	NA, n>50	NA, n>50	NA, n>50	-1.56	-65.19	Log-normal	NA	Log-normal
1,2-Dichlorobenzene	mg/kg	41	1	2%	41	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	mg/kg	39	15	38%	39	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	mg/kg	40	8	20%	40	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthylene	mg/kg	40	1	3%	40	ND	ND	ND	ND	ND	ND	ND	ND
Anthracene	mg/kg	41	12	29%	41	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-4. Derivation of Surface Soil Exposure Point Concentrations
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Log-Normal	Critical Value	Normal	Log-Normal	Dataset Distribution D'agostino	Dataset Distribution Shapiro-Wilke	DataSet Distribution
Benzo(a)anthracene	mg/kg	37	27	73%	37	0.19	0.78	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Benzo(b)fluoranthene	mg/kg	39	29	74%	39	0.19	0.89	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Benzo(ghi)perylene	mg/kg	37	16	43%	37	0.18	0.74	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Benzo(k)fluoranthene	mg/kg	41	22	54%	41	0.19	0.80	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Benzo[a]pyrene	mg/kg	37	23	62%	37	0.19	0.80	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Bis(2-ethylhexyl)phthalate	mg/kg	40	33	83%	40	0.55	0.92	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Butyl benzyl phthalate	mg/kg	39	9	23%	39	ND	ND	ND	ND	ND	ND	ND	ND
Carbazole	mg/kg	42	10	24%	42	ND	ND	ND	ND	ND	ND	ND	ND
Chrysene	mg/kg	42	32	76%	42	0.18	0.83	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Dibenzo(a,h)anthracene	mg/kg	35	5	14%	35	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzofuran	mg/kg	40	11	28%	40	ND	ND	ND	ND	ND	ND	ND	ND
Dimethyl phthalate	mg/kg	44	4	9%	44	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-butyl phthalate	mg/kg	41	5	12%	41	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	mg/kg	37	1	3%	37	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	mg/kg	40	33	83%	40	0.17	0.82	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Fluorene	mg/kg	38	9	24%	38	ND	ND	ND	ND	ND	ND	ND	ND
Hexachlorobenzene	mg/kg	43	1	2%	43	ND	ND	ND	ND	ND	ND	ND	ND
Indeno(1,2,3-cd)pyrene	mg/kg	37	17	46%	37	0.19	0.72	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Naphthalene	mg/kg	41	10	24%	41	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	mg/kg	41	28	68%	41	0.18	0.78	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
Phenol	mg/kg	41	3	7%	41	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	mg/kg	40	34	85%	40	0.18	0.90	0.95	NA, n<50	NA, n<50	NA	Unknown	Unknown
1,2-Dichloroethene	mg/kg	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Benzene	mg/kg	52	1	2%	52	ND	ND	ND	ND	ND	ND	ND	ND
Carbon disulfide	mg/kg	9	1	11%	9	ND	ND	ND	ND	ND	ND	ND	ND
Chloroform	mg/kg	43	1	2%	43	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	mg/kg	45	2	4%	45	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	mg/kg	51	3	6%	51	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	mg/kg	46	29	63%	46	0.48	0.96	0.95	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Tetrachloroethene	mg/kg	46	2	4%	46	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	mg/kg	52	7	13%	52	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-4. Derivation of Surface Soil Exposure Point Concentrations
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Log-Normal	Critical Value	Normal	Log-Normal	Dataset Distribution D'agostino	Dataset Distribution Shapiro-Wilke	DataSet Distribution
Xylene (total)	mg/kg	54	4	7%	54	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	mg/kg	43	9	21%	43	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	mg/kg	89	3	3%	89	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-4. Derivation of Surface Soil Exposure Point Concentrations
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL	
Aluminum	mg/kg	8,360	11,451	22,903	14,600	13,838	13,838	13,288	13,288
Antimony	mg/kg	0.38	0.36	0.73	1.4	ND	ND	ND	1.40
Arsenic	mg/kg	2.20	11.07	22.15	162.00	17.49	10.70	10.70	10.70
Barium	mg/kg	48.40	95.47	190.94	228.00	140.55	158.95	158.95	158.95
Beryllium	mg/kg	0.44	0.61	1.22	0.94	0.74	0.77	0.77	0.77
Cadmium	mg/kg	0.20	0.35	0.70	1.0	0.46	0.45	0.45	0.45
Calcium	mg/kg	8,090	32,656	65,311	76,600	50,582	89,493	89,493	76,600
Chromium	mg/kg	8.5	785.88	1,572	32,000	1,977	161.86	161.86	161.86
Cobalt	mg/kg	5.4	7.41	14.83	10.80	8.91	9.30	9.30	9.30
Copper	mg/kg	8.0	125.11	250.22	4,790	278.60	63.13	63.13	63.13
Cyanide	mg/kg	0.98	0.78	1.55	11.00	ND	ND	ND	11.00
Iron	mg/kg	14,300	20,443	40,886	31,200	24,761	25,984	25,984	25,984
Lead	mg/kg	4.30	43.01	86.02	717	71.63	49.17	49.17	49.17
Magnesium	mg/kg	5,780	11,430	22,860	19,200	15,304	18,117	18,117	18,117
Manganese	mg/kg	228	402.43	804.86	524	0.05	0.06	481.93	481.93
Mercury	mg/kg	0.025	0.03	0.07	0.10	513.98	137.15	0.06	0.06
Nickel	mg/kg	6.90	257.93	515.86	6,630	513.98	137.15	137.15	137.15
Potassium	mg/kg	1,460	2,071	4,143	2,530	2,388	2,499	2,388	2,388
Selenium	mg/kg	0.54	1.14	2.28	2.40	1.60	1.93	1.93	1.93
Sodium	mg/kg	97.5	221.07	442.14	568	338.63	413.49	413.49	413.49
Thallium	mg/kg	0.40	0.12	0.24	0.40	ND	ND	ND	0.40
Vanadium	mg/kg	19.1	24.19	48.37	28.10	27.20	27.88	27.88	27.88
Zinc	mg/kg	17.8	330.43	660.87	5,880	574.43	350.03	350.03	350.03
Oil and Grease	mg/kg	160	300.00	600	440	ND	ND	ND	440.00
Percent Solids (%)	%	54.8	85.98	171.96	94	87.45	87.72	87.72	87.72
Total PCB	0	0.014	86.12	172.24	4,206	177.21	120.59	120.59	120.59
1,2-Dichlorobenzene	mg/kg	0.059	0.72	1.44	0.06	ND	ND	ND	0.06
2-Methylnaphthalene	mg/kg	0.047	0.72	1.45	2.80	ND	ND	ND	2.80
Acenaphthene	mg/kg	0.046	1.46	2.91	40	ND	ND	ND	40.00
Acenaphthylene	mg/kg	0.073	0.73	1.46	0.073	ND	ND	ND	0.07
Anthracene	mg/kg	0.052	6.15	12.30	230	ND	ND	ND	230.00

Table 3-4. Derivation of Surface Soil Exposure Point Concentrations
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL	
Benzo(a)anthracene	mg/kg	0.043	10.60	21.2	350	26.53	5.00	5.00	5.00
Benzo(b)fluoranthene	mg/kg	0.039	10.66	21.31	360	26.18	8.11	8.11	8.11
Benzo(ghi)perylene	mg/kg	0.050	9.11	18.23	310	23.23	3.07	3.07	3.07
Benzo(k)fluoranthene	mg/kg	0.041	3.57	7.13	120	8.48	2.08	2.08	2.08
Benzo[a]pyrene	mg/kg	0.037	9.19	18.37	300	22.84	4.81	4.81	4.81
Bis(2-ethylhexyl)phthalate	mg/kg	0.042	0.97	1.94	6.1	1.46	1.65	1.65	1.65
Butyl benzyl phthalate	mg/kg	0.048	2.56	5.12	36	ND	ND	ND	36.00
Carbazole	mg/kg	0.050	3.33	6.67	120	ND	ND	ND	120.00
Chrysene	mg/kg	0.042	10.32	20.65	380	25.52	4.85	4.85	4.85
Dibenzo(a,h)anthracene	mg/kg	0.14	1.76	3.52	39	ND	ND	ND	39.00
Dibenzofuran	mg/kg	0.039	0.97	1.95	21	ND	ND	ND	21.00
Dimethyl phthalate	mg/kg	0.051	0.69	1.39	0.84	ND	ND	ND	0.84
Di-n-butyl phthalate	mg/kg	0.055	0.72	1.44	0.35	ND	ND	ND	0.35
Di-n-octyl phthalate	mg/kg	56	2.31	4.62	56.00	ND	ND	ND	56.00
Fluoranthene	mg/kg	0.040	31.74	63.48	1,200	82.23	10.86	10.86	10.86
Fluorene	mg/kg	0.051	2.16	4.33	65.00	ND	ND	ND	65.00
Hexachlorobenzene	mg/kg	0.10	0.69	1.39	0.10	ND	ND	ND	0.10
Indeno(1,2,3-cd)pyrene	mg/kg	0.067	5.97	11.95	190	14.62	2.66	2.66	2.66
Naphthalene	mg/kg	0.040	0.49	0.98	2.10	ND	ND	ND	2.10
Phenanthrene	mg/kg	0.040	18	36.01	670	45.48	6.69	6.69	6.69
Phenol	mg/kg	0.041	0.67	1.35	0.85	ND	ND	ND	0.85
Pyrene	mg/kg	0.041	27.47	54.95	1,000	69.52	17.20	17.20	17.20
1,2-Dichloroethene	mg/kg	0.039	0.047	0.093	0.054	ND	ND	ND	0.05
Benzene	mg/kg	0.0050	0.01	0.02	0.01	ND	ND	ND	0.01
Carbon disulfide	mg/kg	0.038	0.011	0.023	0.038	ND	ND	ND	0.038
Chloroform	mg/kg	0.019	0.0025	0.0051	0.019	ND	ND	ND	0.02
cis-1,2-Dichloroethene	mg/kg	0.0050	0.012	0.024	0.34	ND	ND	ND	0.34
Ethylbenzene	mg/kg	0.010	0.0045	0.0091	0.060	ND	ND	ND	0.06
Methylene chloride	mg/kg	0.0010	0.012	0.024	0.050	0.017	0.021	0.021	0.02
Tetrachloroethene	mg/kg	0.0020	0.011	0.022	0.012	ND	ND	ND	0.01
Toluene	mg/kg	0.0010	0.012	0.024	0.21	ND	ND	ND	0.21

Table 3-4. Derivation of Surface Soil Exposure Point Concentrations
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL	
Xylene (total)	mg/kg	0.010	0.015	0.03	0.60	ND	ND	ND	0.60
Trichloroethene	mg/kg	0.0040	1.1	2.2	46	ND	ND	ND	46.00
Xylene (total)	mg/kg	0.010	0.0093	0.019	0.60	ND	ND	ND	0.60

Notes:
mg/kg = Milligrams per kilogram.
NA = Not applicable.
ND = Not determined.
UCL = Upper confidence level.

Table 3-5a. Derivation of Exposure Point Concentrations for Sediment for Ley Creek
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Log-Normal	Critical Value	Normal	Log-Normal	Dataset Distribution D'agostino	Dataset Distribution Shapiro-Wilke	DataSet Distribution
Aluminum	mg/Kg	11	11	100%	11	0.90	0.93	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Antimony	mg/Kg	28	26	93%	28	0.59	0.97	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Arsenic	mg/Kg	28	28	100%	28	0.79	0.96	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Barium	mg/Kg	11	11	100%	11	0.93	0.96	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Beryllium	mg/Kg	11	11	100%	11	0.94	0.97	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Cadmium	mg/Kg	11	11	100%	11	0.82	0.93	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Calcium	mg/Kg	11	11	100%	11	0.85	0.97	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Chromium	mg/Kg	28	28	100%	28	0.66	0.88	0.94	NA, n<50	NA, n<50	NA	Unknown	Unknown
Cobalt	mg/Kg	11	11	100%	11	0.95	0.97	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Copper	mg/Kg	28	28	100%	28	0.89	0.97	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Cyanide	mg/Kg	25	1	4%	25	ND	ND	ND	ND	ND	ND	ND	ND
Iron	mg/Kg	11	11	100%	11	0.85	0.86	0.88	NA, n<50	NA, n<50	NA	Unknown	Unknown
Lead	mg/Kg	28	28	100%	28	0.89	0.96	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Magnesium	mg/Kg	11	11	100%	11	0.88	0.95	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Manganese	mg/Kg	11	11	100%	11	0.93	0.96	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Mercury	mg/Kg	28	9	32%	28	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	mg/Kg	28	28	100%	28	0.74	0.93	0.94	NA, n<50	NA, n<50	NA	Unknown	Unknown
Potassium	mg/Kg	11	11	100%	11	0.96	0.97	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Selenium	mg/Kg	28	17	61%	28	0.92	0.91	0.94	NA, n<50	NA, n<50	NA	Unknown	Unknown
Silver	mg/Kg	11	9	82%	11	0.85	0.90	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Sodium	mg/Kg	11	11	100%	11	0.91	0.96	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Thallium	mg/Kg	11	1	9%	11	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	mg/Kg	11	11	100%	11	0.92	0.96	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Zinc	mg/Kg	19	19	100%	19	0.89	0.97	0.92	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Aroclor 1016	mg/Kg	30	6	20%	30	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/Kg	30	6	20%	30	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/Kg	30	24	80%	30	0.61	0.93	0.94	NA, n<50	NA, n<50	NA	Unknown	Unknown
Aroclor 1254	mg/Kg	30	5	17%	30	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	mg/Kg	30	18	60%	30	0.66	0.98	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
1,4-Dichlorobenzene	mg/Kg	41	1	2%	41	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	mg/Kg	24	2	8%	24	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	mg/Kg	24	20	83%	24	0.58	0.90	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
2-Methylphenol	mg/Kg	24	1	4%	24	ND	ND	ND	ND	ND	ND	ND	ND
4-Methylphenol	mg/Kg	24	7	29%	24	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	mg/Kg	24	21	88%	24	0.53	0.92	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown

Table 3-5a. Derivation of Exposure Point Concentrations for Sediment for Ley Creek
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Log-Normal	Critical Value	Normal	Log-Normal	Dataset Distribution D'agostino	Dataset Distribution Shapiro-Wilke	DataSet Distribution
Acenaphthylene	mg/Kg	24	19	79%	24	0.52	0.83	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Anthracene	mg/Kg	24	23	96%	24	0.56	0.95	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Benzo(a)anthracene	mg/Kg	24	24	100%	24	0.68	0.92	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Benzo(b)fluoranthene	mg/Kg	24	23	96%	24	0.77	0.96	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Benzo(ghi)perylene	mg/Kg	24	23	96%	24	0.75	0.99	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Benzo(k)fluoranthene	mg/Kg	24	24	100%	24	0.70	0.93	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Benzo[a]pyrene	mg/Kg	24	24	100%	24	0.70	0.90	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
bis(2-Ethylhexyl)phthalate	mg/Kg	24	3	13%	24	ND	ND	ND	ND	ND	ND	ND	ND
Butyl benzyl phthalate	mg/Kg	24	2	8%	24	ND	ND	ND	ND	ND	ND	ND	ND
Carbazole	mg/Kg	24	22	92%	24	0.55	0.95	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Chrysene	mg/Kg	24	24	100%	24	0.70	0.91	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Dibenzo(a,h)anthracene	mg/Kg	24	14	58%	24	0.77	0.97	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Dibenzofuran	mg/Kg	24	20	83%	24	0.50	0.90	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Fluoranthene	mg/Kg	24	24	100%	24	0.66	0.94	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Fluorene	mg/Kg	24	22	92%	24	0.52	0.95	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Indeno(1,2,3-cd)pyrene	mg/Kg	24	23	96%	24	0.76	0.98	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Naphthalene	mg/Kg	24	19	79%	24	0.52	0.92	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Phenanthrene	mg/Kg	24	24	100%	24	0.60	0.97	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Phenol	mg/Kg	24	3	13%	24	ND	ND	ND	ND	ND	ND	ND	ND
Pyrene	mg/Kg	24	24	100%	24	0.74	0.92	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
2-Butanone	mg/Kg	8	2	25%	8	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	mg/Kg	8	5	63%	8	0.71	0.91	0.85	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Carbon disulfide	mg/Kg	8	3	38%	8	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	mg/Kg	25	2	8%	25	ND	ND	ND	ND	ND	ND	ND	ND
Tetrachloroethene	mg/Kg	25	1	4%	25	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	mg/Kg	25	2	8%	25	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	mg/Kg	25	2	8%	25	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-5a. Derivation of Exposure Point Concentrations for Sediment for Ley Creek Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL	
Aluminum	mg/Kg	4390	6481	12962	10300	7548	7736	7736	7736
Antimony	mg/Kg	0.17	0.60	1.21	1.7	0.82	0.80	0.80	0.80
Arsenic	mg/Kg	2.2	5.1	10.21	14.1	5.82	5.82	5.82	5.82
Barium	mg/Kg	38.2	55.25	110.49	86.7	63.40	64.91	64.91	64.91
Beryllium	mg/Kg	0.26	0.37	0.74	0.53	0.41	0.42	0.42	0.42
Cadmium	mg/Kg	0.25	0.84	1.67	2.5	1.21	1.61	1.61	1.61
Calcium	mg/Kg	11200	43927	87855	105000	55354	64228	64228	64228
Chromium	mg/Kg	10.9	38.88	77.76	164	52.00	51.07	51.07	51.07
Cobalt	mg/Kg	3.9	5.83	11.65	8.2	6.56	6.69	6.69	6.69
Copper	mg/Kg	15	48	96	128	57	61	61	61
Cyanide	mg/Kg	1.8	0.44	0.88	1.8	ND	ND	ND	1.80
Iron	mg/Kg	11300	13700	27400	18700	15149.76	15280.10	15280.10	15280
Lead	mg/Kg	6.9	54	108	172	66.67	81.04	81.04	81
Magnesium	mg/Kg	5100	12165	24329	23600	15676.51	17570.69	17570.69	17571
Manganese	mg/Kg	167	272	544	433	319.40	331.52	331.52	332
Mercury	mg/Kg	0.050	0.081	0.16	0.17	ND	ND	ND	0.17
Nickel	mg/Kg	6.5	18.73	37.46	57.90	22.93	22.86	22.86	22.86
Potassium	mg/Kg	423	1456	2912	2810	1859.40	2244.88	2244.88	2245
Selenium	mg/Kg	0.45	0.51	1.03	1.2	0.61	0.69	0.69	0.69
Silver	mg/Kg	0.12	0.60	1.2	1.4	0.90	3.21	3.21	1.40
Sodium	mg/Kg	171	293	586	540	354.54	370.09	370.09	370
Thallium	mg/Kg	0.60	0.33	0.66	0.60	ND	ND	ND	0.60
Vanadium	mg/Kg	11	15.83	31.65	24.5	17.90	18.15	18.15	18.15
Zinc	mg/Kg	60	155	311	390	186.79	196.91	196.91	197
Aroclor 1016	mg/Kg	0.038	0.52	1.04	5.81	ND	ND	ND	5.81
Aroclor 1242	mg/Kg	0.019	1.59	3.19	36.3	ND	ND	ND	36
Aroclor 1248	mg/Kg	0.15	3.32	6.65	25	5.13	27.03	27.03	25
Aroclor 1254	mg/Kg	0.019	0.47	0.95	2.9	ND	ND	ND	2.9
Aroclor 1260	mg/Kg	0.035	0.46	0.91	1.13	0.64	0.86	0.86	0.86
1,4-Dichlorobenzene	mg/Kg	0.067	0.29	0.58	0.067	ND	ND	ND	0.067
2,4-Dimethylphenol	mg/Kg	0.076	0.76	1.53	0.17	ND	ND	ND	0.17
2-Methylnaphthalene	mg/Kg	0.061	0.48	0.97	3.5	0.75	0.82	0.82	0.82
2-Methylphenol	mg/Kg	0.073	0.78	1.56	0.073	ND	ND	ND	0.07
4-Methylphenol	mg/Kg	0.054	0.36	0.72	0.29	ND	ND	ND	0.29
Acenaphthene	mg/Kg	0.081	1.18	2.37	9.90	1.93	2.11	2.11	2.11

Table 3-5a. Derivation of Exposure Point Concentrations for Sediment for Ley Creek Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL	
Acenaphthylene	mg/Kg	0.054	0.32	0.65	0.28	0.49	0.43	0.43	0.28
Anthracene	mg/Kg	0.14	1.62	3.25	12	2.52	2.74	2.74	2.74
Benzo(a)anthracene	mg/Kg	0.059	5.32	10.64	30	7.62	13.37	13.37	13.37
Benzo(b)fluoranthene	mg/Kg	0.52	6.1	12.20	27	8.28	12.53	12.53	12.53
Benzo(ghi)perylene	mg/Kg	0.42	4.22	8.43	20	5.82	8.20	8.20	8.20
Benzo(k)fluoranthene	mg/Kg	0.055	2.54	5.07	13	3.50	5.12	5.12	5.12
Benzo[a]pyrene	mg/Kg	0.045	5.0	10	27	7.04	13.32	13.32	13.32
bis(2-Ethylhexyl)phthalate	mg/Kg	0.045	1.01	2.02	0.83	ND	ND	ND	0.83
Butyl benzyl phthalate	mg/Kg	0.35	1.9	3.8	0.61	ND	ND	ND	0.61
Carbazole	mg/Kg	0.058	1.2	2.5	10	2.00	2.31	2.31	2.31
Chrysene	mg/Kg	0.062	5.55	11.1	29	7.77	13.77	13.77	13.77
Dibenzo(a,h)anthracene	mg/Kg	0.093	1.72	3.44	5.9	2.40	3.67	3.67	3.67
Dibenzofuran	mg/Kg	0.078	0.95	1.91	8.8	1.60	1.70	1.70	1.70
Fluoranthene	mg/Kg	0.14	9.69	19.39	57	14.12	23.22	23.22	23.22
Fluorene	mg/Kg	0.067	1.1	2.2	9.4	1.79	1.95	1.95	1.95
Indeno(1,2,3-cd)pyrene	mg/Kg	0.40	3.8	7.6	17	5.21	7.16	7.16	7.16
Naphthalene	mg/Kg	0.057	1.03	2.06	9.3	1.71	2.25	2.25	2.25
Phenanthrene	mg/Kg	0.13	9.54	19.09	69	14.90	26.28	26.28	26
Phenol	mg/Kg	0.079	0.47	0.94	0.10	ND	ND	ND	0.099
Pyrene	mg/Kg	0.13	13	27	68	18.80	37.59	37.59	38
2-Butanone	mg/Kg	0.0050	0.011	0.022	0.0060	ND	ND	ND	0.0060
Acetone	mg/Kg	0.015	0.020	0.040	0.065	0.033	0.050	0.050	0.050
Carbon disulfide	mg/Kg	0.0030	0.012	0.023	0.0090	ND	ND	ND	0.0090
Ethylbenzene	mg/Kg	0.0020	0.0045	0.0090	0.0020	ND	ND	ND	0.0020
Tetrachloroethene	mg/Kg	0.0020	0.0044	0.0088	0.0020	ND	ND	ND	0.0020
Trichloroethene	mg/Kg	0.0020	0.0045	0.0090	0.0030	ND	ND	ND	0.0030
Xylene (total)	mg/Kg	0.0040	0.0060	0.012	0.0060	ND	ND	ND	0.0060

Notes:

mg/kg = Milligrams per kilogram.

NA = Not applicable.

ND = Not determined.

UCL = Upper confidence level.

Table 3-5b. Derivation of Exposure Point Concentrations for Upstream Sediment Samples
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Log-Normal	Critical Value	Normal	Log-Normal	Dataset Distribution D'agostino	Dataset Distribution Shapiro-Wilke	DataSet Distribution
1,1-Dichloroethane	mg/kg	36	2	6%	36	ND	ND	ND	ND	ND	ND	ND	ND
1,1-Dichloroethene	mg/kg	36	1	3%	36	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichlorobenzene	mg/kg	46	3	7%	46	ND	ND	ND	ND	ND	ND	ND	ND
1,2-Dichloroethene	mg/kg	27	7	26%	27	ND	ND	ND	ND	ND	ND	ND	ND
2,4-Dimethylphenol	mg/kg	37	2	5%	37	ND	ND	ND	ND	ND	ND	ND	ND
2-Butanone (MEK)	mg/kg	27	10	37%	27	ND	ND	ND	ND	ND	ND	ND	ND
2-Methylnaphthalene	mg/kg	37	23	62%	37	0.58	0.90	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
4-Methylphenol	mg/kg	37	13	35%	37	ND	ND	ND	ND	ND	ND	ND	ND
Acenaphthene	mg/kg	37	27	73%	37	0.53	0.92	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Acenaphthylene	mg/kg	37	25	68%	37	0.52	0.83	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Acetone	mg/kg	27	19	70%	27	0.71	0.91	0.85	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Aluminum	mg/kg	27	27	100%	27	0.90	0.93	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Anthracene	mg/kg	37	30	81%	37	0.56	0.95	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Antimony	mg/kg	37	32	86%	37	0.59	0.97	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Aroclor 1016	mg/kg	38	8	21%	38	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1242	mg/kg	38	8	21%	38	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1248	mg/kg	38	11	29%	38	0.61	0.93	0.94	NA, n<50	NA, n<50	NA	Unknown	Unknown
Aroclor 1254	mg/kg	38	20	53%	38	ND	ND	ND	ND	ND	ND	ND	ND
Aroclor 1260	mg/kg	38	29	76%	38	0.66	0.98	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Arsenic	mg/kg	37	36	97%	37	0.79	0.96	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Barium	mg/kg	27	27	100%	27	0.93	0.96	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Benzene	mg/kg	37	1	3%	37	ND	ND	ND	ND	ND	ND	ND	ND
Benzo(a)anthracene	mg/kg	37	32	86%	37	0.68	0.92	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Benzo(b)fluoranthene	mg/kg	37	32	86%	37	0.77	0.96	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Benzo(ghi)perylene	mg/kg	37	31	84%	37	0.75	0.99	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Benzo(k)fluoranthene	mg/kg	37	29	78%	37	0.70	0.93	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Benzo[a]pyrene	mg/kg	37	32	86%	37	0.70	0.90	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Beryllium	mg/kg	27	27	100%	27	0.94	0.97	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Butyl benzyl phthalate	mg/kg	37	6	16%	37	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	mg/kg	27	23	85%	27	0.82	0.93	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Calcium	mg/kg	27	27	100%	27	0.85	0.97	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Carbazole	mg/kg	37	27	73%	37	0.55	0.95	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Carbon disulfide	mg/kg	27	14	52%	27	ND	ND	ND	ND	ND	ND	ND	ND
Chlorobenzene	mg/kg	36	3	8%	36	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-5b. Derivation of Exposure Point Concentrations for Upstream Sediment Samples
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Log-Normal	Critical Value	Normal	Log-Normal	Dataset Distribution D'agostino	Dataset Distribution Shapiro-Wilke	DataSet Distribution
Chloroform	mg/kg	36	1	3%	36	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	mg/kg	36	1	3%	36	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	mg/kg	37	37	100%	37	0.66	0.88	0.94	NA, n<50	NA, n<50	NA	Unknown	Unknown
Chrysene	mg/kg	37	33	89%	37	0.70	0.91	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Cobalt	mg/kg	27	27	100%	27	0.95	0.97	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Copper	mg/kg	37	37	100%	37	0.89	0.97	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Cyanide	mg/kg	37	1	3%	37	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	mg/kg	37	7	19%	37	ND	ND	ND	ND	ND	ND	ND	ND
Dibenzo(a,h)anthracene	mg/kg	37	13	35%	37	0.77	0.97	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Dibenzofuran	mg/kg	37	22	59%	37	0.50	0.90	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Dimethyl phthalate	mg/kg	37	1	3%	37	ND	ND	ND	ND	ND	ND	ND	ND
Ethylbenzene	mg/kg	36	3	8%	36	ND	ND	ND	ND	ND	ND	ND	ND
Fluoranthene	mg/kg	37	33	89%	37	0.66	0.94	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Fluorene	mg/kg	37	27	73%	37	0.52	0.95	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Indeno(1,2,3-cd)pyrene	mg/kg	37	31	84%	37	0.76	0.98	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Iron	mg/kg	27	27	100%	27	0.85	0.86	0.88	NA, n<50	NA, n<50	NA	Unknown	Unknown
Isophorone	mg/kg	37	1	3%	37	ND	ND	ND	ND	ND	ND	ND	ND
Lead	mg/kg	38	38	100%	38	0.89	0.96	0.94	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Magnesium	mg/kg	27	27	100%	27	0.88	0.95	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Manganese	mg/kg	22	22	100%	22	0.93	0.96	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Mercury	mg/kg	37	20	54%	37	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	mg/kg	37	2	5%	37	ND	ND	ND	ND	ND	ND	ND	ND
Naphthalene	mg/kg	37	23	62%	37	0.52	0.92	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Nickel	mg/kg	37	37	100%	37	0.74	0.93	0.94	NA, n<50	NA, n<50	NA	Unknown	Unknown
Percent solids (%)	mg/kg	30	30	100%	30	ND	ND	ND	ND	ND	ND	ND	ND
Phenanthrene	mg/kg	37	32	86%	37	0.60	0.97	0.93	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Phenol	mg/kg	37	1	3%	37	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	mg/kg	27	27	100%	27	0.96	0.97	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Pyrene	mg/kg	37	34	92%	37	0.74	0.92	0.93	NA, n<50	NA, n<50	NA	Unknown	Unknown
Residue, total	mg/kg	17	17	100%	17	ND	ND	ND	ND	ND	ND	ND	ND
Selenium	mg/kg	37	19	51%	37	0.92	0.91	0.94	NA, n<50	NA, n<50	NA	Unknown	Unknown
Silver	mg/kg	27	19	70%	27	0.85	0.90	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Sodium	mg/kg	27	27	100%	27	0.91	0.96	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Total organic carbon (TOC)	mg/kg	27	27	100%	27	0.92	0.83	0.92	NA, n<50	NA, n<50	NA	Normal	Normal

Table 3-5b. Derivation of Exposure Point Concentrations for Upstream Sediment Samples
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Log-Normal	Critical Value	Normal	Log-Normal	Dataset Distribution D'agostino	Dataset Distribution Shapiro-Wilke	DataSet Distribution
Tetrachloroethene	mg/kg	36	1	3%	36	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	mg/kg	27	4	15%	27	ND	ND	ND	ND	ND	ND	ND	ND
Toluene	mg/kg	37	6	16%	37	ND	ND	ND	ND	ND	ND	ND	ND
Total TCDD TEQ	ng/kg	6	5	83%	6	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	mg/kg	37	8	22%	37	ND	ND	ND	ND	ND	ND	ND	ND
Vanadium	mg/kg	27	27	100%	27	0.92	0.96	0.88	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Vinyl chloride	mg/kg	36	2	6%	36	ND	ND	ND	ND	ND	ND	ND	ND
Xylene (total)	mg/kg	37	6	16%	37	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	mg/kg	35	35	100%	35	0.89	0.97	0.92	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
bis(2-Ethylhexyl)phthalate	mg/kg	37	21	57%	37	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	mg/kg	9	1	11%	9	ND	ND	ND	ND	ND	ND	ND	ND
n-Nitrosodiphenylamine	mg/kg	37	1	3%	37	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	mg/kg	14	6	43%	14	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	mg/kg	9	1	11%	9	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-5b. Derivation of Exposure Point Concentrations for Upstream Sediment Samples
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration	95% Upper Tolerance Limit (For Background Data Only)			Selected Tolerance Value	Background Value	Basis for Background Value
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL		Normal	Log-Normal (log conc.)	Log-Normal exp(log conc.)			
1,1-Dichloroethane	mg/kg	0.0010	0.0066	0.013	0.0030	ND	ND	ND	0.0030	ND	ND	ND	NA	0.0030	Max
1,1-Dichloroethene	mg/kg	0.010	0.0069	0.014	0.010	ND	ND	ND	0.010	ND	ND	ND	NA	0.010	Max
1,2-Dichlorobenzene	mg/kg	0.058	0.51	1.03	0.16	ND	ND	ND	0.16	ND	ND	ND	NA	0.16	Max
1,2-Dichloroethene	mg/kg	0.0020	0.0084	0.017	0.013	ND	ND	ND	0.013	ND	ND	ND	NA	0.013	Max
2,4-Dimethylphenol	mg/kg	0.048	0.41	0.83	0.072	ND	ND	ND	0.072	ND	ND	ND	NA	0.072	Max
2-Butanone (MEK)	mg/kg	0.0060	0.015	0.031	0.10	ND	ND	ND	0.10	ND	ND	ND	NA	0.10	Max
2-Methylnaphthalene	mg/kg	0.050	0.49	0.97	5.5	1	1	1	0.82	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
4-Methylphenol	mg/kg	0.048	0.34	0.67	0.62	ND	ND	ND	0.62	ND	ND	ND	NA	0.62	Max
Acenaphthene	mg/kg	0.054	1.39	2.79	21	1.93	2.11	2.11	2.11	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Acenaphthylene	mg/kg	0.058	0.46	0.92	1.7	0	0	0	0.43	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Acetone	mg/kg	0.0070	0.05	0.09	0.18	0.03	0.05	0.05	0.050	NA, n,<=50	0	1.0	1.0	0.18	Max
Aluminum	mg/kg	521	9010	18019	25900	7547.86	7736.42	7736.42	7736	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Anthracene	mg/kg	0.049	2.3	4.6	25	2.52	2.74	2.74	2.7	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Antimony	mg/kg	0.18	1.3	2.6	19	0.82	0.80	0.80	0.80	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Aroclor 1016	mg/kg	0.034	0.035	0.071	0.068	ND	ND	ND	0.068	ND	ND	ND	NA	0.068	Max
Aroclor 1242	mg/kg	0.040	0.088	0.18	1.90	ND	ND	ND	1.9	ND	ND	ND	NA	1.9	Max
Aroclor 1248	mg/kg	0.043	0.077	0.15	1.10	5.13	27.03	27.03	1.1	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Aroclor 1254	mg/kg	0.0130	0.226	0.45	2.1	ND	ND	ND	2.1	ND	ND	ND	NA	2.13	Max
Aroclor 1260	mg/kg	0.012	0.54	1.07	7.9	0.64	0.86	0.86	0.86	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Arsenic	mg/kg	1.1	6.16	12.32	19.1	5.82	5.82	5.82	5.82	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Barium	mg/kg	7.2	99	199	316	63.40	64.91	64.91	65	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Benzene	mg/kg	0.0020	0.0067	0.013	0.0020	ND	ND	ND	0.0020	ND	ND	ND	NA	0.0020	Max
Benzo(a)anthracene	mg/kg	0.061	5.93	11.85	60	7.62	13.37	13.37	13.37	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Benzo(b)fluoranthene	mg/kg	0.089	6.3	13	66	8.28	12.53	12.53	13	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Benzo(ghi)perylene	mg/kg	0.092	2.72	5.44	36	5.82	8.20	8.20	8.2	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Benzo(k)fluoranthene	mg/kg	0.080	3.20	6.4	23	3.50	5.12	5.12	5.1	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Benzo[a]pyrene	mg/kg	0.054	5.43	10.86	50	7.04	13.32	13.32	13	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Beryllium	mg/kg	0.050	0.50	1.0	1.2	0.41	0.42	0.42	0.42	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Butyl benzyl phthalate	mg/kg	0.15	1.54	3.09	34	ND	ND	ND	34	ND	ND	ND	NA	34	Max
Cadmium	mg/kg	0.070	1.6	3.21	10	1.21	1.61	1.61	1.61	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Calcium	mg/kg	6030	81642	163284	274000	55354	64228	64228	64228	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Carbazole	mg/kg	0.078	1.6	3.2	20	2.00	2.31	2.31	2.31	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Carbon disulfide	mg/kg	0.0020	0.0064	0.0128	0.015	ND	ND	ND	0.015	ND	ND	ND	NA	0.015	Max
Chlorobenzene	mg/kg	0.0020	0.0067	0.0133	0.012	ND	ND	ND	0.012	ND	ND	ND	NA	0.012	Max

Table 3-5b. Derivation of Exposure Point Concentrations for Upstream Sediment Samples
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration	95% Upper Tolerance Limit (For Background Data Only)			Selected Tolerance Value	Background Value	Basis for Background Value
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL		Normal	Log-Normal (log conc.)	Log-Normal exp(log conc.)			
Chloroform	mg/kg	0.0020	0.0069	0.014	0.0020	ND	ND	ND	0.0020	ND	ND	ND	NA	0.0020	Max
Chloromethane	mg/kg	0.0090	0.0093	0.019	0.0090	ND	ND	ND	0.0090	ND	ND	ND	NA	0.0090	Max
Chromium	mg/kg	1.3	26.55	53.11	98	52.00	51.07	51.07	51.07	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Chrysene	mg/kg	0.083	6.61	13.23	59	7.77	13.77	13.77	13.77	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Cobalt	mg/kg	0.59	7.82	15.64	15.8	6.56	6.69	6.69	6.69	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Copper	mg/kg	2.5	73.14	146.28	423	57.21	61.18	61.18	61.18	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Cyanide	mg/kg	1.2	0.40	0.79	1.2	ND	ND	ND	1.2	ND	ND	ND	NA	1.2	Max
Di-n-octyl phthalate	mg/kg	0.063	0.86	1.7	0.75	ND	ND	ND	0.75	ND	ND	ND	NA	0.75	Max
Dibenzo(a,h)anthracene	mg/kg	0.13	0.88	1.75	11	2.40	3.67	3.67	3.67	NA, n,<=50	0.00	1.0	1.0	1.0	Tolerance Limit
Dibenzofuran	mg/kg	0.078	1.1	2.2	14	1.60	1.70	1.70	1.70	NA, n,<=50	0.00	1.0	1.0	1.0	Tolerance Limit
Dimethyl phthalate	mg/kg	0.20	0.41	0.81	0.20	ND	ND	ND	0.20	ND	ND	ND	NA	0.20	Max
Ethylbenzene	mg/kg	0.0020	0.0066	0.0133	0.0030	ND	ND	ND	0.0030	ND	ND	ND	NA	0.0030	Max
Fluoranthene	mg/kg	0.041	12.85	25.7	130	14.12	23.22	23.22	23.22	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Fluorene	mg/kg	0.071	1.41	2.81	18	1.79	1.95	1.95	1.95	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Indeno(1,2,3-cd)pyrene	mg/kg	0.074	2.5	5.01	34	5.21	7.16	7.16	7.16	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Iron	mg/kg	1870	18700	37399	36100	15150	15280	15280	15280	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Isophorone	mg/kg	0.066	0.54	1.09	0.066	ND	ND	ND	0.066	ND	ND	ND	NA	0.066	Max
Lead	mg/kg	2.5	102.86	205.73	1170	66.67	81.04	81.04	81.04	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Magnesium	mg/kg	3490	13738	27476	29900	15677	17571	17571	17571	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Manganese	mg/kg	134	323.64	647.27	547	319.40	331.52	331.52	331.52	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Mercury	mg/kg	0.060	0.15	0.31	1.1	ND	ND	ND	1.1	ND	ND	ND	NA	1.1	Max
Methylene chloride	mg/kg	0.065	0.018	0.037	0.36	ND	ND	ND	0.36	ND	ND	ND	NA	0.36	Max
Naphthalene	mg/kg	0.054	0.77	1.54	10	1.71	2.25	2.25	2.25	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Nickel	mg/kg	1.8	20.24	40.49	56	22.93	22.86	22.86	22.86	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Percent solids (%)	mg/kg	56.9	71.633	143.27	83	ND	ND	ND	83	ND	ND	ND	NA	83	Max
Phenanthrene	mg/kg	0.066	10.66	21.33	130	14.90	26.28	26.28	26.28	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Phenol	mg/kg	0.071	0.68	1.36	0.071	ND	ND	ND	0.071	ND	ND	ND	NA	0.071	Max
Potassium	mg/kg	139	1972.3	3944.59	8430	1859.40	2244.88	2245	2245	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Pyrene	mg/kg	0.045	12	25	130	18.80	37.59	37.59	38	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Residue, total	mg/kg	43.6	65.11	130.21	82.1	ND	ND	ND	82.1	ND	ND	ND	NA	82.1	Max
Selenium	mg/kg	0.39	1.75	3.51	43	0.61	0.69	0.69	0.69	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Silver	mg/kg	0.13	2.94	5.88	47.9	0.90	3.21	3.21	3.21	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Sodium	mg/kg	68.9	368.11	736.21	1420	354.54	370.09	370.09	370.09	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Total organic carbon (TOC)	mg/kg	13700	42240.74	84481.48	116000	45725.00	52834.80	45725	45725	NA, n,<=50	0	1.0	NA, n,<=50	116000	Max

Table 3-5b. Derivation of Exposure Point Concentrations for Upstream Sediment Samples
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York.

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration	95% Upper Tolerance Limit (For Background Data Only)			Selected Tolerance Value	Background Value	Basis for Background Value
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL		Normal	Log-Normal (log conc.)	Log-Normal exp(log conc.)			
Tetrachloroethene	mg/kg	0.0020	0.0067	0.0134	0.0020	ND	ND	ND	0.0020	ND	ND	ND	NA	0.0020	Max
Thallium	mg/kg	0.73	0.43	0.87	0.98	ND	ND	ND	0.98	ND	ND	ND	NA	0.98	Max
Toluene	mg/kg	0.0020	0.0077	0.0154	0.027	ND	ND	ND	0.027	ND	ND	ND	NA	0.027	Max
Total TCDD TEQ	ng/kg	15	31.96	63.91	94.03	ND	ND	ND	94.03	ND	ND	ND	NA	94.03	Max
Trichloroethene	mg/kg	0.0020	0.0080	0.0161	0.038	ND	ND	ND	0.038	ND	ND	ND	NA	0.038	Max
Vanadium	mg/kg	1.6	22.33	44.66	50.3	17.90	18.15	18.15	18.15	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
Vinyl chloride	mg/kg	0.0020	0.0066	0.0132	0.0060	ND	ND	ND	0.0060	ND	ND	ND	NA	0.0060	Max
Xylene (total)	mg/kg	0.0030	0.0076	0.015	0.013	ND	ND	ND	0.013	ND	ND	ND	NA	0.013	Max
Zinc	mg/kg	24	204.93	409.87	811	186.79	196.91	196.91	196.91	NA, n,<=50	0	1.0	1.0	1.0	Tolerance Limit
bis(2-Ethylhexyl)phthalate	mg/kg	0.051	1.62	3.25	12	ND	ND	ND	12	ND	ND	ND	NA	12	Max
cis-1,2-Dichloroethene	mg/kg	0.0020	0.0011	0.0022	0.0020	ND	ND	ND	0.0020	ND	ND	ND	NA	0.0020	Max
n-Nitrosodiphenylamine	mg/kg	0.47	0.43	0.86	0.47	ND	ND	ND	0.47	ND	ND	ND	NA	0.47	Max
bis(2-Ethylhexyl)phthalate	mg/kg	0.051	1.97	3.94	3.3	ND	ND	ND	3.30	ND	ND	ND	NA	3.3	Max
cis-1,2-Dichloroethene	mg/kg	0.0020	0.0011	0.0022	0.0020	ND	ND	ND	0.0020	ND	ND	ND	NA	0.0020	Max

Notes:

mg/kg = Milligrams per kilogram.

ng/kg = Nanograms per kilogram.

NA = Not applicable.

ND = Not determined.

UCL = Upper confidence level.

Table 3-6a. Derivation of Surface Water Exposure Point Concentrations for Ley Creek
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Log-Normal	Critical Value	Normal	Log-Normal	Dataset Distribution D'agostino	Dataset Distribution Shapiro-Wilke	DataSet Distribution
Acetone	µg/L	4	1	25%	4	ND	ND	ND	ND	ND	ND	ND	ND
Aluminum	µg/L	1	1	100%	1	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	µg/L	5	2	40%	5	ND	ND	ND	ND	ND	ND	ND	ND
Barium	µg/L	1	1	100%	1	ND	ND	ND	ND	ND	ND	ND	ND
Beryllium	µg/L	1	1	100%	1	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	µg/L	1	1	100%	1	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	6	1	17%	6	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	µg/L	5	5	100%	5	ND	ND	ND	ND	ND	ND	ND	ND
Copper	µg/L	5	5	100%	5	ND	ND	ND	ND	ND	ND	ND	ND
Di-n-octyl phthalate	µg/L	5	3	60%	5	ND	ND	ND	ND	ND	ND	ND	ND
Iron	µg/L	1	1	100%	1	ND	ND	ND	ND	ND	ND	ND	ND
Lead	µg/L	5	3	60%	5	ND	ND	ND	ND	ND	ND	ND	ND
Magnesium	µg/L	1	1	100%	1	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	µg/L	1	1	100%	1	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	µg/L	4	1	25%	4	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	µg/L	5	5	100%	5	ND	ND	ND	ND	ND	ND	ND	ND
Potassium	µg/L	1	1	100%	1	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	µg/L	1	1	100%	1	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	µg/L	4	3	75%	4	ND	ND	ND	ND	ND	ND	ND	ND
Vinyl chloride	µg/L	4	1	25%	4	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	µg/L	5	5	100%	5	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	µg/L	4	4	100%	4	ND	ND	ND	ND	ND	ND	ND	ND

Table 3-6a. Derivation of Surface Water Exposure Point Concentrations for Ley Creek
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL	
Acetone	µg/L	2.0	4.3	8.5	2.0	ND	ND	ND	2.0
Aluminum	µg/L	129	129	258	129	ND	ND	ND	129
Antimony	µg/L	1.5	7.16	14.32	1.80	ND	ND	ND	1.80
Barium	µg/L	66.1	66.1	132.2	66.1	ND	ND	ND	66
Beryllium	µg/L	0.41	0.41	0.82	0.41	ND	ND	ND	0.41
Calcium	µg/L	139,000	139,000	278,000	139,000	ND	ND	ND	139,000
Chloromethane	µg/L	0.20	4.2	8.4	0.20	ND	ND	ND	0.20
Chromium	µg/L	5.0	6.26	12.52	7.4	ND	ND	ND	7.4
Copper	µg/L	2.9	5.14	10.28	8.7	ND	ND	ND	8.7
Di-n-octyl phthalate	µg/L	10	8.0	16	10	ND	ND	ND	10
Iron	µg/L	430	430	860	430	ND	ND	ND	430
Lead	µg/L	2.3	2.9	5.7	4.0	ND	ND	ND	4.0
Magnesium	µg/L	24,900	24,900	49,800	24,900	ND	ND	ND	24,900
Manganese	µg/L	71.1	71.1	142.2	71.1	ND	ND	ND	71
Methylene chloride	µg/L	0.20	3.8	7.6	0.20	ND	ND	ND	0.20
Nickel	µg/L	1.0	4.76	9.52	10.7	ND	ND	ND	10.7
Potassium	µg/L	2,650	2,650	5,300	2,650	ND	ND	ND	2,650
Sodium	µg/L	102,000	102,000	204,000	102,000	ND	ND	ND	102,000
Trichloroethene	µg/L	0.90	1.98	3.95	1.0	ND	ND	ND	1.0
Vinyl chloride	µg/L	0.10	3.78	7.55	0.10	ND	ND	ND	0.10
Zinc	µg/L	11	20	40	33	ND	ND	ND	33
cis-1,2-Dichloroethene	µg/L	0.70	1.43	2.85	2.0	ND	ND	ND	2.0

Notes:
µg/L = Micrograms per liter.
NA = Not applicable.
ND = Not determined.
UCL = Upper confidence level.

Table 3-6b. Derivation of Surface Water Exposure Point Concentrations for the Upstream Area
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Number of Samples Analyzed	Number of Detects	Frequency of Detection	Number of Samples for Statistics	Shapiro-Wilke's Test for Normality			D'agostinos Test (n>50)		Data Distribution		
						Normal	Lognormal	Critical Value	Normal	Log-Normal	Dataset Distribution D'Agostino	Dataset Distribution Shapiro Wilke	DataSet Distribution
1,2-Dichloroethene	µg/L	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Acetone	µg/L	7	4	57%	7	ND	ND	ND	ND	ND	ND	ND	ND
Aluminum	µg/L	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Antimony	µg/L	8	3	38%	8	ND	ND	ND	ND	ND	ND	ND	ND
Barium	µg/L	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Cadmium	µg/L	2	1	50%	2	ND	ND	ND	ND	ND	ND	ND	ND
Calcium	µg/L	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Chloromethane	µg/L	11	1	9%	11	ND	ND	ND	ND	ND	ND	ND	ND
Chromium	µg/L	8	8	100%	8	0.95	0.95	0.85	NA, n<50	NA, n<50	NA	Normal	Normal
Copper	µg/L	8	8	100%	8	0.90	0.97	0.85	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Di-n-octyl phthalate	µg/L	9	3	33%	9	ND	ND	ND	ND	ND	ND	ND	ND
Iron	µg/L	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Lead	µg/L	8	5	63%	8	0.93	0.87	0.85	NA, n<50	NA, n<50	NA	Normal	Normal
Magnesium	µg/L	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Manganese	µg/L	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Methylene chloride	µg/L	7	3	43%	7	ND	ND	ND	ND	ND	ND	ND	ND
Nickel	µg/L	8	8	100%	8	0.83	0.91	0.85	NA, n<50	NA, n<50	NA	Log-normal	Log-normal
Potassium	µg/L	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Silver	µg/L	2	1	50%	2	ND	ND	ND	ND	ND	ND	ND	ND
Sodium	µg/L	2	2	100%	2	ND	ND	ND	ND	ND	ND	ND	ND
Thallium	µg/L	2	1	50%	2	ND	ND	ND	ND	ND	ND	ND	ND
Total cyanide-CLP-B	µg/L	3	1	33%	3	ND	ND	ND	ND	ND	ND	ND	ND
Trichloroethene	µg/L	11	6	55%	11	0.79	0.86	0.88	NA, n<50	NA, n<50	NA	Unknown	Unknown
Vinyl chloride	µg/L	7	1	14%	7	ND	ND	ND	ND	ND	ND	ND	ND
Zinc	µg/L	6	6	100%	6	ND	ND	ND	ND	ND	ND	ND	ND
bis(2-Ethylhexyl)phthalate	µg/L	5	1	20%	5	ND	ND	ND	ND	ND	ND	ND	ND
cis-1,2-Dichloroethene	µg/L	9	6	67%	9	0.81	0.81	0.86	NA, n<50	NA, n<50	NA	Unknown	Unknown

Table 3-6b. Derivation of Surface Water Exposure Point Concentrations for the Upstream Area
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Summary Statistics				95% Upper Confidence Limit			Site Concentration	95% Upper Tolerance Limit (For Background Data Only)		
		Minimum	Mean	2xmean	Maximum	Normal	Log-Normal	UCL		Normal	Log-Normal (log conc.)	Log-Normal exp(log conc.)
1,2-Dichloroethene	µg/L	1.0	1.5	3.0	2.0	ND	ND	ND	2.0	ND	ND	ND
Acetone	µg/L	1.0	3.29	6.57	3.0	ND	ND	ND	3.0	ND	ND	ND
Aluminum	µg/L	166	215	430	264	ND	ND	ND	264	ND	ND	ND
Antimony	µg/L	1.7	1.54	3.09	2.4	ND	ND	ND	2.4	ND	ND	ND
Barium	µg/L	81.9	85.3	170.6	88.7	ND	ND	ND	88.7	ND	ND	ND
Cadmium	µg/L	0.20	0.15	0.30	0.20	ND	ND	ND	0.20	ND	ND	ND
Calcium	µg/L	166,000	181,000	362,000	196,000	ND	ND	ND	196,000	ND	ND	ND
Chloromethane	µg/L	0.20	4.15	8.31	0.20	ND	ND	ND	0.20	ND	ND	ND
Chromium	µg/L	1.6	4.79	9.58	8.0	6.29	8.09	6.29	6.29	NA, n,<=50	0.00	1.0
Copper	µg/L	3.8	6.0	12	10	7	8	8	7.5	NA, n,<=50	0.00	1.0
Di-n-octyl phthalate	µg/L	10	6.67	13.33	10	ND	ND	ND	10	ND	ND	ND
Iron	µg/L	582	589	1,177	595	ND	ND	ND	595	ND	ND	ND
Lead	µg/L	1.4	2.3	4.7	4.5	3.26	5.64	3.26	3.3	NA, n,<=50	0.00	1.0
Magnesium	µg/L	25,700	27,450	54,900	29,200	ND	ND	ND	29,200	ND	ND	ND
Manganese	µg/L	129	134	268	139	ND	ND	ND	139	ND	ND	ND
Methylene chloride	µg/L	0.30	3.24	6.49	2.0	ND	ND	ND	2.0	ND	ND	ND
Nickel	µg/L	1.6	4.94	9.88	13	7.54	11.68	11.68	11.68	NA, n,<=50	0.00	1.0
Potassium	µg/L	9,380	9,570	19,140	9,760	ND	ND	ND	9760	ND	ND	ND
Silver	µg/L	1.2	0.70	1.4	1.2	ND	ND	ND	1.2	ND	ND	ND
Sodium	µg/L	263,000	267,000	534,000	271,000	ND	ND	ND	271,000	ND	ND	ND
Thallium	µg/L	2.5	1.7	3.5	2.5	ND	ND	ND	2.5	ND	ND	ND
Total cyanide-CLP-B	µg/L	11	7.0	14	11	ND	ND	ND	11	ND	ND	ND
Trichloroethene	µg/L	0.90	3.49	6.98	12	5.40	13.84	13.84	12	NA, n,<=50	0.00	1.00
Vinyl chloride	µg/L	0.2	3.7	7.3	0.2	ND	ND	ND	0.20	ND	ND	ND
Zinc	µg/L	20.30	30.45	60.90	42.10	ND	ND	ND	42.10	ND	ND	ND
bis(2-Ethylhexyl)phthalate	µg/L	1.00	4.20	8.4	1.0	ND	ND	ND	1.0	ND	ND	ND
cis-1,2-Dichloroethene	µg/L	0.7	2.13	4.27	5.0	3.28	7.69	7.69	5.0	NA, n,<=50	0.00	1.00

Table 3-6b. Derivation of Surface Water Exposure Point Concentrations for the Upstream Area Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Units	Selected Tolerance Value	Background Value	Basis for Background Value
1,2-Dichloroethene	µg/L	NA	2.0	Max
Acetone	µg/L	NA	3.0	Max
Aluminum	µg/L	NA	264	Max
Antimony	µg/L	NA	2.4	Max
Barium	µg/L	NA	88.7	Max
Cadmium	µg/L	NA	0.20	Max
Calcium	µg/L	NA	196000	Max
Chloromethane	µg/L	NA	0.20	Max
Chromium	µg/L	NA, n,<=50	8.0	Max
Copper	µg/L	1.00	1.0	Tolerance Limit
Di-n-octyl phthalate	µg/L	NA	10	Max
Iron	µg/L	NA	595	Max
Lead	µg/L	NA, n,<=50	4.5	Max
Magnesium	µg/L	NA	29200	Max
Manganese	µg/L	NA	139	Max
Methylene chloride	µg/L	NA	2.0	Max
Nickel	µg/L	1.00	1.0	Tolerance Limit
Potassium	µg/L	NA	9760	Max
Silver	µg/L	NA	1.2	Max
Sodium	µg/L	NA	271000	Max
Thallium	µg/L	NA	2.5	Max
Total cyanide-CLP-B	µg/L	NA	11	Max
Trichloroethene	µg/L	1.00	1	Tolerance Limit
Vinyl chloride	µg/L	NA	0.2	Max
Zinc	µg/L	NA	42.10	Max
bis(2-Ethylhexyl)phthalate	µg/L	NA	1.0	Max
cis-1,2-Dichloroethene	µg/L	1.00	1.0	Tolerance Limit

Notes:
µg/L = Micrograms per liter.
NA = Not applicable.
ND = Not determined.
UCL = Upper confidence level.

Table 3-7. Benthic Invertebrate Uptake Factor Summary
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	BCF	BCF Source	BSAF (Max)	BSAF (Max) Source	USDOE (1998a) - BSAF (90%)	Notes	USDOE (1998a) - BSAF (Median)	ACOE (2000) BSAF (90%)	Notes	ACOE (2000) BSAF (Median)
Aluminum	4066	USEPA (1999a)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Antimony	1.0	USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Arsenic	44	USEPA (1992)	0.69	USDOE (1998a)	0.69	USDOE (1998a)	0.143	NA	NA	NA
Barium	47	Median of inorganics from USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Beryllium	19	USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Cadmium	64	USEPA (1992)	7.99	USDOE (1998a)	7.99	USDOE (1998a)	0.6	NA	NA	NA
Calcium	47	Median of inorganics from USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Chromium	16	USEPA (1992)	0.468	USDOE (1998a)	0.468	USDOE (1998a)	0.1	NA	NA	NA
Cobalt	NA	NA	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Copper	36	USEPA (1992)	5.25	USDOE (1998a)	5.25	USDOE (1998a)	1.556	NA	NA	NA
Cyanide	1.0	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
Iron	47	Median of inorganics from USEPA (1992)	1.94	USDOE (1998a)	1.94	USDOE (1998a)	NA	NA	NA	NA
Lead	49	USEPA (1992)	0.607	USDOE (1998a)	0.607	USDOE (1998a)	0.071	NA	NA	NA
Magnesium	47	Median of inorganics from USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Manganese	600	USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Mercury	5500	USEPA (1992)	2.868	USDOE (1998a)	2.868	USDOE (1998a)	1.136	NA	NA	NA
Nickel	47	USEPA (1992)	2.32	USDOE (1998a)	2.32	USDOE (1998a)	0.486	NA	NA	NA
Potassium	47	Median of inorganics from USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Selenium	6.0	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
Silver	0.50	USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Sodium	47	Median of inorganics from USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Thallium	119	USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Vanadium	47	Median of inorganics from USEPA (1992)	1.94	Median of inorganics from USDOE (1998a)	1.94	Median of inorganics from USDOE (1998a)	NA	NA	NA	NA
Zinc	47	USEPA (1992)	7.527	USDOE (1998a)	7.527	USDOE (1998a)	1.936	NA	NA	NA
Aroclor 1016	31200	USEPA (1992)	21.886	USDOE (1998a) (as total PCB)	21.886	USDOE (1998a) (as total PCB)	4.7	3.395	ACOE (2000) (as Total PCBs)	0.83
Aroclor 1242	31200	USEPA (1992)	21.886	USDOE (1998a) (as total PCB)	21.886	USDOE (1998a) (as total PCB)	4.7	3.395	ACOE (2000) (as Total PCBs)	0.83
Aroclor 1248	31200	USEPA (1992)	21.886	USDOE (1998a) (as total PCB)	21.886	USDOE (1998a) (as total PCB)	4.7	3.395	ACOE (2000) (as Total PCBs)	0.83
Aroclor 1254	31200	USEPA (1992)	21.886	USDOE (1998a) (as total PCB)	21.886	USDOE (1998a) (as total PCB)	4.7	3.395	ACOE (2000) (as Total PCBs)	0.83
Aroclor 1260	31200	USEPA (1992) - Aroclor 1254 as surrogate	21.886	USDOE (1998a) (as total PCB)	21.886	USDOE (1998a) (as total PCB)	4.7	3.395	ACOE (2000) (as Total PCBs)	0.83
2,4-Dimethylphenol	93.8	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	30	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
2-Methylphenol	93.325	=Kow (USEPA 1995)	NA	NAP	NA	NA	NA	NA	NA	NA
Acenaphthene	242	USEPA (1992)	0.0217	ACOE (2000)	NA	NA	NA	0.02174	ACOE (2000)	0.0167
Acenaphthylene	30	USEPA (1992)	0.0204	ACOE (2000)	NA	NA	NA	0.02044	ACOE (2000)	0.009
Anthracene	30	USEPA (1992)	1.0472	ACOE (2000)	NA	NA	NA	1.0472	ACOE (2000)	0.0085
Benzo(a)anthracene	30	USEPA (1992)	0.584	ACOE (2000)	NA	NA	NA	0.584	ACOE (2000)	0.21
Benzo(a)pyrene	30	USEPA (1992)	0.746	ACOE (2000)	NA	NA	NA	0.746	ACOE (2000)	0.062
Benzo(b)fluoranthene	30	USEPA (1992)	0.0708	ACOE (2000)	NA	NA	NA	0.0708	ACOE (2000)	0.006
Benzo(ghi)perylene	30	USEPA (1992)	0.0426	ACOE (2000)	NA	NA	NA	0.04264	ACOE (2000)	0.003
Benzo(k)fluoranthene	30	USEPA (1992)	0.0412	ACOE (2000)	NA	NA	NA	0.0412	ACOE (2000)	0.003
bis(2-Ethylhexyl)phthalate	130	USEPA (1992)	NA	NAP	NA	NA	4.7	NA	NA	NA

Table 3-7. Benthic Invertebrate Uptake Factor Summary
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	BCF	BCF Source	BSAF (Max)	BSAF (Max) Source	USDOE (1998a) - BSAF (90%)	Notes	USDOE (1998a) - BSAF (Median)	ACOE (2000) BSAF (90%)	Notes	ACOE (2000) BSAF (Median)
Butyl benzyl phthalate	414	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
Carbazole	10.5	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
Chrysene	30	USEPA (1992)	0.512	ACOE (2000)	NA	NA	NA	0.512	ACOE (2000)	0.1357
Dibenz(a,h)anthracene	30	USEPA (1992)	0.0194	ACOE (2000)	NA	NA	NA	0.0194	ACOE (2000)	0.003
Dibenzofuran	5000	TCDD as surrogate (based on Log Kow>3)	NA	NAP	NA	NA	4.7	NA	NA	NA
Di-n-butyl phthalate	89	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
Di-n-octyl phthalate	5000	USEPA (1992)(TCDD used as surrogate based on Kow)	NA	NAP	NA	NA	4.7	NA	NA	NA
Fluoranthene	1150	USEPA (1992)	1.03	ACOE (2000)	NA	NA	NA	0.9735	ACOE (2000)	0.353
Fluorene	30	USEPA (1992)	0.0768	ACOE (2000)	NA	NA	NA	0.07677	ACOE (2000)	0.043985
Hexachlorobenzene	8690	USEPA (1992)	NA	NAP	NA	NA	4.7	NA	NA	NA
Indeno(1,2,3-cd)pyrene	30	USEPA (1992)	0.0378	ACOE (2000)	NA	NA	NA	0.03775	ACOE (2000)	0.0045
Naphthalene	10.5	USEPA (1992)	0.0526	ACOE (2000)	NA	NA	NA	0.05263	ACOE (2000)	0.0175
Phenanthrene	30	USEPA (1992)	2.1488	ACOE (2000)	NA	NA	NA	2.14876	ACOE (2000)	0.106
Phenol	1.4	USEPA (1992)	NA	NAP	NA	NA	4.7	NA	NA	NA
Pyrene	30	USEPA (1992)	1.178	ACOE (2000)	NA	NA	NA	1.178	ACOE (2000)	0.388
2-Butanone	10.6	TCE as surrogate (based on Kow)	NA	NAP	NA	NA	NA	NA	NA	NA
Acetone	1	Vinyl chloride as surrogate (based on Kow)	NA	NAP	NA	NA	NA	NA	NA	NA
Carbon disulfide	10.6	TCE as surrogate (based on Kow)	NA	NAP	NA	NA	NA	NA	NA	NA
Ethylbenzene	37.5	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
Tetrachloroethene	30.6	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
Toluene	10.7	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
Trichloroethene	10.6	USEPA (1992)	NA	NAP	NA	NA	NA	NA	NA	NA
Xylenes (total)	5.2	Benzene as surrogate (based on Kow)	NA	NAP	NA	NA	NA	NA	NA	NA

Notes appear on page 2.

Notes:

BCF = Bioconcentration factor.

BSAF = Biota-sediment accumulation factor.

NA = Not available.

NAP = Not applicable.

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Table 3-8. Fish Uptake Factor Summary
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	BSAF	BSAF (reference)	BSAF - Other values considered	BSAF (Source)	BSAF (note)	BCF	BCF (reference)	BCF - Other values considered	BCF (Source)
Aluminum	0.00100812	USGS 1999a	NA	NA	NA	231	Sample et al. 1996	NA	NA
Antimony	0.034	Median of other metals	NA	NA	NA	1.0	Sample et al. 1996	NA	NA
Arsenic	0.077	USGS 1999a	NA	NA	NA	17	Sample et al. 1996	NA	NA
Barium	0.026	USGS 1999a	NA	NA	NA	75.5	Median of other inorganics from Sample et al. 1996	NA	NA
Beryllium	0.0010	USGS 1999a	NA	NA	NA	19.0	Sample et al. 1996	NA	NA
Cadmium	11.26	As Hg (bioaccumulator)	NA	NA	NA	12400	Sample et al. 1996	NA	NA
Calcium	0.034	Median of other metals	NA	NA	NA	75.5	Median of other inorganics from Sample et al. 1996	NA	NA
Chromium	0.0296	USGS 1999a	NA	NA	NA	3	Sample et al. 1996	NA	NA
Cobalt	0.01808	USGS 1999a	NA	NA	NA	75.5	Median of other inorganics from Sample et al. 1996	NA	NA
Copper	0.1164	USGS 1999a	NA	NA	NA	290	Sample et al. 1996	NA	NA
Cyanide	NA	NA	NA	NA	NA	NA	Sample et al. 1996	NA	NA
Iron	0.00262	USGS 1999a	NA	NA	NA	75.5	Median of other inorganics from Sample et al. 1996	NA	NA
Lead	0.0123	USGS 1999a	NA	NA	NA	45	Sample et al. 1996	NA	NA
Magnesium	0.034	Median of other metals	NA	NA	NA	75.5	Median of other inorganics from Sample et al. 1996	NA	NA
Manganese	0.0378	USGS 1999a	NA	NA	NA	75.5	Median of other inorganics from Sample et al. 1996	NA	NA
Mercury	11.26	USGS 1999a	NA	NA	NA	140000	USEPA 1995a	NA	NA
Nickel	0.05	USGS 1999a	NA	NA	NA	106	Sample et al. 1996	NA	NA
Potassium	0.034	Median of other metals	NA	NA	NA	75.5	Median of other inorganics from Sample et al. 1996	NA	NA
Selenium	15.92	USGS 1999a	NA	NA	NA	6800	Sample et al. 1996	NA	NA
Silver	0.034	Median of other metals	NA	NA	NA	75.5	Median of other inorganics from Sample et al. 1996	NA	NA
Sodium	0.034	Median of other metals	NA	NA	NA	NA	NA	NA	NA
Thallium	0.034	Median of other metals	NA	NA	NA	34	Sample et al. 1996	NA	NA
Vanadium	0.0105	USGS 1999a	NA	NA	NA	75.5	Median of other inorganics from Sample et al. 1996	NA	NA
Zinc	0.75	USGS 1999a	NA	NA	NA	966	Sample et al. 1996	NA	NA
Aroclor 1016	14.94	ACOE 2000	1.85	Oliver and Niimi 1985	NA	116,600,000	USEPA 1995a	90,786	Sample et al. 1996
Aroclor 1242	14.94	ACOE 2000	1.85	Oliver and Niimi 1985	NA	116,600,000	USEPA 1995a	90,786	Sample et al. 1996
Aroclor 1248	14.94	ACOE 2000	1.85	Oliver and Niimi 1985	NA	116,600,000	USEPA 1995a	603,957	Sample et al. 1996
Aroclor 1254	14.94	ACOE 2000	1.85	Oliver and Niimi 1985	NA	116,600,000	USEPA 1995a	6,224,000	Sample et al. 1996
Aroclor 1260	14.94	ACOE 2000	1.85	Oliver and Niimi 1985	NA	116,600,000	USEPA 1995a	NA	NA
2,4-Dimethylphenol	3.82	ACOE 2000	NA	NA	NA	24	Benzene as surrogate (based on Kow)	NA	NA
2-Methylnaphthalene	0.6	ACOE 2000	NA	NA	NA	2,739	di-n-butyl phthalate as surrogate (based on Kow)	NA	NA
2-Methylphenol	3.82	ACOE 2000	NA	NA	NA	5	MIBK as surrogate (based on Kow)	NA	NA
Acenaphthene	0.023	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA
Acenaphthylene	0.020	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA
Anthracene	1.04	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA
Benzo(a)anthracene	0.584	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA
Benzo(a)pyrene	0.746	ACOE 2000	NA	NA	NA	460,898	Sample et al. 1996	460898.22	Sample et al. 1996
Benzo(b)fluoranthene	0.078	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA

Table 3-8. Fish Uptake Factor Summary
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	BSAF	BSAF (reference)	BSAF - Other values considered	BSAF (Source)	BSAF (note)	BCF	BCF (reference)	BCF - Other values considered	BCF (Source)
Benzo(ghi)perylene	0.0424	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA
Benzo(k)fluoranthene	0.0412	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA
bis(2-Ethylhexyl)phthalat	14.94	ACOE 2000	NA	NA	NA	4,753,355	Sample et al. 1996	4753354.75	Sample et al. 1996
Butyl benzyl phthalate	14.94	ACOE 2000	NA	NA	NA	2,739	di-n-butyl phthalate as surrogate (based on Kow)	NA	NA
Carbazole	0.02	ACOE 2000	NA	NA	NA	2,739	di-n-butyl phthalate as surrogate (based on Kow)	NA	NA
Chrysene	0.512	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA
Dibenz(a,h)anthracene	0.0194	ACOE 2000	NA	NA	NA	460898.22	Benzo(a)pyrene as surrogate	NA	NA
Dibenzofuran	14.94	ACOE 2000	NA	NA	NA	2739	di-n-butyl phthalate as surrogate (based on Kow)	NA	NA
Di-n-butyl phthalate	14.94	ACOE 2000	NA	NA	NA	2739.4	Sample et al. 1996	2739.4	Sample et al. 1996
Di-n-octyl phthalate	14.94	ACOE 2000	NA	NA	NA	2,739	di-n-butyl phthalate as surrogate	NA	NA
Fluoranthene	0.789	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA
Fluorene	0.0766	ACOE 2000	NA	NA	NA	460,898	Benzo(a)pyrene as surrogate	NA	NA
Hexachlorobenzene	14.94	ACOE 2000	NA	NA	NA	2,739	di-n-butyl phthalate as surrogate (based on Kow)	NA	NA
Indeno(1,2,3-cd)pyrene	0.0377	ACOE 2000	NA	NA	NA	460898.22	Benzo(a)pyrene as surrogate	NA	NA
Naphthalene	0.0289	ACOE 2000	NA	NA	NA	2739	di-n-butyl phthalate as surrogate (based on Kow)	NA	NA
Phenanthrene	2.14	ACOE 2000	NA	NA	NA	2739	di-n-butyl phthalate as surrogate (based on Kow)	NA	NA
Phenol	3.82	ACOE 2000	NA	NA	NA	4.73	MIBK as surrogate (based on Kow)	NA	NA
Pyrene	0.0884	ACOE 2000	NA	NA	NA	2739	di-n-butyl phthalate as surrogate (based on Kow)	NA	NA
2-Butanone	0.1	ACOE 2000	NA	NA	NA	0.96	Sample et al. 1996	0.96	Sample et al. 1996
Acetone	0.1	ACOE 2000	NA	NA	NA	0.39	Sample et al. 1996	0.39	Sample et al. 1996
Carbon disulfide	2	ACOE 2000	NA	NA	NA	339	TCE as surrogate (based on Kow)	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	2739	di-n-butyl phthalate as surrogate (based on Kow)	NA	NA
Tetrachloroethene	2	ACOE 2000	NA	NA	NA	63.11	Sample et al. 1996	63.11	Sample et al. 1996
Toluene	NA	NA	NA	NA	NA	72.95	Sample et al. 1996	72.95	Sample et al. 1996
Trichloroethene	2	ACOE 2000	NA	NA	NA	339	USEPA 1995a	67.68	Sample et al. 1996
Xylenes (total)	NA	NA	NA	NA	NA	160.65	Sample et al. 1996	160.65	Sample et al. 1996

Notes:
BCF = Bioconcentration factor.
BSAF = Biota-sediment accumulation factor.
NA = not available

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Table 3-9. Terrestrial Organisms Uptake Factor Summary
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	UF Invertebrates	UF Invertebrates (source)	UF Mammals	UF Mammals (Source) [1]
Aluminum	2.70	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Antimony	2.70	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Arsenic	0.521	Sample, et al. (1998a)	0.0154	Sample, et al. (1998b) (General)
Barium	2.70	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.0187	Sample, et al. (1998b) (General)
Beryllium	2.70	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Cadmium	66	Sample, et al. (1998a)	6.89	Sample, et al. (1998b) (Insectivore)
Calcium	2.70	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Chromium	2.70	Sample, et al. (1998a)	0.0927	Sample, et al. (1998b) (Insectivore)
Cobalt	2.70	Sample, et al. (1998a)	0.164	Sample, et al. (1998b) (General)
Copper	2.3	Sample, et al. (1998a)	1.1123	Sample, et al. (1998b) (Insectivore)
Cyanide	2.70	Median (As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Iron	2.70	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.0278	Sample, et al. (1998b) (General)
Lead	4.32	Sample, et al. (1998a)	0.332	Sample, et al. (1998b) (Insectivore)
Magnesium	2.70	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Manganese	0.165	Sample, et al. (1998a)	0.300	Median of other inorganics
Mercury	30	Sample, et al. (1998a)	0.148	Sample, et al. (1998b) (General)
Nickel	1.89	Sample, et al. (1998a)	0.472	Sample, et al. (1998b) (Insectivore)
Potassium	2.7	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Selenium	2.7	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.796	Sample, et al. (1998b) (Insectivore)
Silver	2.7	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Sodium	2.7	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Thallium	2.7	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Vanadium	2.7	Sample, et al. (1998a) (Median of As,Cd,Cr,Cu,Pb,Mn,Zn)	0.300	Median of other inorganics
Zinc	25	Sample, et al. (1998a)	2.76	Sample, et al. (1998b) (Insectivore)
Aroclor 1016	23.5	Sample, et al. (1998a)	23.5	=UF Worms
Aroclor 1242	23.5	Sample, et al. (1998a)	23.5	=UF Worms
Aroclor 1248	23.5	Sample, et al. (1998a)	23.5	=UF Worms
Aroclor 1254	23.5	Sample, et al. (1998a)	23.5	=UF Worms
Aroclor 1260	23.5	Sample, et al. (1998a)	23.5	=UF Worms
1,2-Dichlorobenzene	NA	NA	NA	NA
2,4-Dimethylphenol	NA	NA	NA	NA
2-Methylnaphthalene	0.18	Ma et al. (1998)	0.18	=UF Worms
2-Methylphenol	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA
Acenaphthene	0.18	Ma et al. (1998)	0.18	=UF Worms
Acenaphthylene	0.18	Ma et al. (1998)	0.18	=UF Worms
Anthracene	0.18	Ma et al. (1998)	0.18	=UF Worms
Benzo(a)anthracene	0.18	Ma et al. (1998)	0.18	=UF Worms
Benzo(a)pyrene	0.18	Ma et al. (1998)	0.18	=UF Worms
Benzo(b)fluoranthene	0.18	Ma et al. (1998)	0.18	=UF Worms
Benzo(ghi)perylene	0.18	Ma et al. (1998)	0.18	=UF Worms
Benzo(k)fluoranthene	0.18	Ma et al. (1998)	0.18	=UF Worms
bis(2-Ethylhexyl)phthalate	NA	NA	NA	NA
Butyl benzyl phthalate	NA	NA	NA	NA
Carbazole	0.18	Ma et al. (1998)	0.18	=UF Worms
Chrysene	0.18	Ma et al. (1998)	0.18	=UF Worms
Dibenz(a,h)anthracene	0.18	Ma et al. (1998)	0.18	=UF Worms
Dibenzofuran	NA	NA	NA	NA
Di-n-butyl phthalate	NA	NA	NA	NA
Di-n-octyl phthalate	NA	NA	NA	NA
Fluoranthene	0.18	Ma et al. (1998)	0.18	=UF Worms
Fluorene	0.18	Ma et al. (1998)	0.18	=UF Worms
Hexachlorobenzene	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.18	Ma et al. (1998)	0.18	=UF Worms
Naphthalene	0.18	Ma et al. (1998)	0.18	=UF Worms
Phenanthrene	0.18	Ma et al. (1998)	0.18	=UF Worms

Table 3-9. Terrestrial Organisms Uptake Factor Summary
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	UF Invertebrates	UF Invertebrates (source)	UF Mammals	UF Mammals (Source) [1]
Phenol	NA	NA	NA	NA
Pyrene	0.18	Ma et al. (1998)	0.18	=UF Worms
2-Butanone	NA	NA	NA	NA
Acetone	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA
Chloromethane	NA	NA	NA	=UF Worms
Ethylbenzene	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA
Toluene	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA
Xylenes (total)	NA	NA	NA	NA

Notes:

[1] Sample et al. 1998b report results based on the following trophic groups: general, herbivore, insectivore, and omnivore. These designations are also presented on this table.
UF = Uptake factor from soil.

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Table 3-10. Plant Uptake Factors Summary
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Max Plant BCF	Source	Plant BCF	Source	Plant BCF	Source	Plant BCF	Source
Aluminum	0.0040	USEPA (1999a)	0.0040	USEPA (1999a)	0.004	Parsons (2000)	NA	NA
Antimony	0.20	USEPA (1999a)	0.2	USEPA (1999a)	0.00013	Parsons (2000)	NA	NA
Arsenic	0.0472	USDOE (1998b)	0.0472	USDOE (1998b)	0.036	USEPA (1999a)	NA	NA
Barium	0.15	USEPA (1999a)	0.15	USEPA (1999a)	0.15	Parsons (2000)	NA	NA
Beryllium	0.010	USEPA (1999a)	0.01	USEPA (1999a)	0.01	Parsons (2000)	NA	NA
Cadmium	0.833	USDOE (1998b)	0.833	USDOE (1998b)	0.364	USEPA (1999a)	NA	NA
Calcium	0.1335	Median of other metals	0.1335	Median of other metals	NA	NA	NA	NA
Chromium	0.010	Parsons (2000)	0.0075	USEPA (1999a)	0.01	Parsons (2000)	NA	NA
Cobalt	0.080	Parsons (2000)	NA	NA	0.08	Parsons (2000)	NA	NA
Copper	0.40	USEPA (1999a)	0.2	USDOE (1998b)	0.4	USEPA (1999a)	NA	NA
Cyanide	0.13	Median of other metals	0.1335	Median of other metals	NA	NA	NA	NA
Iron	0.1335	Median of other metals	0.1335	Median of other metals	NA	NA	NA	NA
Lead	0.117	USDOE (1998b)	0.117	USDOE (1998b)	0.045	USEPA (1999a)	NA	NA
Magnesium	0.1335	Median of other metals	0.1335	Median of other metals	NA	NA	NA	NA
Manganese	0.56	Parsons (2000)	0.56	Parsons (2000)	NA	NA	NA	NA
Mercury	0.663	USDOE (1998b)	0.663	USDOE (1998b)	0.0375	USEPA (1999a)	0.002	Parsons (2000)
Nickel	0.032	USEPA (1999a)	0.0136	USDOE (1998b)	0.032	USEPA (1999a)	NA	NA
Potassium	0.1335	Median of other metals	0.1335	Median of other metals	NA	NA	NA	NA
Selenium	0.70	USDOE (1998b)	0.7	USDOE (1998b)	0.016	USEPA (1999a)	NA	NA
Silver	0.40	Parsons (2000)	0.4	Parsons (2000)	0.003	Parsons (2000)	NA	NA
Sodium	0.1335	Median of other metals	0.1335	Median of other metals	NA	NA	NA	NA
Thallium	0.0040	USEPA (1999a)	NA	Parsons (2000)	0.004	USEPA (1999a)	NA	NA
Vanadium	0.010	Parsons (2000)	0.01	Parsons (2000)	NA	NA	NA	NA
Zinc	1.4	Parsons (2000)	0.43	USDOE (1998b)	1.2E-12	USEPA (1999a)	1.4	Parsons (2000)
Aroclor 1016	0.11	Parsons (2000)	0.01	USEPA (1999a)	0.11	Parsons (2000)	NA	NA
Aroclor 1242	0.020	Parsons (2000)	NA	NA	0.02	Parsons (2000)	NA	NA
Aroclor 1248	0.010	Parsons (2000)	NA	NA	0.01	Parsons (2000)	NA	NA
Aroclor 1254	0.010	USEPA (1999a)	0.01	USEPA (1999a)	0.01	Parsons (2000)	NA	NA
Aroclor 1260	0.0040	Parsons (2000)	NA	NA	0.004	Parsons (2000)	NA	NA
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	0.038	BEHP as surrogate	0.038	BEHP as surrogate	NA	NA	NA	NA
2-Methylnaphthalene	1.020	Benzo(a)pyrene as surrogate	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
2-Methylphenol	0.010	Parsons (2000)	0.01	Parsons (2000)	NA	NA	NA	NA
4-Methylphenol	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	1.020	Benzo(a)pyrene as surrogate	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Acenaphthylene	1.020	Benzo(a)pyrene as surrogate	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Anthracene	1.020	Benzo(a)pyrene as surrogate	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Benzo(a)anthracene	0.020	USEPA (1999a)	0.0202	USEPA (1999a)	NA	NA	NA	NA
Benzo(a)pyrene	1.02	Parsons (2000)	1.02	Parsons (2000)	NA	NA	NA	NA

Table 3-10. Plant Uptake Factors Summary
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Max Plant BCF	Source	Plant BCF	Source	Plant BCF	Source	Plant BCF	Source
Benzo(b)fluoranthene	0.0101	USEPA (1999a)	0.0101	USEPA (1999a)	NA	NA	NA	NA
Benzo(ghi)perylene	1.020	Benzo(a)pyrene as surrogate	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Benzo(k)fluoranthene	0.0101	USEPA (1999a)	0.0101	USEPA (1999a)	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.038	USEPA (1999a)	0.038	USEPA (1999a)	NA	NA	NA	NA
Butyl benzyl phthalate	0.038	BEHP as surrogate	0.038	BEHP as surrogate	NA	NA	NA	NA
Carbazole	0.038	BEHP as surrogate	0.038	BEHP as surrogate	NA	NA	NA	NA
Chrysene	0.019	USEPA (1999a)	0.0187	USEPA (1999a)	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0064	USEPA (1999a)	0.0064	USEPA (1999a)	NA	NA	NA	NA
Dibenzofuran	0.038	BEHP as surrogate	0.038	BEHP as surrogate	NA	NA	NA	NA
Di-n-butyl phthalate	0.00	di-n-octyl phthalate as surrogate	0.000157	di-n-octyl phthalate as surrogate	NA	NA	NA	NA
Di-n-octyl phthalate	0.00016	Parsons (2000)	0.000157	USEPA (1999a)	0.00016	Parsons (2000)	NA	NA
Fluoranthene	1.020	Benzo(a)pyrene as surrogate	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Fluorene	0.038	BEHP as surrogate	0.038	BEHP as surrogate	NA	NA	NA	NA
Hexachlorobenzene	0.026	USEPA (1999a)	0.0255	USEPA (1999a)	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0039	USEPA (1999a)	0.0039	USEPA (1999a)	NA	NA	NA	NA
Naphthalene	1.020	Benzo(a)pyrene as surrogate	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Phenanthrene	0.038	BEHP as surrogate	0.038	BEHP as surrogate	NA	NA	NA	NA
Phenol	0.04	BEHP as surrogate	0.038	BEHP as surrogate	NA	NA	NA	NA
Pyrene	0.038	BEHP as surrogate	0.038	BEHP as surrogate	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	52	USEPA (1999a)	52	USEPA (1999a)	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	2.900	USEPA (1999a)	2.9	USEPA (1999a)	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes (total)	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

BCF = Bioconcentration factor.

NA = Not available.

NAP = Not applicable

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Table 3-11. Food Chain Model Input Parameters for Selected Receptors
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Life History Data [1]	Short-tailed Shrew *Blanaria brevicauda*	American Robin *Turdus migratorius*	Eastern Cottontail rabbit *Sylvilagus floridanus*	Red-tailed Hawk *Buteo jamaicensis*	Great Blue Heron *Ardea herodias*	Mink *Mustela vison*
Body Weight (kg) (average)	0.0171	0.084	1.21	1.096	2.205	0.896
Body Weight (kg) (minimum)	0.015	0.078	1.012	0.957	1.87	0.533
Body Weight (kg) (maximum)	0.0192	0.09	1.409	1.235	2.54	1.734
dIR forage/bw (kg/kg-day) average	0.555	1.52	0.101 [2]	0.098	0.162	0.1575
dIR forage/bw minimum	0.49	1.27	0.0883 [2]	0.086	0.129	0.12
dIR forage/bw maximum	0.62	1.77	0.112 [2]	0.11	0.195	0.22
Area use factor (AUF) Site/Available habitat	1	1	1	0.11	1	1
Time use factor (TUF)	1	1	1	0.63	0.63	1
Biota (% of dIR forage/day)	100%	100%	100%	100%	100%	100%
Actual dietary components:						
terrestrial invertebrates	0.78	0.32	0	0	0	0
small mammal	0.05	0	0	0.82	0	0
vegetable matter	0.17	0.68	1	0	0	0
aquatic invertebrates	0	0	0	0	0.01	0.39
fish	0	0	0	0	0.98	0.61
other (e.g., birds, reptiles)	0	0	0	0.18	0.01	0
Water ingestion (kg/kg-day)	0.223	0.14	0.097	0.059	0.045	0.1
Water ingestion (l/day)	NA	NA	NA	NA	NA	NA
Soil/Sediment ingestion (% of dIR forage/day)	NA	NA	NA	NA	NA	NA
Soil/Sediment ingestion (kg/day)	0.0006 [3]	0.001 [4]	0.015 [5]	NA	NA	NA

Notes:

NA = Not applicable.

1. Source is USEPA (1993) unless otherwise noted.
2. Calculated using equation 3-9 from USEPA (1993). [0.577*Body Weight$^{0.727}$]
3. Value is for least shrew as presented in Parson (2000).
4. Value is for boat-tailed grackle as presented in Parsons (2000).
5. Source is Parsons (2000).

Table 4-1. Toxicity Reference Values for Great Blue Heron
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[a]pyrene	Mallard duck	36	Mallard duck	36	0.1	3.6	Eisler (1987)	Reduced growth, decreased weight	Survival	Not reported
Benzo[a]pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)		Fertility and malformations	Subchronic
Dibenz[a,h]anthracene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[a]anthracene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Cyanide	Mallard duck	0.53	Mallard duck	0.53	0.1	0.053	Parsons (2000)		Survival	Not reported
Cyanide	Mallard duck	2	Mallard duck	2	0.1	0.2	Cal/Ecotox (1999)	as potassium cyanide	Not reported.	Not reported
Acetone	Rat	10	Rat	10	0.1	1	Sample et al. (1996)		Liver and kidney damage	Not reported
Carbon disulfide	Rabbit	11	Rabbit	11	0.1	1.1	IRIS (2001)		Reproduction	Chronic
Trichloroethene	Mouse	0.7	Mouse	0.7	0.1	0.07	Sample et al. (1996)		Hepatotoxicity	Subchronic
Acenapthene	Mouse	1	Mouse	1	0.1	0.1	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Di-n-butyl phthalate	Ringed dove	0.11	Great Blue Heron	0.11	1	0.11	Sample et al. (1996)		Reproduction	Chronic
Phenanthrene	Mallard	1,000	Mallard	1,000	1	1,000	Parsons (2000)		Physiological	Chronic
Butyl benzyl phthalate	Rat	159	Rat	159	0.1	15.9	IRIS (2001)		Increased liver to body weight and increased liver to brain ratios	Chronic
Fluorene	Mallard	1,000	Mallard	1,000	1	1,000	Parsons (2000)		Physiological	Chronic
Carbazole		NV		NV		NV		No value		
Naphthalene	Mallard	1,000	Mallard	1,000	1	1,000	Parsons (2000)		Physiological	Chronic
2-Methylnapthalene	Mouse	1	Mouse	1	0.1	0.1	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylphenol	Rat	50	Rat	50	0.1	5	IRIS (2001)		Neurotoxicity and Decreased body weight	Subchronic
Ethylbenzene	Rat	97.1	Rat	97.1	0.1	9.71	IRIS (2001)		Liver and kidney toxicity	Subchronic
2,4-Dimethylphenol	Mouse	50	Mouse	50	0.1	5	IRIS (2001)		Hematological and Behavioral	Subchronic
Toluene	Mouse	26	Mouse	26	0.1	2.6	Sample et al. (1996)		Reproduction	Chronic
Phenol	Rat	60	Rat	60	0.1	6	IRIS (2001)		Reduced fetal body weight	Chronic
Bis(2-ethylhexyl)phthalate	Ringed dove	1.1	Great Blue Heron	1.1	1	1.1	Sample et al. (1996)		Reproduction	Chronic
Di-n-octyl phthalate	Ringed dove	0.11	Great Blue Heron	0.11	1	0.11	Sample et al. (1996)	as Di-N-butylphthalate	Reproduction	Chronic
Hexachlorobenzene	Coturnix quail	22.5	Coturnix quail	22.5	0.01	0.225	USEPA (1999)	5-day NOAEL	Not reported	Acute
Anthracene	Mallard	1,000	Mallard	1,000	1	1,000	Parsons (2000)	Mixed PAHs used	Physiological	Chronic
Tetrachloroethylene	Mouse	1.4	Mouse	1.4	0.1	0.14	Sample et al. (1996)		Heptotoxicity	Subchronic
Pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Dibenzofuran	Red-winged blackbird	21.8	Red-winged blackbird	21.8	0.01	0.218	Parsons (2000)	LC50	Survival	Acute
Benzo[g,h,i]perylene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Indeno[1,2,3-cd]pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic

Table 4-1. Toxicity Reference Values for Great Blue Heron
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[b]fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[k]fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Acenapthylene	Mallard	1,000	Mallard	1000	1	1,000	Parsons (2000)	Mixed PAHs used	Physiological	Chronic
Chrysene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Xylenes (total)	Japanese quail	854	Japanese quail	854	0.1	85.4	Parsons (2000)		Survival	5 days
PCBs	Chicken	0.98	Chicken	0.98	1	0.98	Parsons (2000)		Reproduction	Chronic
Aluminum	Ringed dove	109.7	Great Blue Heron	109.7	1	109.7	Sample et al. (1996)	as Al2(SO4)2	Reproduction	Chronic
Iron	Rat	2,550	Rat	2,550	0.001	2.55	Parsons (2000)	LD50	Survival	Not reported
Lead	American kestrel	3.85	Great Blue Heron	3.85	1	3.85	Sample et al. (1996)	as metallic lead	Reproduction	Chronic
Magnesium		NV		NV		NV		No value		
Manganese	Japanese quail	997	Great Blue Heron	997	1	997	Sample et al. (1996)	as Mn3O4	Growth, aggressive behavior	Chronic
Mercury	Japanese quail	0.45	Great Blue Heron	0.45	1	0.45	Sample et al. (1996)	as Mercuric chloride	Reproduction	Chronic
Nickel	Mallard duckling	77.4	Great Blue Heron	77.4	1	77.4	Sample et al. (1996)	as Nickel sulfate	Mortality, growth, behavior	Chronic
Potassium		NV		NV		NV		No value		
Silver	Mallard	1780	Mallard	1780	0.1	178	Parsons (2000)		Not reported	Subchronic
Sodium		NV		NV		NV		No value		
Thallium	European Starling	9.5	European Starling	9.5	0.1	0.95	Parsons (2000)		Survival	Acute
Antimony	Mouse	0.125	Mouse	0.125	0.1	0.0125	Sample et al. (1996)	as Antimony potassium tartrate	Lifespan; longevity	Chronic
Arsenic	Mallard duck	5.14	Great Blue Heron	5.1	1	5.1	Sample et al. (1996)	as sodium arsenite	Mortality	Chronic
Barium	1-day old chicks	20.8	Great Blue Heron	20.8	1	20.8	Sample et al. (1996)	as Barium hydroxide	Mortality	Subchronic
Beryllium	Rat	0.66	Rat	0.66	0.1	0.066	Sample et al. (1996)	as Beryllium sulfate	Longevity; weight loss	Chronic
Cadmium	Mallard duck	1.45	Great Blue Heron	1.45	1	1.45	Sample et al. (1996)	as Cadmium chloride	Reproduction	Chronic
Chromium	Black duck	1	Great Blue Heron	1	1	1	Sample et al. (1996)	as Cr+3	Reproduction	Chronic
Cobalt	Rat	5	Rat	5	0.01	0.05	Parsons (2000)		Testicular atrophy and behavior	Chronic
Copper	1 day old chicks	47	Great Blue Heron	47	1	47	Sample et al. (1996)	as Copper oxide	Growth, mortality	Chronic
Vanadium	Mallard duck	11.4	Great Blue Heron	11.4	1	11.4	Sample et al. (1996)	as Vanadyl sulfate	Mortality, body weight, blood chemistry	Chronic
Zinc	White leghorn hen	14.5	Great Blue Heron	14.5	1	14.5	Sample et al. (1996)	as Zinc sulfate	Reproduction	Chronic
Calcium		NV		NV		NV		No value		
Selenium	Mallard duck	0.5	Great Blue Heron	0.5	1	0.5	Sample et al. (1996)	as sodium selenite	Reproduction	Chronic
Aroclor 1254	Ring necked pheasant	0.18	Great Blue Heron	0.18	1	0.18	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1254	Chicken	0.98	Chicken	0.98	1	0.98	Parsons (2000)		Reproduction	Chronic
Aroclor 1254	Mallard duck	1.45	Mallard duck	1.45	1	1.45	Parsons (2000)		Reproduction	Subchronic
Aroclor 1260	Japanese quail	7.04	Japanese quail	7.04	0.1	0.704	Parsons (2000)	LOAEL	Reproduction	Chronic
Aroclor 1260	Ring necked pheasant	0.18	Great Blue Heron	0.18	1	0.18	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic

Table 4-1. Toxicity Reference Values for Great Blue Heron
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Aroclor 1248	Screech owl	0.4	Screech owl	0.4	1	0.4	USEPA (1999b)		Egg production, hatching success, fledging success	Chronic
Aroclor 1248	Screech owl	3	Great Blue Heron	3	1	3	Parsons (2000)		Reproduction	Chronic
Aroclor 1016	Domestic Chicken	1.4	Domestic Chicken	1.37	1	1.37	USEPA (1999b)			
Methyl mercury	Mallard duck	0.0064	Great Blue Heron	0.006	1	0.006	Sample et al. (1996)	as Methylmercury dicyandiamide	Reproduction	Chronic
Aroclor 1242	Screech owl	0.41	Great Blue Heron	0.41	1	0.41	Sample et al. (1996)		Reproduction	Chronic
Total PCBs	Ring necked pheasant	0.18	Great Blue Heron	0.18	1	0.18	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic

[1] Concentrations are reported in milligrams per kilogram per day (mg/kg/day).

[2] References:

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ES NOAEL	No observed adverse effect level for the endpoint species.
NV	No value was identified in the literature.
TRV	Toxicity reference value.
TS NOAEL	No observed adverse effect level for the test species.
UF	Uncertainty factor.

Table 4-2. Toxicity Reference Values for Mink
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[a]pyrene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)		Reproduction	Chronic
Dibenz[a,h]anthracene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[a]anthracene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Cyanide	Rat	68.7	Mink	49.7	1	49.7	Sample et al. (1996)	as potassium cyanide	Reproduction	Chronic
Acetone	Rat	10	Mink	7.7	1	7.7	Sample et al. (1996)		Liver and kidney damage	Subchronic
Carbon disulfide	Rat	100	Rat	100	1	100	Parsons (2000)	10-day study; during critical lifestage	Gestation, Development	Subchronic
Carbon disulfide	Rabbit	11	Rabbit	11	0.1	1.1	IRIS (2001)		Reproduction	Chronic
Trichloroethene	Mouse	0.7	Mink	0.291	1	0.291	Sample et al. (1996)		Hepatotoxicity	Subchronic
Acenapthene	Mouse	350	Mouse	350	1	350	Parsons (2000)		Hepatic effects	Chronic
Acenapthene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Di-n-butyl phthalate	Mouse	550	Mink	229	1	229	Sample et al. (1996)		Reproduction	Chronic
Phenanthrene	Mouse	350	Mouse	350	1	350	Parsons (2000)	as Acenaphthene	Hepatotoxicity	Chronic
Phenanthrene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Butyl benzyl phthalate	Rat	159	Rat	159	0.1	15.9	IRIS (2001)		Increased liver to body weight and increased liver to brain ratios	Chronic
Fluorene	Mouse	125	Mouse	125	0.1	12.5	Parsons (2000)	LOAEL	Hematological effects	Chronic
Fluorene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Carbazole		NV		NV		NV		No value		
Naphthalene	Mouse	53	Mouse	53	1	53	Parsons (2000)		Hematocrit changes	Chronic
Napthalene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylnapthalene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylnapthalene	Mouse	53	Mouse	53	1	53	Parsons (2000)	as Naphthalene	Hematocrit changes	Chronic
2-Methylphenol	Rat	50	Rat	50	0.1	5	IRIS (2001)			
Ethylbenzene	Rat	4,730	Rat	4,730	0.01	47.3	Parsons (2000)	LD50	Survival	Acute
Ethylbenzene	Rat	97.1	Rat	97.1	0.1	9.71	IRIS (2001)		Liver and kidney toxicity	Subchronic
2,4-Dimethylphenol	Mouse	50	Mouse	50	0.1	5	IRIS (2001)			
Toluene	Mouse	26	Mink	10.8	1	10.8	Sample et al. (1996)		Reproduction	Chronic
Phenol	Rat	60	Rat	60	0.1	6	IRIS (2001)		Reduced fetal body weight	Chronic
Bis(2-ethylhexyl)phthalate	Mouse	18.3	Mink	7.6	1	7.6	Sample et al. (1996)		Reproduction	Chronic
Bis(2-ethylhexyl)phthalate	Mouse	13	Mouse	13	1	13	Parsons (2000)		Reproduction	Chronic
Di-n-octyl phthalate	Mouse	550	Mink	229	1	229	Sample et al. (1996)	as Di-N-butylphthalate	Reproduction	Chronic
Hexachlorobenzene	Rat	1600	Rat	1600	0.1	160	USEPA (1999)			Chronic
Anthracene	Mouse	1,000	Mouse	1,000	1	1,000	Parsons (2000)		Heptotoxicity	Chronic
Anthracene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Tetrachloroethylene	Mouse	1.4	Mink	0.58	1	0.58	Sample et al. (1996)		Heptotoxicity	Subchronic
Pyrene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Dibenzofuran	Mouse	0.01	Mouse	0.01	1	0.01	Parsons (2000)		Reproduction	Chronic
Benzo[g,h,i]perylene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic

Table 4-2. Toxicity Reference Values for Mink
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Indeno[1,2,3-cd]pyrene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[b]fluoranthene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Fluoranthene	Mouse	125	Mouse	125	0.1	12.5	Parsons (2000)	LOAEL	Renal effects	Chronic
Fluoranthene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[k]fluoranthene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Acenapthylene	Mouse	350	Mouse	350	1	350	Parsons (2000)	as Acenaphthene	Hepatic effects	Chronic
Acenapthylene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Chrysene	Mouse	1	Mink	0.42	1	0.42	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Xylene (total)	Mouse	2.1	Mink	0.874	1	0.874	Sample et al. (1996)	Mixed isomers	Reproduction	Chronic
PCBs	Mink	0.14	Mink	0.14	1	0.14	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aluminum	Mouse	1.93	Mink	0.803	1	0.803	Sample et al. (1996)	as AlCl3	Reproduction	Chronic
Iron	Rat	2,550	Rat	2,550	0.01	25.5	Parsons (2000)	LD50	Survival	Not reported
Lead	Rat	8	Mink	6.15	1	6.15	Sample et al. (1996)	as Lead acetate	Reproduction	Chronic
Magnesium		NV		NV		NV		No value		
Manganese	Rat	88	Mink	68	1	68	Sample et al. (1996)	as Mn3O4	Reproduction	Chronic
Mercury	Mink	1	Mink	1	1	1	Sample et al. (1996)	as Mercuric chloride	Mortality, liver and kidney histology, reproduction	Chronic
Nickel	Rat	40	Mink	30.77	1	30.77	Sample et al. (1996)	as Nickel sulfate hexahydrate	Reproduction	Chronic
Potassium		NV		NV		NV		No value		
Silver	Rat	222	Rat	222	1	222	Parsons (2000)		Weight loss	Chronic
Silver	Rat	181.2	Rat	181.2	0.1	18.12	ATSDR (1997)	LOAEL	Decreased activity	Chronic
Sodium		NV		NV		NV		No value		
Thallium	Rat	0.0074	Mink	0.006	1	0.006	Sample et al. (1996)	as Thallium sulfate	Reproduction	Subchronic
Antimony	Mouse	0.125	Mink	0.052	1	0.052	Sample et al. (1996)	as Antimony potassium tartrate	Lifespan; longevity	Chronic
Arsenic	Mouse	0.126	Mink	0.052	1	0.052	Sample et al. (1996)	as Arsenite	Reproduction	Chronic
Arsenic	Mouse	5	Mouse	5	0.1	0.5	Parsons (2000)	LOAEL	Reproduction	Chronic
Barium	Rat	5.1	Mink	4.1	1	4.1	Sample et al. (1996)	as Barium chloride	Growth, hypertension	Chronic
Beryllium	Rat	0.66	Mink	0.51	1	0.51	Sample et al. (1996)	as Beryllium sulfate	Longevity; weight loss	Chronic
Cadmium	Rat	1	Mink	0.742	1	0.742	Sample et al. (1996)	as Cadmium chloride	Reproduction	Chronic
Chromium	Rat	3.28	Mink	2.52	1	2.52	Sample et al. (1996)	as Chromium (IV)	Body weight and food consumption	Chronic
Cobalt	Rat	5	Rat	5	1	5	Parsons (2000)		Testicular atrophy and behavior	Chronic
Copper	Mink	11.7	Mink	11.7	1	11.7	Sample et al. (1996)	as Copper sulfate	Reproduction	Chronic
Copper	Rat	14	Rat	14	1	14	Parsons (2000)		Gastrointestinal efects	Chronic
Vanadium	Rat	0.21	Mink	0.15	1	0.15	Sample et al. (1996)	as Metavanadate (NaVO3)	Reproduction	Chronic
Zinc	Rat	160	Mink	123.1	1	123.1	Sample et al. (1996)	as Zinc oxide	Reproduction	Chronic
Calcium		NV		NV		NV		No value		
Selenium	Rat	0.2	Mink	0.154	1	0.154	Sample et al. (1996)	as Selenate (SeO4)	Reproduction	Chronic
Aroclor 1254	Mink	0.14	Mink	0.14	1	0.14	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1260	Mink	0.14	Mink	0.14	1	0.14	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic

Table 4-2. Toxicity Reference Values for Mink
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Aroclor 1248	Rhesus monkey	0.01	Mink	0.015	1	0.015	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1016	Mink	1.37	Mink	1.37	1	1.37	Sample et al. (1996)		Reproduction	Chronic
Methyl mercury	Mink	0.015	Mink	0.015	1	0.015	Sample et al. (1996)	as Methyl mercury chloride	Mortality, weight loss, ataxia	Chronic
Aroclor 1242	Mink	0.069	Mink	0.069	1	0.069	Sample et al. (1996)		Reproduction	Chronic

[1] Concentrations are reported in milligrams per kilogram per day (mg/kg/day).

[2] References:

Agency for Toxic Substances and Disease Registry (ATSDR) 1997. *ATSDR's Toxicological Profiles on CD-ROM.* CRC Press, Inc. Boca Raton, Florida.

California Environmental Protection Agency (Cal/EPA) 2000. *California Wildlife Exposure Factor and Toxicity Database.* Office of Environmental Health and Hazard Assessment, California.

Integrated Risk Information System (IRIS) 2001. Online database access site: www.epa.gov/iris

Sample, B.E., D.M. Opreski, and G.W. Suter. 1996. *Toxicological Benchmarks for Wildlife: 1996 Revision Report.* Report No. ES/ER/TM-86R1. Oak Ridge National Laboratory, Oak

United States Environmental Protection Agency (USEPA) 1999a. *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer Review Draft.* Solid Waste and Emergency Response. EPA A530-D-99-001A. August.

United States Environmental Protection Agency (USEPA) 1999b. *Volume 2E - Baseline Ecological Risk Assessment: Hudson River Assessment: Hudson River PCBs Reassessment RI/FS.* USEPA Region II, U.S. Army Corps of Engineers, Kansas City District.

ES NOAEL	No observed adverse effect level for the endpoint species.
NV	No value was identified in the literature.
TRV	Toxicity reference value.
TS NOAEL	No observed adverse effect level for the test species.
UF	Uncertainty factor.

Table 4-3. Toxicity Reference Values for Short-Tailed Shrew
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[a]pyrene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)		Reproduction	Chronic
Dibenz[a,h]anthracene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[a]anthracene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Cyanide	Rat	68.7	Short-tailed Shrew	141.9	1	141.9	Sample et al. (1996)	as Potassium cyanide	Reproduction	Chronic
Acetone	Rat	10	Short-tailed Shrew	22	1	22	Sample et al. (1996)		Liver and kidney damage	Subchronic
Carbon disulfide	Rat	100	Rat	100	1	100	Parsons (2000)	10-day study; during critical lifestage	Gestation, Development	Subchronic
Carbon disulfide	Rabbit	11	Rabbit	11	0.1	1.1	IRIS (2001)		Reproduction	Chronic
Trichloroethene	Mouse	0.7	Short-tailed Shrew	0.832	1	0.832	Sample et al. (1996)		Hepatotoxicity	Subchronic
Acenapthene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Acenapthene	Mouse	350	Mouse	350	1	350	Parsons (2000)		Hepatic effects	Chronic
Di-n-butyl phthalate	Mouse	550	Short-tailed Shrew	654	1	654	Sample et al. 1996		Reproduction	Chronic
Phenanthrene	Mouse	350	Mouse	350	1	350	Parsons (2000)	as Acenaphthene	Hepatotoxicity	Chronic
Phenanthrene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Butyl benzyl phthalate	Rat	159	Rat	159	0.1	15.9	IRIS (2001)		Increased liver to body weight and increased liver to brain ratios	Chronic
Fluorene	Mouse	125	Mouse	125	0.1	12.5	Parsons (2000)	LOAEL	Hematological effects	Chronic
Fluorene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Carbazole		NV		NV		NV		No value		
Naphthalene	Mouse	53	Mouse	53	1	53	Parsons (2000)		Hematocrit changes	Chronic
Naphthalene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylnapthalene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylnapthalene	Mouse	53	Mouse	53	1	53	Parsons (2000)	as Naphthalene	Hematocrit changes	Chronic
2-Methylphenol	Rat	50	Rat	50	1	50	IRIS (2001)		Neurotoxicity and Decreased body weight	Subchronic
Ethylbenzene	Rat	97.1	Rat	97.1	0.1	9.71	IRIS (2001)		Liver and kidney toxicity	Subchronic
2,4-Dimethylphenol	Mouse	50	Rat	50	1	50	IRIS (2001)		Hematological and Behavioral	Subchronic
Toluene	Mouse	26	Short-tailed Shrew	30.9	1	30.9	Sample et al. (1996)		Reproduction	Chronic
Phenol	Rat	60	Rat	60	0.1	6	IRIS (2001)		Reduced fetal body weight	Chronic
Bis(2-ethylhexyl)phthalate	Mouse	18.3	Short-tailed Shrew	21.8	1	21.8	Sample et al. (1996)		Reproduction	Chronic
Bis(2-ethylhexyl)phthalate	Mouse	13	Mouse	13	1	13	Parsons (2000)		Reproduction	Chronic
Di-n-octyl phthalate	Mouse	550	Short-tailed Shrew	654	1	654	Sample et al. (1996)	as Di-N-butylphthalate	Reproduction	Chronic
Hexachlorobenzene	Rat	1,600	Rat	1,600	0.1	160	USEPA 1999		Not reported	Chronic
Anthracene	Mouse	1,000	Mouse	1,000	1	1,000	Parsons (2000)		Heptotoxicity	Chronic
Anthracene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Tetrachloroethylene	Mouse	1.4	Short-tailed Shrew	1.66	1	1.66	Sample et al. (1996)		Heptotoxicity	Subchronic
Pyrene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Dibenzofuran	Mouse	0.01	Mouse	0.01	1	0.01	Parsons (2000)		Reproduction	Chronic
Benzo[g,h,i]perylene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Indeno[1,2,3-cd]pyrene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[b]fluoranthene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Fluoranthene	Mouse	125	Mouse	125	0.1	12.5	Parsons (2000)	LOAEL	Renal effects	Chronic
Fluoranthene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[k]fluoranthene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic

Table 4-3. Toxicity Reference Values for Short-Tailed Shrew
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Acenapthylene	Mouse	350	Mouse	350	1	350	Parsons (2000)	as Acenaphthene	Hepatic effects	Chronic
Acenapthylene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Chrysene	Mouse	1	Short-tailed Shrew	1.19	1	1.19	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Xylene (total)	Mouse	2.1	Short-tailed Shrew	2.497	1	2.497	Sample et al. (1996)	mixed isomers	Reproduction	Chronic
PCBs	Mink	0.14	Short-tailed Shrew	0.067	1	0.067	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aluminum	Mouse	1.93	Short-tailed Shrew	2.295	1	2.295	Sample et al. (1996)	as AlCl3	Reproduction	Chronic
Iron	Rat	2,550	Rat	2,550	0.01	25.5	Parsons (2000)	LD50	Survival	Not reported
Lead	Rat	8	Short-tailed Shrew	17.58	1	17.58	Sample et al. (1996)	as lead acetate	Reproduction	Chronic
Magnesium		NV		NV		NV		No value		
Manganese	Rat	88	Short-tailed Shrew	193	1	193	Sample et al. (1996)	as Mn3O4	Reproduction	Chronic
Mercury	Mink	1	Short-tailed Shrew	2.86	1	2.86	Sample et al. (1996)	as mercuric chloride	Mortality, liver and kidney histology, reproduction	Chronic
Nickel	Rat	40	Short-tailed Shrew	87.91	1	87.91	Sample et al. (1996)	as nickel sulfate hexahydrate	Reproduction	Chronic
Potassium		NV		NV		NV		No value		
Silver	Rat	18.2	Rat	18.2	1	18.2	ATSDR (1997)	LOAEL	Decreased activity	Chronic
Silver	Rat	222	Rat	222	1	222	Parsons (2000)		Weight loss	Chronic
Sodium		NV		NV		NV		No value		
Thallium	Rat	0.0074	Short-tailed Shrew	0.016	1	0.016	Sample et al. (1996)	as thallium sulfate	Reproduction	Subchronic
Antimony	Mouse	0.125	Short-tailed Shrew	0.149	1	0.149	Sample et al. (1996)	as antimony potassium tartrate	Lifespan; longevity	Chronic
Arsenic	Mouse	0.126	Short-tailed Shrew	0.15	1	0.15	Sample et al. (1996)	as arsenite	Reproduction	Chronic
Arsenic	Mouse	5	Mouse	5	0.1	0.5	Parsons (2000)	LOAEL	Reproduction	Chronic
Barium	Rat	5.1	Short-tailed Shrew	11.8	1	11.8	Sample et al. (1996)	as Barium chloride	Growth, hypertension	Chronic
Beryllium	Rat	0.66	Short-tailed Shrew	1.45	1	1.45	Sample et al. (1996)	as Beryllium sulfate	Longevity; weight loss	Chronic
Cadmium	Rat	1	Short-tailed Shrew	2.12	1	2.12	Sample et al. (1996)	as Cadmium chloride	Reproduction	Chronic
Chromium	Rat	3.28	Short-tailed Shrew	7.21	1	7.21	Sample et al. (1996)	as Cr+6	Body weight and food consumption	Chronic
Cobalt	Rat	5	Rat	5	1	5	Parsons (2000)		Testicular atrophy and behavior	Chronic
Copper	Mink	11.7	Short-tailed Shrew	33.4	1	33.4	Sample et al. (1996)	as Copper sulfate	Reproduction	Chronic
Copper	Rat	14	Rat	14	1	14	Parsons (2000)		Gastrointestinal efects	Chronic
Vanadium	Rat	0.21	Short-tailed Shrew	0.428	1	0.428	Sample et al. (1996)	as metavanadate (NaVO3)	Reproduction	Chronic
Zinc	Rat	160	Short-tailed Shrew	351.7	1	351.7	Sample et al. (1996)	as Zinc oxide	Reproduction	Chronic
Calcium		NV		NV		NV		No value		
Selenium	Rat	0.2	Short-tailed Shrew	0.44	1	0.44	Sample et al. (1996)	as Selenate (SeO4)	Reproduction	Chronic
Aroclor 1254	Mink	0.14	Short-tailed Shrew	0.067	1	0.067	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1260	Mink	0.14	Short-tailed Shrew	0.067	1	0.067	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aroclor 1248	Rhesus monkey	0.01	Short-tailed Shrew	0.043	1	0.043	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1016	Mink	1.37	Short-tailed Shrew	3.91	1	3.91	Sample et al. (1996)		Reproduction	Chronic
Methyl mercury	Rat	0.032	Short-tailed Shrew	0.07	1	0.07	Sample et al. (1996)	as Methyl mercury chloride	Reproduction	Chronic
Aroclor 1242	Mink	0.069	Short-tailed Shrew	0.197	1	0.197	Sample et al. (1996)		Reproduction	Chronic

[1] Concentrations are reported in milligrams per kilogram per day (mg/kg/day).

[2] References:

Agency for Toxic Substances and Disease Registry (ATSDR) 1997. *ATSDR's Toxicological Profiles on CD-ROM.* CRC Press, Inc. Boca Raton, Florida.

California Environmental Protection Agency (Cal/EPA) 2000. *California Wildlife Exposure Factor and Toxicity Database.* Office of Environmental Health and Hazard Assessment, California.

Integrated Risk Information System (IRIS) 2001. Online database access site: www.epa.gov/iris

Sample, B.E., D.M. Opreski, and G.W. Suter. 1996. *Toxicological Benchmarks for Wildlife: 1996 Revision Report.* Report No. ES/ER/TM-86R1. Oak Ridge National Laboratory, Oak Ridge,

United States Environmental Protection Agency (USEPA) 1999a. *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer Review Draft.* Solid Waste and Emergency Response. EPA A530-D-99-001A. August.

Table 4-3. Toxicity Reference Values for Short-Tailed Shrew
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

United States Environmental Protection Agency (USEPA) 1999b. *Volume 2E - Baseline Ecological Risk Assessment: Hudson River Assessment: Hudson River PCBs Reassessment RI/FS.* USEPA Region II, U.S. Army Corps of Engineers, Kansas City District.

ES NOAEL	No observed adverse effect level for the endpoint species.
NV	No value was identified in the literature.
TRV	Toxicity reference value.
TS NOAEL	No observed adverse effect level for the test species.
UF	Uncertainty factor.

Table 4-4. Toxicity Reference Values for Red Tailed Hawk
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[a]pyrene	Mallard duck	36	Mallard duck	36	0.1	3.6	Eisler (1987)	Reduced growth, decreased weight	Survival	Not reported
Benzo[a]pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)		Fertility and malformations	Subchronic
Dibenz[a,h]anthracene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[a]anthracene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Cyanide	Mallard duck	0.53	Mallard duck	0.53	0.1	0.053	Parsons (2000)		Survival	Not reported
Cyanide	Mallard duck	2	Red-tailed hawk	2	1	2	Cal/Ecotox (1999)	as potassium cyanide		
Acetone	Rat	10	Rat	10	0.1	1	Sample et al. (1996)		Liver and kidney damage	Subchronic
Carbon disulfide	Rabbit	11	Rabbit	11	0.1	1.1	IRIS (2001)		Reproduction	Chronic
Trichloroethene	Mouse	0.7	Mouse	0.7	0.1	0.07	Sample et al. (1996)		Hepatotoxicity	Subchronic
Acenapthene	Mouse	1	Mouse	1	0.1	0.1	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Di-n-butyl phthalate	Ringed dove	0.11	Red-tailed hawk	0.11	1	0.11	Sample et al. 1996		Reproduction	Chronic
Phenanthrene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)		Physiological	Chronic
Butyl benzyl phthalate	Rat	159	Rat	159	0.1	15.9	IRIS (2001)		Increased liver to body weight and increased liver to brain ratios	Chronic
Fluorene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)		Physiological	Chronic
Carbazole								No value		
Naphthalene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)		Physiological	Chronic
2-Methylnapthalene	Mouse	1	Mouse	1	0.1	0.1	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylphenol	Rat	50	Red-tailed hawk	50	1	50	IRIS (2001)		Neurotoxicity and Decreased body weight	Subchronic
Ethylbenzene	Rat	97.1	Rat	97.1	0.1	9.71	IRIS (2001)		Liver and kidney toxicity	Subchronic
2,4-Dimethylphenol	Mouse	50	Red-tailed hawk	50	1	50	IRIS (2001)		Hematological and Behavioral	Subchronic
Toluene	Mouse	26	Mouse	26	0.1	2.6	Sample et al. (1996)		Reproduction	Chronic
Phenol	Rat	60	Rat	60	0.1	6	IRIS (2001)		Reduced fetal body weight	Chronic
Bis(2-ethylhexyl)phthalate (	Ringed dove	1.1	Red-tailed hawk	1.1	1	1.1	Sample et al. (1996)		Reproduction	Chronic
Di-n-octyl phthalate	Ringed dove	0.11	Red-tailed hawk	0.11	1	0.11	Sample et al. (1996)	as Di-N-butylphthalate	Reproduction	Chronic
Hexachlorobenzene	Coturnix quail	22.5	Coturnix quail	22.5	0.01	0.225	USEPA 1999	5-day NOAEL	Not reported	Acute
Anthracene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)	Mixed PAHs used	Physiological	Chronic
Tetrachloroethylene	Mouse	1.4	Mouse	1.4	0.1	0.14	Sample et al. (1996)		Heptotoxicity	Subchronic
Pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Dibenzofuran	Red-winged blackbird	21.8	Red-winged blackbird	21.8	0.01	0.218	Parsons (2000)	LC50	Survival	Acute
Benzo[g,h,i]perylene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Indeno[1,2,3-cd]pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[b]fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[k]fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Acenapthylene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)	Mixed PAHs used	Physiological	Chronic
Chrysene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Xylene (total)	Japanese quail	854	Japanese quail	854	0.1	85.4	Parsons (2000)		Survival	5 days
PCBs	Chicken	0.98	Chicken	0.98	1	0.98	Parsons (2000)		Reproduction	Chronic

Table 4-4. Toxicity Reference Values for Red Tailed Hawk
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Aluminum	Ringed dove	109.7	Red-tailed hawk	109.7	1	109.7	Sample et al. (1996)	as Al2(SO4)2	Reproduction	Chronic
Iron	Rat	2550	Rat	2550	0	2.55	Parsons (2000)	LD50	Survival	Not reported
Lead	American kestrel	3.85	Red-tailed hawk	3.85	1	3.85	Sample et al. (1996)	as metallic lead	Reproduction	Chronic
Magnesium		NV		NV		NV		No value		
Manganese	Japanese quail	997	Red-tailed hawk	997	1	997	Sample et al. (1996)	as Mn3O4	Growth, aggressive behavior	Chronic
Mercury	Japanese quail	0.45	Red-tailed hawk	0.45	1	0.45	Sample et al. (1996)	as mercuric chloride	Reproduction	Chronic
Nickel	Mallard duckling	77.4	Red-tailed hawk	77.4	1	77.4	Sample et al. (1996)	as nickel sulfate	Mortality, growth, behavior	Chronic
Potassium		NV		NV		NV		No value		
Silver	Mallard	1780	Mallard	1780	0.1	178	Parsons (2000)		Not reported	Subchronic
Sodium		NV		NV		NV		No value		
Thallium	European Starling	9.5	European Starling	9.5	0.1	0.95	Parsons (2000)		Survival	Acute
Antimony	Mouse	0.125	Mouse	0.125	0.1	0.0125	Sample et al. (1996)	as antimony potassium tartrate	Lifespan; longevity	Chronic
Arsenic	Mallard duck	5.14	Red-tailed hawk	5.1	1	5.1	Sample et al. (1996)	as sodium arsenite	Mortality	Chronic
Barium	1-day old chicks	20.8	Red-tailed hawk	20.8	1	20.8	Sample et al. (1996)	as Barium hydroxide	Mortality	Subchronic
Beryllium	Rat	0.66	Rat	0.66	0.1	0.066	Sample et al. (1996)	as Beryllium sulfate	Longevity; weight loss	Chronic
Cadmium	Mallard duck	1.45	Red-tailed hawk	1.45	1	1.45	Sample et al. (1996)	as Cadmium chloride	Reproduction	Chronic
Chromium	Black duck	1	Red-tailed hawk	1	1	1	Sample et al. (1996)	as Cr+3	Reproduction	Chronic
Cobalt	Rat	5	Rat	5	0.01	0.05	Parsons (2000)		Testicular atrophy and behavior	Chronic
Copper	1 day old chicks	47	Red-tailed hawk	47	1	47	Sample et al. (1996)	as Copper oxide	Growth, mortality	Chronic
Vanadium	Mallard duck	11.4	Red-tailed hawk	11.4	1	11.4	Sample et al. (1996)	as vanadyl sulfate	Mortality, body weight, blood chemistry	Chronic
Zinc	white leghorn hen	14.5	Red-tailed hawk	14.5	1	14.5	Sample et al. (1996)	as Zinc sulfate	Reproduction	Chronic
Calcium		NV		NV		NV		No value		
Selenium	Mallard duck	0.5	Red-tailed hawk	0.5	1	0.5	Sample et al. (1996)	as sodium selenite	Reproduction	Chronic
Aroclor 1254	Ring necked pheasant	0.18	Red-tailed hawk	0.18	1	0.18	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1254	Chicken	0.98	Chicken	0.98	1	0.98	Parsons (2000)		Reproduction	Chronic
Aroclor 1254	Mallard duck	1.45	Mallard duck	1.45	1	1.45	Parsons (2000)		Reproduction	Subchronic
Aroclor 1260	Japanese quail	7.04	Japanese quail	7.04	0.1	0.704	Parsons (2000)	LOAEL	Reproduction	Chronic
Aroclor 1260	Ring necked pheasant	0.18	Red-tailed hawk	0.18	1	0.18	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aroclor 1248	Screech owl	0.4	Screech owl	0.4	0.1	0.04	USEPA (1999b)		Egg production, hatching and fledging success	Chronic
Aroclor 1248	Screech owl	3	Red-tailed hawk	3	1	3	Parsons (2000)		Reproduction	Chronic
Aroclor 1016	Domestic Chicken	1.4	Domestic chicken	1.4	1	1.4	USEPA (1999b)		Not reported	Not reported
Methyl mercury	Mallard duck	0.0064	Red-tailed hawk	0.006	1	0.006	Sample et al. (1996)	as methyl mercury chloride	Reproduction	Chronic
Aroclor 1242	Screech owl	0.41	Red-tailed hawk	0.41	1	0.41	Sample et al. (1996)		Reproduction	Chronic
Total PCBs	Ring necked pheasant	0.18	Red-tailed hawk	0.18	1	0.18	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic

[1] Concentrations are reported in milligrams per kilogram per day (mg/kg/day).

[2] References:

Agency for Toxic Substances and Disease Registry (ATSDR) 1997. *ATSDR's Toxicological Profiles on CD-ROM.* CRC Press, Inc. Boca Raton, Florida.

California Environmental Protection Agency (Cal/EPA) 2000. *California Wildlife Exposure Factor and Toxicity Database.* Office of Environmental Health and Hazard Assessment, California.

Table 4-4. Toxicity Reference Values for Red Tailed Hawk
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Eisler 1987. *Polycylic Aromatic Hydrocarbon Hazards to Fish, Wildlife, and Invertebrates: A Synoptic Review.* Biological Report 85(1.11). U.S. Department of the Interior, Fish and Wildlife Service. May.

Integrated Risk Information System (IRIS) 2000. Online database access site: www.epa.gov/iris

Parsons Engineering Science, Inc. 2000. Decision Process Document, Volume IV of the Program-Wide Generic Work Plans. Installation Restoration Program, 45th Space Wing Facilities at CCAFS, PAFB, and Malabar Annex. Re

Opreski, and G.W. Suter.

Environmental Protection Agency (USEPA) 1999a.

Environmental Protection Agency (USEPA) 1999b.

ES NOAEL	No observed adverse effect level for the endpoint species.
NV	No value was identified in the literature.
TRV	Toxicity reference value.
TS NOAEL	No observed adverse effect level for the test species.
UF	Uncertainty factor.

Table 4-5. Toxicity Reference Values for American Robin
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[a]pyrene	Mallard duck	36	Mallard duck	36	0.1	3.6	Eisler 1987	Reduced growth, decreased weight	Survival	Not reported
Benzo[a]pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)		Fertility and malformations	Subchronic
Dibenz[a,h]anthracene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[a]anthracene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Cyanide	Mallard duck	0.53	Mallard duck	0.53	0.1	0.053	Parsons (2000)		Survival	Not reported
Cyanide	Mallard duck	2	Mallard duck	2	1	2	Cal/Ecotox (1999)	as potassium cyanide	Not reported	Not reported
Acetone	Rat	10	Rat	10	0.1	1	Sample et al. (1996)		Liver and kidney damage	subchronic
Carbon disulfide	Rabbit	11	Rabbit	11	0.1	1.1	IRIS (2001)		Reproduction	Chronic
Trichloroethene	Mouse	0.7	Mouse	0.7	0.1	0.07	Sample et al. (1996)		Hepatotoxicity	subchronic
Acenapthene	Mouse	1	Mouse	1	0.1	0.1	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Di-n-butyl phthalate	Ringed dove	0.11	American Robin	0.11	1	0.11	Sample et al. 1996		Reproduction	Chronic
Phenanthrene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)		Physiological	Chronic
Butyl benzyl phthalate	Rat	159	Rat	159	0.1	15.9	IRIS (2001)		Increased liver to body weight and increased liver to brain ratios	Chronic
Fluorene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)		Physiological	Chronic
Carbazole		NV		NV		NV		No value		
Naphthalene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)		Physiological	Chronic
2-Methylnapthalene	Mouse	1	Mouse	1	0.1	0.1	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylphenol	Rat	50	Rat	50	0.1	5	IRIS (2001)		Neurotoxicity and Decreased body weight	Subchronic
Ethylbenzene	Rat	97.1	Rat	97.1	0.1	9.71	IRIS (2001)		Liver and kidney toxicity	Subchronic
2,4-Dimethylphenol	Mouse	50	Mouse	50	0.1	5	IRIS (2001)		Hematological and Behavioral	Subchronic
Toluene	Mouse	26	Mouse	26	0.1	2.6	Sample et al. (1996)		Reproduction	Chronic
Phenol	Rat	60	Rat	60	0.1	6	IRIS (2001)		Reduced fetal body weight	Chronic
Bis(2-ethylhexyl)phthalate	Ringed dove	1.1	American Robin	1.1	1	1.1	Sample et al. (1996)		Reproduction	Chronic
Di-n-octyl phthalate	Ringed dove	0.11	American Robin	0.11	1	0.11	Sample et al. (1996)	as Di-N-butylphthalate	Reproduction	Chronic
Hexachlorobenzene	Coturnix quail	22.5	Coturnix quail	22.5	0.01	0.225	USEPA (1999)	5-day NOAEL	Not reported	Acute
Anthracene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)	Mixed PAHs used	Physiological	Chronic
Tetrachloroethylene	Mouse	1.4	Mouse	1.4	0.1	0.14	Sample et al. (1996)		Heptotoxicity	Subchronic
Pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Dibenzofuran	Red-winged blackbird	21.8	Red-winged blackbird	21.8	0.01	0.218	Parsons (2000)	LC50	Survival	Acute
Benzo[g,h,i]perylene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Indeno[1,2,3-cd]pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[b]fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[k]fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Acenapthylene	Mallard	1,000	Mallard	1,000	1	1,000	Parsons (2000)	Mixed PAHs used	Physiological	Chronic
Chrysene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Xylene (total)	Japanese quail	854	Japanese quail	854	0.1	85.4	Parsons (2000)		Survival	5 days
PCBs	Chicken	0.98	Chicken	0.98	1	0.98	Parsons (2000)		Reproduction	Chronic
Aluminum	Ringed dove	109.7	American Robin	109.7	1	109.7	Sample et al. (1996)	as Al2(SO4)2	Reproduction	Chronic
Iron	Rat	2,550	Rat	2,550	0.001	2.55	Parsons (2000)	LD50	Survival	Not reported

Table 4-5. Toxicity Reference Values for American Robin
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Lead	Japanese quail	1.13	herbivore/omnivore	1.13	1	1.13	Parsons (2000)		Reproduction	Chronic
Lead	American kestrel	3.85	American Robin	3.85	1	3.85	Sample et al. (1996)	as metallic lead	Reproduction	Chronic
Magnesium		NV		NV		NV		No value		
Manganese	Japanese quail	997	American Robin	997	1	997	Sample et al. (1996)	as Mn3O4	Growth, aggressive behavior	Chronic
Mercury	Japanese quail	0.45	American Robin	0.45	1	0.45	Sample et al. (1996)	as mercuric chloride	Reproduction	Chronic
Nickel	Mallard duckling	77.4	American Robin	77.4	1	77.4	Sample et al. (1996)	as nickel sulfate	Mortality, growth, behavior	Chronic
Potassium		NV		NV		NV		No value		
Silver	Mallard	1,780	Mallard	1,780	0.1	178	Parsons (2000)		Not reported	Subchronic
Sodium		NV		NV		NV		No value		
Thallium	European Starling	9.5	European Starling	9.5	0.1	0.95	Parsons (2000)		Survival	Acute
Antimony	Mouse	0.125	Mouse	0.125	0.1	0.0125	Sample et al. (1996)	as antimony potassium tartrate	Lifespan; longevity	Chronic
Arsenic	Mallard duck	5.14	American Robin	5.1	1	5.14	Sample et al. (1996)	as sodium arsenite	Mortality	Chronic
Barium	1-day old chicks	20.8	American Robin	20.8	1	20.8	Sample et al. (1996)	as Barium hydroxide	Mortality	Subchronic
Beryllium	Rat	0.66	Rat	0.66	0.1	0.066	Sample et al. (1996)	as Beryllium sulfate	Longevity; weight loss	Chronic
Cadmium	Mallard duck	1.45	American Robin	1.45	1	1.45	Sample et al. (1996)	as Cadmium chloride	Reproduction	Chronic
Chromium	Black duck	1	American Robin	1	1	1	Sample et al. (1996)	as Cr+3	Reproduction	Chronic
Cobalt	Rat	5	Rat	5	0.01	0.05	Parsons (2000)		Testicular atrophy and behavior	Chronic
Copper	1 day old chicks	47	American Robin	47	1	47	Sample et al. (1996)	as Copper oxide	Growth, mortality	Chronic
Vanadium	Mallard duck	11.4	American Robin	11.4	1	11.4	Sample et al. (1996)	as vanadyl sulfate	Mortality, body weight, blood chemistry	Chronic
Zinc	White leghorn hen	14.5	American Robin	14.5	1	14.5	Sample et al. (1996)	as Zinc sulfate	Reproduction	Chronic
Calcium		NV		NV		NV		No value		
Selenium	Mallard duck	0.5	American Robin	0.5	1	0.5	Sample et al. (1996)	as sodium selenite	Reproduction	Chronic
Aroclor 1254	Ring necked pheasant	0.18	American Robin	0.18	1	0.18	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1254	Chicken	0.98	Chicken	0.98	1	0.98	Parsons (2000)		Reproduction	Chronic
Aroclor 1254	Mallard duck	1.45	Mallard duck	1.45	1	1.45	Parsons (2000)		Reproduction	Subchronic
Aroclor 1260	Japanese quail	7.04	Japanese quail	7.04	0.1	0.704	Parsons (2000)	LOAEL	Reproduction	Chronic
Aroclor 1260	Ring necked pheasant	0.18	Red-tailed hawk	0.18	1	0.18	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aroclor 1248	Screech owl	0.4	Screech owl	0.4	0.1	0.04	USEPA 1999b		Egg production, hatching success, fledging success	Chronic
Aroclor 1248	Chicken	0.49	herbivore/omnivore	0.49	1	0.49	Parsons (2000)		Reproduction, egg production, hatchability	Not reported
Aroclor 1016	Domestic Chicken	1.4	Domestic chicken	1.4	1	1.4	USEPA 1999b		Not reported	Not reported
Methyl mercury	Mallard duck	0.0064	Red-tailed hawk	0.006	1	0.006	Sample et al. 1996	as methyl mercury chloride	Reproduction	Chronic
Aroclor 1242	Japanese quail	10	herbivore/omnivores	0.0113	1	10	Sample et al. (1996)	LOAEL	Reproduction	45 days
Aroclor 1242	Screech owl	0.41	Red-tailed hawk	0.41	1	0.41	Sample et al. (1996)		Reproduction	Chronic
Total PCBs	Ring necked pheasant	0.18	American Robin	0.18	1	0.18	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Dichloroethanes								No value		

[1] Concentrations are reported in milligrams per kilogram per day (mg/kg/day).

[2] Multiple toxicity values were identified for this constituent; however this is value proposed for use in the BERA.

[2] References:

Agency for Toxic Substances and Disease Registry (ATSDR) 1997. *ATSDR's Toxicological Profiles on CD-ROM.* CRC Press, Inc. Boca Raton, Florida.

California Environmental Protection Agency (Cal/EPA) 2000. *California Wildlife Exposure Factor and Toxicity Database.* Office of Environmental Health and Hazard Assessment, California.

Table 4-5. Toxicity Reference Values for American Robin
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Sample, B.E., D.M. Opreski, and G.W. Suter. 1996. *Toxicological Benchmarks for Wildlife: 1996 Revision Report.* Report No. ES/ER/TM-86R1. Oak Ridge National Laboratory, Oak

United States Environmental Protection Agency (USEPA) 1999a. *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer Review Draft.* Solid Waste and Emergency Response. EPA A530-D-99-001A. August.

United States Environmental Protection Agency (USEPA) 1999b. *Volume 2E - Baseline Ecological Risk Assessment: Hudson River Assessment: Hudson River PCBs Reassessment RI/FS.* USEPA Region II, U.S. Army Corps of Engineers, Kansas City District.

ES NOAEL	No observed adverse effect level for the endpoint species.
NV	No value was identified in the literature.
TRV	Toxicity reference value.
TS NOAEL	No observed adverse effect level for the test species.
UF	Uncertainty factor.

Table 4-6. Toxicity Reference Values for Cottontail Rabbit
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[a]pyrene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)		Reproduction	Chronic
Dibenz[a,h]anthracene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[a]anthracene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Cyanide	Rat	68.7	Cottontail Rabbit	47.4	1	47.4	Sample et al. (1996)	as Potassium cyanide	Reproduction	Chronic
Acetone	Rat	10	Cottontail Rabbit	7.3	1	7.3	Sample et al. (1996)		Liver and kidney damage	Subchronic
Carbon disulfide	Rat	100	Rat	100	1	100	Parsons (2000)	10-day study; during critical lifestage	Gestation, Development	Subchronic
Carbon disulfide	Rabbit	11	Rabbit	11	0.1	1.1	IRIS (2001)		Reproduction	Chronic
Trichloroethene	Mouse	0.7	Cottontail Rabbit	0.278	1	0.278	Sample et al. (1996)		Hepatotoxicity	Subchronic
Acenapthene	Mouse	350	Mouse	350	1	350	Parsons (2000)		Hepatic effects	Chronic
Acenapthene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Di-n-butyl phthalate	Mouse	550	Cottontail Rabbit	219	1	219	Sample et al. 1996		Reproduction	Chronic
Phenanthrene	Mouse	350	Mouse	350	1	350	Parsons (2000)	as Acenaphthene	Hepatotoxicity	Chronic
Phenanthrene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Butyl benzyl phthalate	Rat	159	Rat	159	0.1	15.9	IRIS (2001)		Increased liver to body weight and increased liver to brain ratios	Chronic
Fluorene	Mouse	125	Mouse	125	0.1	12.5	Parsons (2000)	LOAEL	Hematological effects	Chronic
Fluorene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Carbazole		NV		NV		NV		No value		
Naphthalene	Mouse	53	Mouse	53	1	53	Parsons (2000)		Hematocrit changes	Chronic
Naphthalene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylnapthalene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylnapthalene	Mouse	53	Mouse	53	1	53	Parsons (2000)	as Naphthalene	Hematocrit changes	Chronic
2-Methylphenol	Rat	50	Rat	50	1	50	IRIS (2001)		Neurotoxicity and Decreased body weight	Subchronic
Ethylbenzene	Rat	97.1	Rat	97.1	0.1	9.71	IRIS (2001)		Liver and kidney toxicity	Subchronic
2,4-Dimethylphenol	Mouse	50	Mouse	50	0.1	5	IRIS (2001)		Hematological and Behavioral	Subchronic
Toluene	Mouse	26	Cottontail Rabbit	10.3	1	10.3	Sample et al. (1996)		Reproduction	Chronic
Phenol	Rat	60	Rat	60	0.1	6	IRIS (2001)		Reduced fetal body weight	Chronic
Bis(2-ethylhexyl)phthalate	Mouse	18.3	Cottontail Rabbit	7.3	1	7.3	Sample et al. (1996)		Reproduction	Chronic
Bis(2-ethylhexyl)phthalate	Mouse	13	Mouse	13	0.1	1.3	Parsons (2000)		Reproduction	Chronic
Di-n-octyl phthalate	Mouse	550	Cottontail Rabbit	219	1	219	Sample et al. (1996)	as Di-N-butylphthalate	Reproduction	Chronic
Hexachlorobenzene	Rat	1,600	Rat	1,600	0.1	160	USEPA 1999		Not reported	Chronic
Anthracene	Mouse	1,000	Mouse	1,000	1	1,000	Parsons (2000)		Heptotoxicity	Chronic
Anthracene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Tetrachloroethylene	Mouse	1.4	Cottontail Rabbit	0.56	1	0.56	Sample et al. (1996)		Heptotoxicity	Subchronic
Pyrene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Dibenzofuran	Mouse	0.01	Mouse	0.01	1	0.01	Parsons (2000)		Reproduction	Chronic
Benzo[g,h,i]perylene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Indeno[1,2,3-cd]pyrene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic

Table 4-6. Toxicity Reference Values for Cottontail Rabbit
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[b]fluoranthene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Fluoranthene	Mouse	125	Mouse	125	0.1	12.5	Parsons (2000)	LOAEL	Renal effects	Chronic
Fluoranthene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[k]fluoranthene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Acenapthylene	Mouse	350	Mouse	350	1	350	Parsons (2000)	as Acenaphthene	Hepatic effects	Chronic
Acenapthylene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Chrysene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Xylene (total)	Mouse	2.1	Cottontail Rabbit	0.835	1	0.835	Sample et al. (1996)	mixed isomers	Reproduction	Chronic
PCBs	Mink	0.14	Cottontail Rabbit	0.022	1	0.022	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aluminum	Mouse	1.93	Cottontail Rabbit	0.767	1	0.767	Sample et al. (1996)	as AlCl3	Reproduction	Chronic
Iron	Rat	2,550	Rat	2,550	0.01	25.5	Parsons (2000)	LD50	Survival	Not reported
Lead	Rat	8	Cottontail Rabbit	5.88	1	5.88	Sample et al. (1996)	as lead acetate	Reproduction	Chronic
Magnesium		NV		NV		NV		No value		
Manganese	Rat	88	Cottontail Rabbit	65	1	65	Sample et al. (1996)	as Mn3O4	Reproduction	Chronic
Mercury	Mink	1	Cottontail Rabbit	0.96	1	0.96	Sample et al. (1996)	as mercuric chloride	Mortality, liver and kidney histology, reproduction	Chronic
Nickel	Rat	40	Cottontail Rabbit	29.4	1	29.4	Sample et al. (1996)	as nickel sulfate hexahydrate	Reproduction	Chronic
Potassium		NV		NV		NV		No value		
Silver	Rat	18.2	Rat	18.2	1	18.2	ATSDR (1997)	LOAEL	Decreased activity	Chronic
Silver	Rat	222	Rat	222	1	222	Parsons (2000)		Weight loss	Chronic
Sodium		NV		NV		NV		No value		
Thallium	Rat	0.0074	Cottontail Rabbit	0.005	1	0.005	Sample et al. (1996)	as thallium sulfate	Reproduction	Subchronic
Antimony	Mouse	0.125	Cottontail Rabbit	0.05	1	0.05	Sample et al. (1996)	as antimony potassium tartrate	Lifespan; longevity	Chronic
Arsenic	Mouse	0.126	Cottontail Rabbit	0.05	1	0.05	Sample et al. (1996)	as arsenite	Reproduction	Chronic
Arsenic	Mouse	5	Mouse	5	0.1	0.5	Parsons (2000)	LOAEL	Reproduction	Chronic
Barium	Rat	5.1	Cottontail Rabbit	4	1	4	Sample et al. (1996)	as Barium chloride	Growth, hypertension	Chronic
Beryllium	Rat	0.66	Cottontail Rabbit	0.49	1	0.49	Sample et al. (1996)	as Beryllium sulfate	Longevity; weight loss	Chronic
Cadmium	Rat	1	Cottontail Rabbit	0.709	1	0.709	Sample et al. (1996)	as Cadmium chloride	Reproduction	Chronic
Chromium	Rat	3.28	Cottontail Rabbit	2.41	1	2.41	Sample et al. (1996)	as Cr+6	Body weight and food consumption	Chronic
Cobalt	Rat	5	Rat	5	1	5	Parsons (2000)		Testicular atrophy and behavior	Chronic
Copper	Mink	11.7	Cottontail Rabbit	11.2	1	11.2	Sample et al. (1996)	as Copper sulfate	Reproduction	Chronic
Copper	Rat	14	Rat	14	0.1	1.4	Parsons (2000)		Gastrointestinal efects	Chronic
Vanadium	Rat	0.21	Cottontail Rabbit	0.143	1	0.143	Sample et al. (1996)	as metavanadate (NaVO3)	Reproduction	Chronic
Zinc	Rat	160	Cottontail Rabbit	117.6	1	117.6	Sample et al. (1996)	as Zinc oxide	Reproduction	Chronic
Calcium		NV		NV		NV		No value		
Selenium	Rat	0.2	Cottontail Rabbit	0.147	1	0.147	Sample et al. (1996)	as Selenate (SeO4)	Reproduction	Chronic
Aroclor 1254	Mink	0.14	Cottontail Rabbit	0.022	1	0.022	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1260	Mink	0.14	Cottontail Rabbit	0.022	1	0.022	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aroclor 1248	Rhesus monkey	0.01	Cottontail Rabbit	0.014	1	0.014	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1016	Mink	1.37	Cottontail Rabbit	1.31	1	1.31	Sample et al. (1996)		Reproduction	Chronic
Methyl mercury	Rat	0.032	Cottontail Rabbit	0.024	1	0.024	Sample et al. (1996)	as Methyl mercury chloride	Reproduction	Chronic
Aroclor 1242	Mink	0.069	Cottontail Rabbit	0.066	1	0.066	Sample et al. (1996)		Reproduction	Chronic

[1] Concentrations are reported in milligrams per kilogram per day (mg/kg/day).

Table 4-6. Toxicity Reference Values for Cottontail Rabbit
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

[2] References:

Agency for Toxic Substances and Disease Registry (ATSDR) 1997. *ATSDR's Toxicological Profiles on CD-ROM.* CRC Press, Inc. Boca Raton, Florida.

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and G.W. Suter. 1996.

Protection Agency (USEPA)

1999a. *Screening Level*

Protection Agency (USEPA)

1999b. *Volume 2E - Baseline*

ES NOAEL	No observed adverse effect level for the endpoint species.
NV	No value was identified in the literature.
TRV	Toxicity reference value.
TS NOAEL	No observed adverse effect level for the test species.
UF	Uncertainty factor.

Table 4-7. Constituent Effects Benchmarks for Fish
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[a]pyrene	Not listed	14	Not listed	14	1	14	USEPA (1999a)	Calculated using Great Lakes Water Quality Initiative Tier II methodology. (USEPA 1996)		
Benzo[a]pyrene	Bluegill	1	Bluegill	1	0.01	0.01	Parsons (2000)	LC87 - Benzo(a)anthracene as surrogate	Mortality	Chronic
Benzo[a]pyrene	Rainbow trout	50	Rainbow trout	50	0.1	5	Hannah et al. (1982)		Hatching success	Chronic
Benzo[a]pyrene	Rainbow trout	0.08	Rainbow trout	0.08	0.1	0.008	Hannah et al. (1982)	Value is LOAEL	Growth (length)	Chronic
Dibenz[a,h]anthracene	Bluegill	1	Bluegill	1	0.01	0.01	Parsons (2000)	LC87 - Benzo(a)anthracene as surrogate	Mortality	Chronic
Dibenz[a,h]anthracene	Not listed	27	Not listed	27	1	27	USEPA (1999a)	Benzo(a)anthracene used as surrogate		
Benzo[a]anthracene	Bluegill	1	Bluegill	1	0.01	0.01	Parsons (2000)	LC87	Mortality	Chronic
Benzo[a]anthracene	Not listed	27	Not listed	27	1	27	USEPA (1999a)	Suter and Tsao (1996) Calculated using Great Lakes Water Quality Initiative Tier II methodology.		
Cyanide	Not listed	5.2	Not listed	0.0052	1	0.0052	USEPA (1999a)	USEPA (1999). Free cyanide		
Acetone	Not listed	1,500,000	Not listed	1,500,000	1	1,500,000	USEPA (1999a)	Suter and Tsao (1996) Calculated using Great Lakes Water Quality Initiative Tier II methodology.		
Carbon disulfide	Rabbit	11	Rabbit	11	1	11	IRIS (2001)			
Trichloroethene	Mouse	0.7	Mouse	0.7	0.1	0.07	Sample et al. (1996)			
Acenapthene	Fathead minnow	0.608	Fathead minnow	0.608	0.01	0.00608	Parsons (2000)	LC50	Mortality	Acute (96-hour)
Di-n-butyl phthalate		NV		NV		NV		No value		
Phenanthrene	Rainbow Trout	0.019	Rainbow Trout	0.019	1	0.019	Parsons (2000)	NOEC	Growth	Chronic
Phenanthrene	Rainbow Trout Fry	38	Rainbow Trout Fry	38	1	19	Passino-Reader et al. (1995)		Growth	Chronic
Butyl benzyl phthalate	Rat	159	Rat	159	0.1	15.9	IRIS (2001)			
Fluorene	Bluegill	0.5	Bluegill	0.5	0.01	0.005	Parsons (2000)	CL12	Mortality	30 day
Carbazole		NV		NV		NV		No value		
Naphthalene	Western mosquitofish	150	Western mosquitofish	150	0.01	1.5	Parsons (2000)	LC50	Mortality	Acute (96-hour)
2-Methylnaphthalene	Rainbow Trout	1.46	Rainbow Trout	1.46	0.01	0.0146	Parsons (2000)	LC50	Survival	Acute
2-Methylphenol	Fathead minnow	2.57	Fathead minnow	2.57	0.01	0.0257	Parsons (2000)	LOEC (for 4-Methylphenol)	Growth	Acute
Ethylbenzene		NV		NV		NV		No value		
2,4-Dimethylphenol	Mouse	50	Mouse	50	0.1	5	IRIS (2001)			
Toluene	Zebra danio	24	Zebra danio	24	0.01	0.24	Parsons (2000)	LC50	Survival	Acute
Phenol	Rat	60	Rat	60	0.1	6	IRIS (2001)			
Bis(2-ethylhexyl)phthalate	Channel catfish	100	Channel catfish	100	0.01	1	Parsons (2000)	LC50	Survival	Acute
Di-n-octyl phthalate	Channel catfish	0.69	Channel catfish	0.69	0.01	0.0069	Parsons (2000)	LC50	Survival	Acute
Hexachlorobenzene	Bluegill	12	Bluegill	12	0.01	0.12	Parsons (2000)	LC50	Survival	Acute
Hexachlorobenzene	Not listed	3680	Not listed	3680	1	3680	USEPA (1999a)	USEPA 1987		
Anthracene	Bluegill	0.00127	Bluegill	0.00127	0.01	0.0000127	Parsons (2000)	LC50	Mortality	
Tetrachloroethylene (PCE	Mouse	1.4	Mouse	1.4	0.1	0.14	Sample et al. (1996)			
Pyrene	Bluegill	1	Bluegill	1	0.01	0.01	Parsons (2000)	LC87 - Benzo(a)anthracene as surrogate	Mortality	Chronic
Dibenzofuran		NV		NV		NV		No value		
Benzo[g,h,i]perylene	Bluegill	1	Bluegill	1	0.01	0.01	Parsons (2000)	LC87 - Benzo(a)anthracene as surrogate	Mortality	Chronic
Indeno[1,2,3-cd]pyrene	Bluegill	1	Bluegill	1	0.01	0.01	Parsons (2000)	LC87 - Benzo(a)anthracene as surrogate	Mortality	Chronic
Indeno[1,2,3-cd]pyrene	Not listed	27	Not listed	27	1	27	USEPA (1999a)	Benzo(a)anthracene used as surrogate		
Benzo[b]fluoranthene	Bluegill	1	Bluegill	1	0.01	0.01	Parsons (2000)	LC87 - Benzo(a)anthracene as surrogate	Mortality	Chronic
Benzo[b]fluoranthene	Not listed	27	Not listed	27	1	27	USEPA (1999a)	Benzo(a)anthracene used as surrogate		
Fluoranthene	Channel catfish	0.036	Channel catfish	0.036	0.01	0.00036	Parsons (2000)	LC50	Mortality	Acute (96-hour)
Benzo[k]fluoranthene	Bluegill	1	Bluegill	1	0.01	0.01	Parsons (2000)	LC87 - Benzo(a)anthracene as surrogate	Mortality	Chronic
Benzo[k]fluoranthene	Not listed	27	Not listed	27	1	27	USEPA (1999a)	Benzo(a)anthracene used as surrogate		
Acenapthylene	Bluegill	0.5	Bluegill	0.5	0.01	0.005	Parsons (2000)	LC50	Survival	Acute

Table 4-7. Constituent Effects Benchmarks for Fish
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Chrysene	Striped bass	0.000843	Striped bass	0.000843	0.01	8.43E-06	Parsons (2000)	LC50	Mortality	Acute (96-hour)
Chrysene	Not listed	27	Not listed	27	1	27	USEPA (1999a)	Benzo(a)anthracene used as surrogate		
Xylene (total)	Crescent perch	89	Crescent perch	89	0.01	0.89	Parsons (2000)	mixed isomers - LC50	Mortality	Acute (96-hour)
PCBs		NV		NV		NV		No value		
Aluminum	Western mosquitofish	271	Western mosquitofish	271	0.01	2.71	Parsons (2000)	LC50	Mortality	Acute (96-hour)
Aluminum	Fathead minnow	0.087	Fathead minnow	0.087	1	0.087	USEPA (1999a)	USEPA 1988		
Iron	Fathead minnow	1.5	Fathead minnow	1.5	1	1.5	Parsons (2000)	NOEC	Mortality, growth, reproduction	Chronic
Lead	Snake-head catfish	58.5	Snake-head catfish	58.5	0.01	0.585	Parsons (2000)	LC50	Mortality	Chronic
Lead	Not listed	0.0025	Not listed	0.0025	1	0.0025	USEPA (1999a)	USEPA (1999). Calculated as exp(mc[ln(hardness)]+bc) where mc = 1.273 and bc = -4.705. Criterion was converted to dissolved concentration using the following conversion: 1.46203-[(ln hardness)*(0.14572)]. Hardness = 100 mg/L.		
Magnesium		NV		NV		NV		No value		
Manganese	Silverside	50	Silverside	50	0.01	0.5	Parsons (2000)	LOEC	Mortality	4 day
Mercury	Snake-head catfish	1.57	Snake-head catfish	1.57	0.1	0.157	Parsons (2000)	LC50	Mortality	Chronic
Nickel	Rock bass	2.48	Rock bass	2.48	0.01	0.0248	Parsons (2000)	LC50	Mortality	4 day
Nickel	Not listed	0.052	Not listed	0.052	1	0.052	USEPA (1999a)	USEPA (1999). Calculated as exp(mc[ln(hardness)]+bc) where mc = 0.8460 and bc = 0.0584. Criterion was converted to dissolved concentration using a conversion factor of 0.997. Hardness = 100 mg/L.		
Potassium		NV		NV		NV		No value		
Silver	Fathead minnow	0.0004	Fathead minnow	0.0004	1	0.0004	Parsons (2000)	MATC	Mortality	Chronic
Silver	Not listed	0.00012	Not listed	0.00012	1	0.00012	USEPA (1999a)	USEPA (1987)		
Sodium								No value		
Thallium	Tidewater silversides	31	Tidewater silversides	31	0.01	0.31	Parsons (2000)	LC50	Mortality	Actue (96-hour)
Thallium	Not listed	0.04	Not listed	0.04	1	0.04	USEPA (1999a)	USEPA (1987)		
Antimony	Fathead minnow	4.5	Fathead minnow	4.5	1	4.5	Parsons (2000)	NOEC	Mortality	28 day
Antimony	Not listed	0.03	Not listed	0.03	1	0.03	USEPA (1999a)	USEPA 1987		
Arsenic	Pink salmon	2.5	Pink salmon	2.5	1	2.5	Parsons (2000)	LC50	Mortality	Acute (96-hour)
Arsenic	Not listed	0.15	Not listed	0.15	1	0.15	USEPA (1999a)	Chronic criterion - trivalent As		
Barium	Sheepshead minnow	500	Sheepshead minnow	500	0.01	5	Parsons (2000)	LC50	Mortality	Acute (96-hour)
Barium	Not listed	0.004	Not listed	0.004	1	0.004	USEPA (1999a)	Suter and Tsao (1996). Calculated using Great Lakes Water Quality Initiative Tier II methodology.		
Beryllium	Rainbow trout	0.38	Rainbow trout	0.38	0.01	0.0038	Parsons (2000)	LC50	Mortality	28 day
Beryllium	Not listed	0.00066	Not listed	0.00066	1	0.00066	USEPA (1999a)	Suter and Tsao (1996). Calculated using Great Lakes Water Quality Initiative Tier II methodology.		
Cadmium	Snake-head catfish	3.5	Snake-head catfish	3.5	0.01	0.035	Parsons (2000)	LOEC	Growth	13 day
Chromium	Indian catfish	0.01	Indian catfish	0.01	1	0.01	Parsons (2000)	LOEC	Growth	20 day
Chromium	Not listed	0.011	Not listed	0.011	1	0.011	USEPA (1999a)	USEPA (1999). Hexavalent chromium		
Cobalt	Goldfish	0.81	Goldfish	0.81	0.01	0.0081	Parsons (2000)	LC50	Mortality	7 day
Copper	Western mosquitofish	0.056	Western mosquitofish	0.056	0.01	0.00056	Parsons (2000)	LC50	Mortality	Acute (96-hour)

Table 4-7. Constituent Effects Benchmarks for Fish
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Copper	Not listed	0.009	Not listed	0.009	1	0.009	USEPA (1999a)	USEPA (1999). Calcualted as exp(mc[ln(hardness)+bc) where mc = 0.8545 and bc = -1.702. Criterion was converted to dissolved concentration using a conversion factor of 0.960. An assumed hardness of 100 mg/L and a conversion from mg/L to ug/L were applied.		
Vanadium	Fathead minnow	0.12	Fathead minnow	0.12	1	0.12	Parsons (2000)	NOEC	Growth	Chronic
Zinc	Fathead minnow	0.112	Fathead minnow	0.112	1	0.112	Parsons (2000)	MATC	Reproduction	Chronic
Zinc	Not listed	0.118	Not listed	0.118	1	0.118	USEPA (1999a)	USEPA (1999). Calculated: = exp(mc[ln(hardness)]+bc) where mc = 0.8473 and bc = 0.884. Converted to dissolved fraction using a conversion factor of 0.986.		
Calcium								No value		
Selenium	Fathead minnow	2.9	Fathead minnow	2.9	0.01	0.029	Parsons (2000)	LC50	Mortality	7 day
Selenium	Not listed	0.005	Not listed	0.005	1	0.005	USEPA (1999a)	USEPA (1999)		
Aroclor 1254	Channel catfish	0.303	Channel catfish	0.303	0.01	0.00303	Parsons (2000)	LC50	Mortality	10 days
Aroclor 1254	Brook trout fry	71	Brook trout fry	71	1	71	USEPA (1999b)		Fry mortality	118 days
Aroclor 1260	Channel catfish	0.535	Channel catfish	0.535	0.01	0.00535	Parsons (2000)	LC50	Mortality	10 days
Aroclor 1260	Brook trout fry	71	Brook trout fry	71	1	71	USEPA (1999b)	as Aroclor 1254	Fry mortality	118 days
Aroclor 1248	Rainbow trout	0.054	Rainbow trout	0.054	0.01	0.00054	Parsons (2000)	LC50	Mortality	5 days
Aroclor 1248	Brook trout fry	71	Brook trout fry	71	1	71	USEPA (1999b)	as Aroclor 1254	Fry mortality	118 days
Aroclor 1016	Adult pinfish	170	Adult pinfish	170	0.1	17	USEPA (1999b)		Adult mortality	Subchronic
Methyl mercury	Not listed	0.0000028	Not listed	0.0000028	1	0.0000028	USEPA (1999a)	Suter and Tsao (1996). Calculated using Great Lakes Water Quality Initiative Tier II methodology.		
Aroclor 1242	Adult fathead minnow	436	Adult fathead minnow	436	1	436	USEPA (1999b)		Adult mortality	Chronic

[1] Concentrations are reported in milligrams per liter (mg/L).

[2] References:

Agency for Toxic Substances and Disease Registry (ATSDR) 1997. *ATSDR's Toxicological Profiles on CD-ROM.* CRC Press, Inc. Boca Raton, Florida.

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ES NOAEL	No observed adverse effect level for the endpoint species.
NV	No value was identified in the literature.
TRV	Toxicity reference value.
TS NOAEL	No observed adverse effect level for the test species.
UF	Uncertainty factor.

Table 4-8. Toxicity Reference Values for Fish Based on Body Burden
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Body Burden NOAEL (mg/kg)		
	Trophic Level 3 Fish [1]	Trophic Level 4 Fish [1]	Fish Criteria [2]
Aroclor 1016	1.5	1.5	0.11
Aroclor 1242	1.5	1.5	0.11
Aroclor 1248	1.5	1.5	0.11
Aroclor 1254	1.5	1.5	0.11
Aroclor 1260	1.5	1.5	0.11
Dioxins (Fish TEQ)	0.00029	0.00029	0.000003

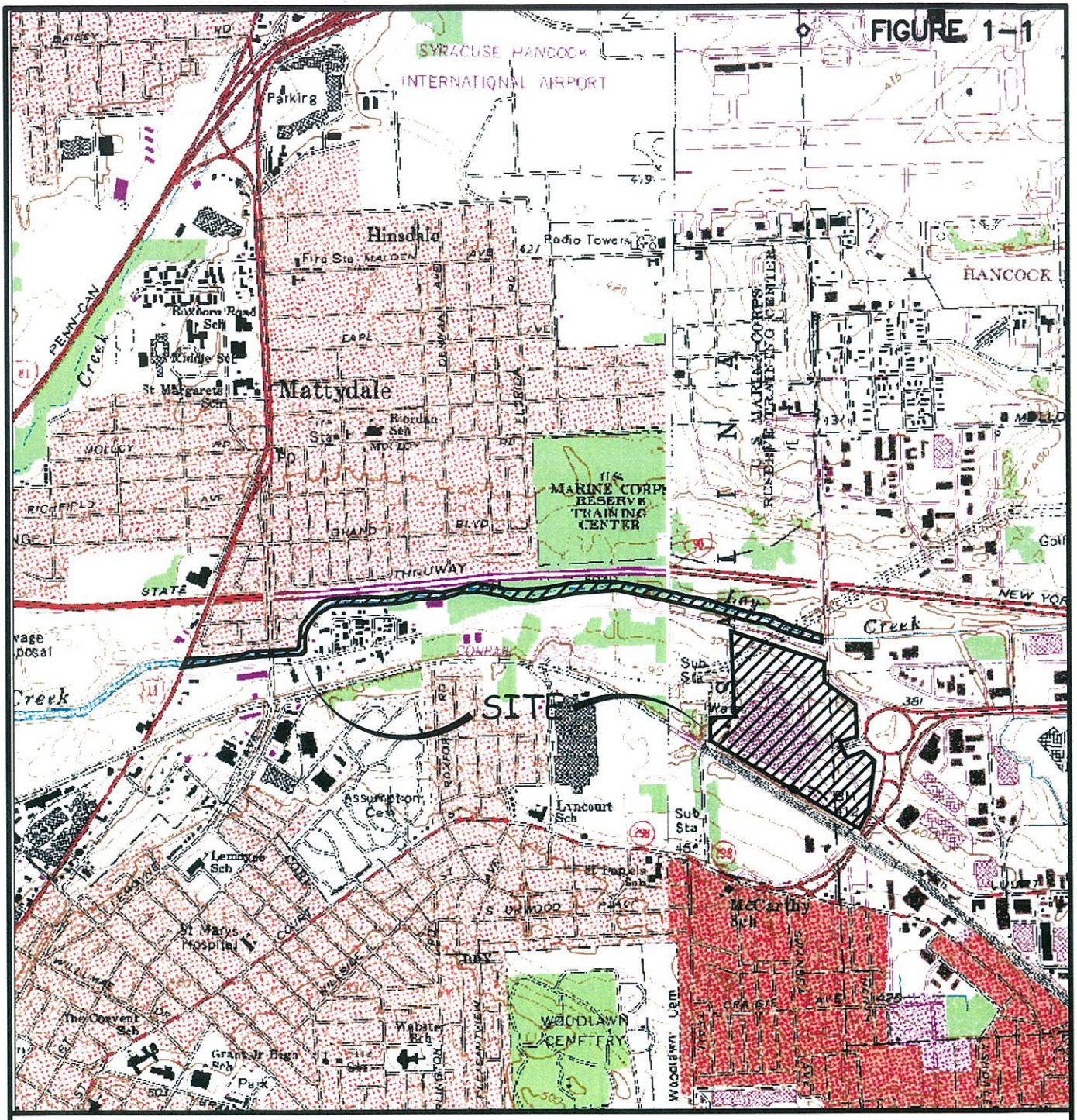
[1] USEPA 1999. *Phase 2 Report - Review Copy. Further Site Characterization and Analysis. Volume 2E - Baseline Ecological Risk Assessment Hudson River PCBs Reassessment RI/FS.*

[2] Source: Newell, A.J., D.W. Johnson, and L.K. Allen. 1987. *Niagara River Biota Contamination Project: Fish Flesh Criteria for Piscivorous Wildlife.* Technical Report 87-3. NYSDEC.

FIGURES

MWH I:\DIV71\PROJECTS\4966\21535\5_RPTS\ECO\BERA\072.DWG

FIGURE 1-1



GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

SITE LOCATION



QUADRANGLE LOCATION

1 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 5 0 1 KILOMETER

FILE NO. 4966.21535.002

June 2001

SCALE: 1:24000

O'BRIEN & GERE ENGINEERS INC.

PLOT DATE: 5/22/01

FIGURE 1-2

LEY CREEK

LEY CREEK PCB DREDGINGS SITE

TOWNLINE ROAD

FACTORY AVENUE

OUTFALL 003

OUTFALL 004

ROUTE 298

SEWER RELIEF INTERCEPTOR TRENCH W/ SHEET PILE & SLURRY WALLS

FORMER TEMP. SOIL STORAGE CELLS(3)

CLOSED SURFACE IMPOUNDMENT NO. 2

CLOSED SURFACE IMPOUNDMENT NO. 1

HISTORICAL LANDFILL

FORMER PCB-CONTAMINATED SOILS CONTAINMENT CELL

CONCRETE DEBRIS

CONCRETE

G.M. CIRCLE

PARKING

PARKING

ADMINISTRATION OFFICE

PARKING LOT

SOLVENT RECOVERY TRENCHES

CONCRETE STORAGE PAD

3

GATE HOUSE

PARKING LOT

PAINT STORAGE

FORMER 8,000 GAL UNDERGROUND THINNER/ REDUCER TANKS

TRANSFORMERS

PLANT SUBSTATION

SWITCH HOUSE

ACID-ALKALI BUNKER (IWT SUMP)

1

MANUFACTURING BUILDING

FORMER FIRE WATER TOWER

PARKING

PUMP HOUSE

WATER STORAGE TANK

MOLD STORAGE BUILDING (FORMER TANK FARM BUILDING)

POLYPROPYLENE STORAGE SILOS

2

BULK HANDLING BUILDING

INACTIVE LESS-THAN-90-DAY CONTAINER STORAGE PAD (CLOSURE PENDING)

INDUSTRIAL WASTE TREATMENT (IWT) PLANT

PUMP HOUSE TO IWT

POWER HOUSE

CONCRETE COAL SILOS

MISCELLANEOUS STORAGE AREA (EMPTY)

INACTIVE MISCELLANEOUS STORAGE

PENN CENTRAL RAILROAD (99 FT. WIDE)

FORMER DIESEL/GASOLINE UST (3,000 GAL)

FORMER GASOLINE UST (3,000 GAL)

COAL/ASH HOPPER SYSTEM

NATURAL GAS BUILDING

LEGEND

- PROPERTY LINE
- TREE LINE
- APPROX. LOCATION
- FENCE
- (1) ORIGINAL BUILDING – CONSTRUCTED IN 1952
- (2) ADDITIONS–CONSTRUCTED IN 1965
- (3) ADDITION–CONSTRUCTED IN 1974 – 1975

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

FACILITY PLAN

0 250 500

SCALE IN FEET

FILE NO. 4966.21535.091

June 2001

O'BRIEN & GERE ENGINEERS INC.

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PLOT DATE: 5/22/01

P.
K

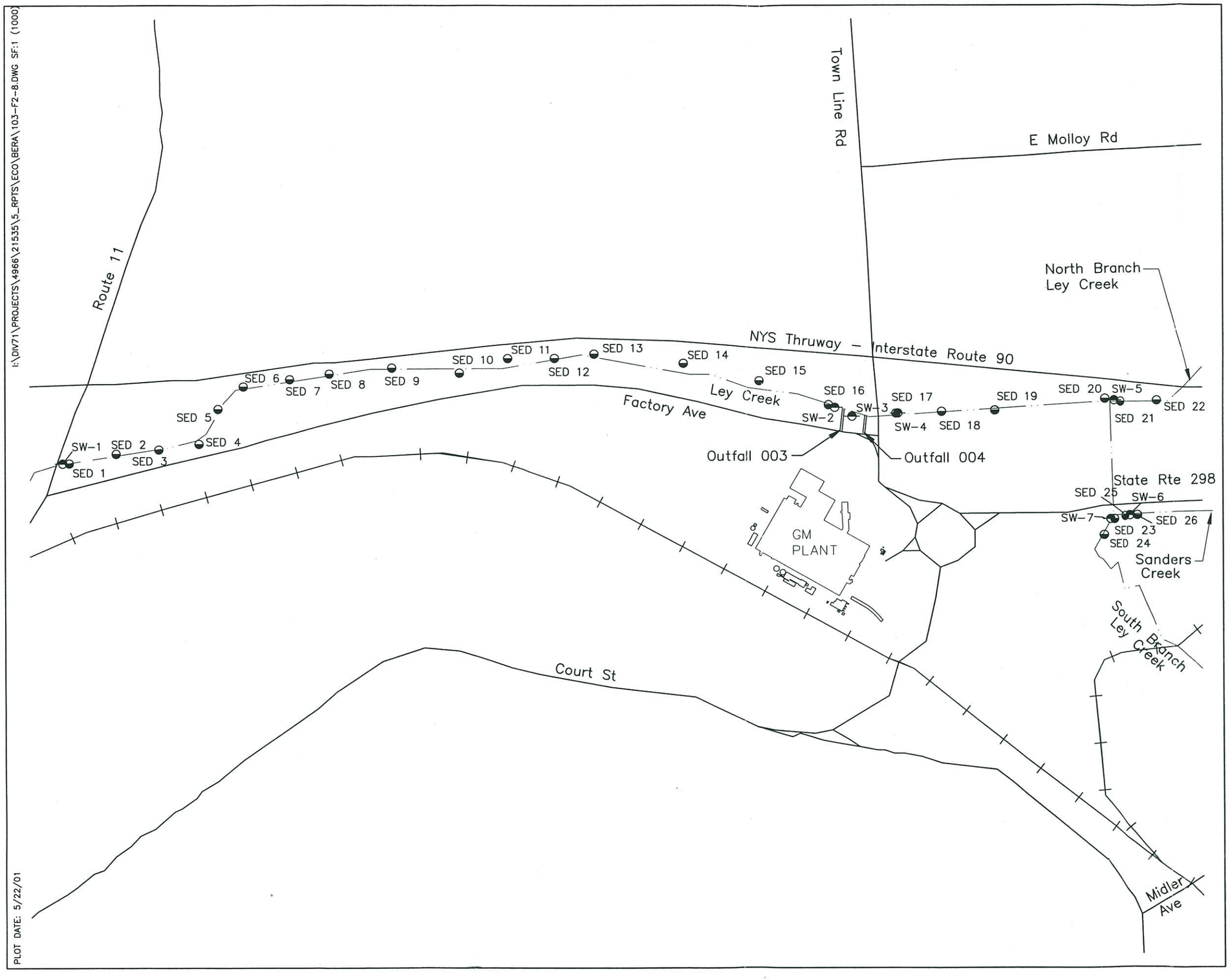
SURFACE SOIL
SAMPLE LOCATIONS

FILE NO.
4966.21535.200

DATE
JUNE 2001

2-1

FIGURE 2-2



LEGEND

- SEDIMENT CORE SAMPLE LOCATION
- SURFACE WATER SAMPLE LOCATION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

1998/1999 LEY CREEK SURFACE WATER AND SEDIMENT / SAMPLING LOCATION PLAN

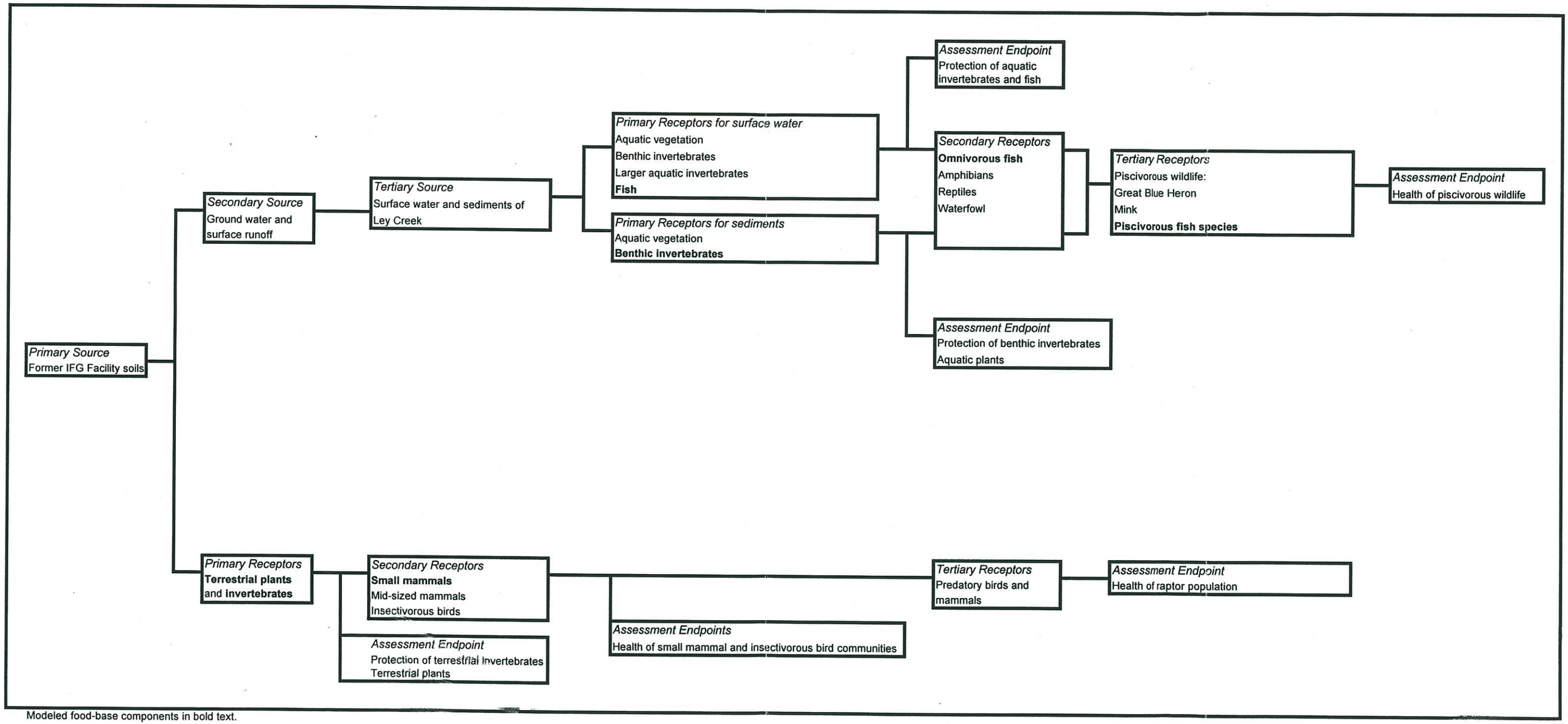
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SCALE IN FEET

FILE NO. 4966.21535.138
June 2001

O'BRIEN & GERE
ENGINEERS INC.

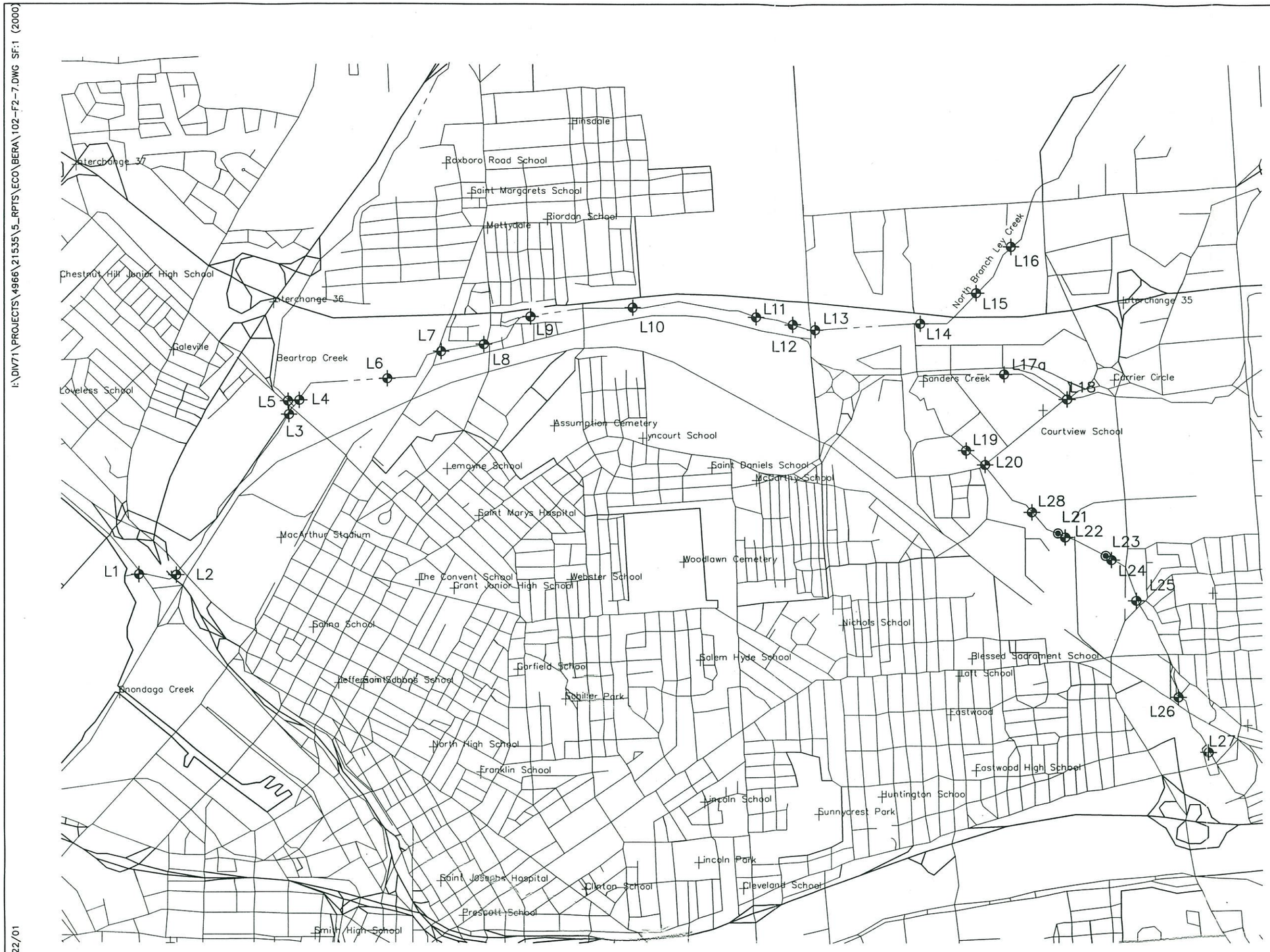
Figure 2-3
Former IFG Facility and Ley Creek Deferred Media
Baseline Ecological Risk Assessment Work Plan
Exposure Pathway Site Model



Modeled food-base components in bold text.

expathfig.XLS
6/15/01

FIGURE 3-1



LEGEND

27 ⌖ SEDIMENT SAMPLE LOCATION

21 ◉ SURFACE WATER SAMPLE LOCATION

GENERAL MOTORS CORP.
SYRACUSE, NEW YORK

1996 NYSDEC LEY CREEK SURFACE WATER AND SEDIMENT SAMPLING LOCATION PLAN

0 2000 4000
SCALE IN FEET

FILE NO. 4966.21535.102
June 2001

O'BRIEN & GERE
ENGINEERS INC.

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PLOT DATE: 5/22/01

ATTACHMENT A

PFD calculations for additional receptors

Attachment A
List of Tables

A-1 Ley Creek Surface Water Detections – Comparison to Screening Values for Assessment of Potential Impacts to Fish
A-2 Ley Creek Sediment Detections – Comparison to Screening Values for Assessment of Potential Impacts to Fish
A-3 Plant Uptake Factors from Soil and Sediment
A-4 Life History Information for the Food Chain Model – Additional Receptors
A-5 Food Chain Model Calculations for Additional Receptors
A-6 Toxicity Reference Values for American Robin
A-7 Toxicity Reference Values for Cottontail Rabbit
A-8 Hazard Quotient Calculations for Additional Terrestrial Receptors

Table A-1. Ley Creek Surface Water Detections - Comparison to Screening Values for Assessment of Potential Impacts to Fish
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Minimum Concentration (µg/l)	Maximum Concentration (µg/l)	Maximum Qualifier	Mean Concentration (µg/l)	Detection Frequency	Minimum Screening Value (µg/l)	Screening Value Source	6NYSAWQS&GV (1998) ug/L		NAWQC USEPA (1999) Freshwater CCC µg/L	USEPA (1996) ug/L	Suter and Tsao (1996) ug/L (Tier II, Secondary Chronic values)
								Value	NYS Notes			
Aluminum	129	129		130	1/1	87	USEPA (1999)	100	A(C) Standard	87	NA	NA
Antimony	1.5	1.8	J	7.2	2/5	3.0	NYS (1998)	3.0	H(WS) Standard	NA	NA	31
Barium	66	66	J	66	1/1	3.9	USEPA (1996)	1,000	H(WS) Standard	NA	3.9	5,000
Beryllium	0.41	0.41	J	0.41	1/1	7.6	Suter and Tsao (1996)	1,100	hardness > 75ppm	NA	NA	7.6
Calcium	139,000	139,000		140,000	1/1	NA	NAP	NA	NA	NA	NA	NA
Chromium	5.0	7.4	J	6.3	5/5	11.0	USEPA (1999)	151	A(A) Standard Hardness DEP.	11	NA	42
Copper	2.9	8.7	J	5.1	5/5	5.0	Suter and Tsao (1996)	19	A(C) Standard Hardness DEP.	9.0	NA	5.0
Iron	430	430		430	1/1	300	NYS (1998)	300	A(C) Standard	1,000	NA	NA
Lead	2.3	4.0	J	2.9	3/5	10	NYS (1998)	10	A(C) Standard; Hardness Dep	NA	NA	NA
Nickel	1.0	11	J	4.8	5/5	29	Suter and Tsao (1996)	108	A(C) Standard Hardness DEP.	NA	NA	29
Potassium	2,650	2,650	J	2,700	1/1	NA	NAP	NA	NA	NA	NA	NA
Sodium	102,000	102,000		100,000	1/1	20,000	NYS (1998)	20,000	H(WS) Standard	NA	NA	NA
Zinc	11	33		20	5/5	58.9	Suter and Tsao (1996)	173	A(C) Standard Hardness DEP.	120	NA	58.9
Di-n-octyl phthalate	10	10	J	8.0	3/5	30	Suter and Tsao (1996)	50	H(WS) Guidance	NA	NA	30
Magnesium	24,900	24,900		25,000	1/1	35,000	NYS (1998)	35,000	H(WS) Standard	NA	NA	NA
Manganese	71	71		71	1/1	80	USEPA (1996)	300	E, Standard	NA	80	NA
Methylene chloride	0.20	0.20	J	3.8	1/4	5.0	NYS (1998)	5.0	H(WS) Standard	NA	NA	430
Acetone	2.0	2.0	J	4.3	1/4	50	NYS (1998)	50	H(WS) Guidance	NA	NA	NA
Chloromethane	0.20	0.20	J	4.2	1/6	5.0	NYS (1998)	5.0	H(WS) Guidance	NA	NA	NA
cis-1,2-Dichloroethene	0.70	2.0	J	1.4	4/4	5.0	NYS (1998)	5.0	H(WS) Standard	NA	NA	NA
Trichloroethene	0.90	1.0	J	2.0	3/4	5.0	NYS (1998)	5.0	H(WS) Standard	NA	NA	75
Vinyl chloride	0.10	0.10	J	3.8	1/4	0.30	NYS (1998)	0.30	H(WS) Guidance	NA	NA	9.2

Notes:

CCC = Criteria continuous concentration .

J = Estimated value.

µg/l = Micrograms per liter.

NA - Not available.

Table A-2. Ley Creek Sediment Detections -Comparison to Screening Values for Assessment of Potential Impacts to Fish
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Maximum Qualifier	Mean Concentration (mg/kg)	Detection Frequency	Minimum Screening Value (mg/kg)	Screening Value Source	Freshwater Benthic Chronic Toxicity (NYSDEC 1999) mg/kg	Wildlife Bioaccumulation (NYSDEC 1999) mg/kg	LEL Metals (NYSDEC 1999) (mg/kg)	SEL Metals (NYSDEC 1999) (mg/kg)	USEPA Region 3 (1995) BTAG (mg/kg)	Freshwater LEL Persaud *et al.* (1993) (mg/kg dry weight)	SEL Persaud *et al.* (1993) (mg/kg dry weight)	USEPA Ecotox (1996) (mg/kg) dry weight	WA State (1997) LAET (mg/kg dry weight)	WA State (1997) FSQV (mg/kg dry weight)
Aluminum	4,390	10,300	*	6,500	11/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony	0.17	1.7	BNJ	0.60	26/28	2.0	NYSDEC (1999) - LEL	NA	NA	2.0	25	150	NA	NA	NA	3.0	NA
Arsenic	2.2	14		5.1	28/28	6.0	NYSDEC (1999) - LEL	NA	NA	6.0	33	8.2	6.0	33	8.2	40	57
Barium	38	87		55	11/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium	0.26	0.53	B	0.37	11/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium	0.25	2.5		0.84	11/11	0.60	NYSDEC (1999) - LEL	NA	NA	0.60	9.0	1.2	0.60	10	1.2	7.6	5.1
Calcium	11,200	105,000		44,000	11/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium	11	164		39	28/28	26	NYSDEC (1999) - LEL	NA	NA	26	110	260	26	110	81	280	260
Cobalt	3.9	8.2	B	5.8	11/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper	15	128		48	28/28	16	NYSDEC (1999) - LEL	NA	NA	16	110	34	16	110	34	840	390
Cyanide	1.8	1.8		0.44	1/25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron	11,300	18,700	*	14,000	11/11	20,000	NYSDEC (1999) - LEL	NA	NA	20,000	40,000	NA	20,000	40,000	NA	NA	NA
Lead	6.9	172		54	28/28	31	Persaud (1993)	NA	NA	31	110	47	31	250	47	260	450
Magnesium	5,100	23,600		12,000	11/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese	167	433		270	11/11	460	NYSDEC (1999) - LEL	NA	NA	460	1,100	NA	460	1,100	NA	1,800	NA
Mercury	0.050	0.17	NJ	0.081	9/28	0.150	NYSDEC (1999) - LEL	NA	NA	0.15	1.3	0.15	0.20	2.0	0.15	0.56	0.41
Nickel	6.50	58		19	28/28	16	NYSDEC (1999) - LEL	NA	NA	16	50	21	16	75	21	46	NA
Potassium	423	2,810		1,500	11/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Selenium	0.45	1.2		0.51	17/28	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Silver	0.12	1.4	B	0.60	9/11	1.00	NYSDEC (1999) - LEL	NA	NA	1.0	2.2	1.0	NA	NA	NA	4.5	6.1
Sodium	171	540	B	290	11/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium	0.60	0.60	B	0.33	1/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vanadium	11	25		16	11/11	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc	60	390		160	19/19	120	NYSDEC (1999) - LEL	NA	NA	120	270	150	120	820	150	520	410
2-Methylnaphthalene	0.061	3.5	J	0.48	20/24	0.070	USEPA (1995)	34	NA	NA	NA	0.070	NA	NA	NA	NA	NA
Acenaphthene	0.081	9.9		1.2	21/24	0.044	USEPA (1995)	140	NA	NA	NA	0.044	NA	NA	0.62	0.10	3.5
Acenaphthylene	0.054	0.28	J	0.32	19/24	0.016	USEPA (1995)	NA	NA	NA	NA	0.016	NA	NA	0.43	2.2	1.9
Anthracene	0.14	12		1.6	23/24	0.085	USEPA (1995)	107	NA	NA	NA	0.0853	NA	NA	0.43	2.8	2.1
Benzo(a)anthracene	0.059	30		5.3	24/24	0.261	USEPA (1995)	12	NA	NA	NA	0.261	NA	NA	0.43	7.7	5.0
Benzo(b)fluoranthene	0.52	27		6.1	23/24	0.43	USEPA (1995)	NA	NA	NA	NA	3.2	NA	NA	0.43	NA	NA
Benzo(ghi)perylene	0.42	20		4.2	23/24	0.43	USEPA (1996) as benzo(a)pyrene	NA	NA	NA	NA	0.67	NA	NA	0.43	1.4	1.2
Benzo(k)fluoranthene	0.055	13		2.5	24/24	0.43	USEPA (1996) as benzo(a)pyrene	NA	NA	NA	NA	NA	NA	NA	0.43	NA	NA
Benzo[a]pyrene	0.045	27	J	5.0	24/24	0.43	USEPA (1995)	NA	NA	NA	NA	0.43	NA	NA	0.43	11	7.0000
Carbazole	0.058	10		1.2	22/24	0.14	WA (1997) FSQV, LAET	NA	NA	NA	NA	NA	NA	NA	NA	0.14	0.14
Chrysene	0.062	29		5.5	24/24	0.384	USEPA (1995)	NA	NA	NA	NA	0.384	NA	NA	0.43	11	7.4
Fluoranthene	0.14	57		9.7	24/24	0.60	USEPA (1995)	1,020	NA	NA	NA	0.60	NA	NA	2.9	21	11
Fluorene	0.067	9.4		1.1	22/24	0.019	USEPA (1995)	8.0	NA	NA	NA	0.019	NA	NA	NA	4.2	3.6
Indeno(1,2,3-cd)pyrene	0.40	17		3.8	23/24	0.43	USEPA (1996) as benzo(a)pyrene	NA	NA	NA	NA	0.60	NA	NA	0.43	0.76	0.73
Naphthalene	0.057	9.3		1.0	19/24	0.16	USEPA (1995)	30	NA	NA	NA	0.16	NA	NA	0.48	46	37
Phenanthrene	0.13	69		9.5	24/24	0.24	USEPA (1995)	120	NA	NA	NA	0.24	NA	NA	0.85	15	5.7

Table A-2. Ley Creek Sediment Detections -Comparison to Screening Values for Assessment of Potential Impacts to Fish
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Minimum Concentration (mg/kg)	Maximum Concentration (mg/kg)	Maximum Qualifier	Mean Concentration (mg/kg)	Detection Frequency	Minimum Screening Value (mg/kg)	Screening Value Source	Freshwater Benthic Chronic Toxicity (NYSDEC 1999) mg/kg	Wildlife Bioaccumulation (NYSDEC 1999) mg/kg	LEL Metals (NYSDEC 1999) (mg/kg)	SEL Metals (NYSDEC 1999) (mg/kg)	USEPA Region 3 (1995) BTAG (mg/kg)	Freshwater LEL Persaud *et al.* (1993) (mg/kg dry weight)	SEL Persaud *et al.* (1993) (mg/kg dry weight)	USEPA Ecotox (1996) (mg/kg) dry weight	WA State (1997) LAET (mg/kg dry weight)	WA State (1997) FSQV (mg/kg dry weight)
Pyrene	0.13	68		13	24/24	0.66	USEPA (1995)	961	NA	NA	NA	0.665	NA	NA	0.66	23	9.6
Aroclor 1016	0.038	5.81	X	0.52	6/30	0.0070	Persaud (1993)	NA	NA	NA	NA	NA	0.0070	53	NA	NA	NA
Aroclor 1242	0.019	36	D	1.6	6/30	0.193	NYSDEC (1999) LEL	NA	NA	0.193	NA	NA	NA	NA	NA	NA	NA
Aroclor 1248	0.15	25		3.3	24/30	0.021	WA (1997) LAET	NA	NA	NA	NA	NA	0.030	150	NA	0.021	0.021
Aroclor 1254	0.019	2.9	JD	0.47	5/30	0.0073	WA (1997) LAET	NA	NA	NA	NA	NA	0.060	34	NA	0.0073	0.0073
Aroclor 1260	0.035	1.13	JD	0.46	18/30	0.0050	Persaud (1993)	NA	NA	NA	NA	NA	0.0050	24	NA	NA	NA
1,4-Dichlorobenzene	0.067	0.067	J	0.29	1/41	0.11	USEPA (1995)	NA	NA	NA	NA	0.11	NA	NA	0.35	NA	NA
2,4-Dimethylphenol	0.076	0.17	J	0.76	2/24	0.029	USEPA (1995)	NA	NA	NA	NA	0.029	NA	NA	NA	NA	NA
2-Methylphenol	0.073	0.073	J	0.78	1/24	0.063	USEPA (1995)	NA	NA	NA	NA	0.063	NA	NA	NA	NA	NA
4-Methylphenol	0.054	0.29	J	0.36	7/24	0.67	USEPA (1995)	NA	NA	NA	NA	0.67	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.045	0.83		1.0	3/24	0.64	WA (1997) FSQV	200	NA	NA	NA	NA	NA	NA	NA	0.75	0.64
Butyl benzyl phthalate	0.35	0.61	J	1.9	2/24	0.063	USEPA (1995)	NA	NA	NA	NA	0.063	NA	NA	11	NA	NA
Dibenzo(a,h)anthracene	0.093	5.9		1.7	14/24	0.0634	USEPA (1995)	NA	NA	NA	NA	0.0634	NA	NA	NA	0.23	0.23
Dibenzofuran	0.078	8.8		0.95	20/24	0.54	USEPA (1995)	NA	NA	NA	NA	0.54	NA	NA	2.0	32	NA
Phenol	0.079	0.099	J	0.47	3/24	0.048	WA (1997) LAET	0.50	NA	NA	NA	0.42	NA	NA	NA	0.048	NA
Total TCDD TEQ	0.0000026	0.000062		0.0000057	6/6	0.00020	NYSDEC (1999) Wildlife	NA	0.0002	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	0.0050	0.0060	J	0.011	2/8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	0.015	0.065	J	0.020	5/8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	0.0030	0.0090	J	0.012	3/8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	0.0020	0.0020	J	0.0045	2/25	0.010	USEPA (1995)	24	NA	NA	NA	0.010	NA	NA	3.6	NA	NA
Tetrachloroethene	0.0020	0.0020	J	0.0044	1/25	0.057	USEPA (1995)	NA	NA	NA	NA	0.057	NA	NA	0.53	NA	NA
Trichloroethene	0.0020	0.0030		0.0045	2/25	1.6	USEPA (1996)	NA	NA	NA	NA	NA	NA	NA	1.6	NA	NA
Xylene (total)	0.0040	0.0060	J	0.0060	2/25	0.025	USEPA (1996)	92	NA	NA	NA	0.040	NA	NA	0.025	NA	NA
Total TCDD (Bird TEQ)	0.0000026	0.000062		0.0000057	6/6	0.00020	NYSDEC (1999) Wildlife	NA	0.00020	NA	NA	NA	NA	NA	NA	NA	NA
Total TCDD (Mammal TEQ)	0.0000026	0.000062		0.0000057	6/6	0.00020	NYSDEC (1999) Wildlife	NA	0.00020	NA	NA	NA	NA	NA	NA	NA	NA

B

D

ER-L = Effects range - low.

FSQV = Freshwater sediment quality values.

J = Estimated Value

LAETs - Lowest apparent effects thresholds.

LEL - Lowest effect level.

mg/kg = Milligrams per kilogram.

N = Tentatively identified.

NA = Not applicable.

SEL = Severe effects level.

SQAV - Sediment quality assessment value.

X

Table A-3. Plant Uptake Factors from Soil and Sediment
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	BERA Plant BCF	Source	Calculated Plant BCF	Plant BCF	Source	Plant BCF	Source	Plant BCF	Source
Aluminum	0.0040	USEPA (1999a)	NAP	0.0040	USEPA (1999a)	0.004	Parsons (2000)	NA	NA
Antimony	0.20	USEPA (1999a)	NAP	0.2	USEPA (1999a)	0.00013	Parsons (2000)	NA	NA
Arsenic	0.0472	USDOE (1998b)	NAP	0.0472	USDOE (1998b)	0.036	USEPA (1999a)	NA	NA
Barium	0.15	USEPA (1999a)	NAP	0.15	USEPA (1999a)	0.15	Parsons (2000)	NA	NA
Beryllium	0.010	USEPA (1999a)	NAP	0.01	USEPA (1999a)	0.01	Parsons (2000)	NA	NA
Cadmium	0.833	USDOE (1998b)	NAP	0.833	USDOE (1998b)	0.364	USEPA (1999a)	NA	NA
Calcium	0.1335	Median of other metals	NAP	0.1335	Median of other metals	NA	NA	NA	NA
Chromium	0.010	Parsons (2000)	NAP	0.0075	USEPA (1999a)	0.01	Parsons (2000)	NA	NA
Cobalt	0.080	Parsons (2000)	NAP	NA	NA	0.08	Parsons (2000)	NA	NA
Copper	0.40	USEPA (1999a)	NAP	0.2	USDOE (1998b)	0.4	USEPA (1999a)	NA	NA
Cyanide	0.13	Median of other metals	5.65	0.1335	Median of other metals	NA	NA	NA	NA
Iron	0.1335	Median of other metals	NAP	0.1335	Median of other metals	NA	NA	NA	NA
Lead	0.117	USDOE (1998b)	NAP	0.117	USDOE (1998b)	0.045	USEPA (1999a)	NA	NA
Magnesium	0.1335	Median of other metals	NAP	0.1335	Median of other metals	NA	NA	NA	NA
Manganese	0.56	Parsons (2000)	NAP	0.56	Parsons (2000)	NA	NA	NA	NA
Mercury	0.663	USDOE (1998b)	NAP	0.663	USDOE (1998b)	0.0375	USEPA (1999a)	0.002	Parsons (2000)
Nickel	0.032	USEPA (1999a)	NAP	0.0136	USDOE (1998b)	0.032	USEPA (1999a)	NA	NA
Potassium	0.1335	Median of other metals	NAP	0.1335	Median of other metals	NA	NA	NA	NA
Selenium	0.70	USDOE (1998b)	NAP	0.7	USDOE (1998b)	0.016	USEPA (1999a)	NA	NA
Silver	0.40	Parsons (2000)	NAP	0.4	Parsons (2000)	0.003	Parsons (2000)	NA	NA
Sodium	0.1335	Median of other metals	NAP	0.1335	Median of other metals	NA	NA	NA	NA
Thallium	0.0040	USEPA (1999a)	NAP	NA	Parsons (2000)	0.004	USEPA (1999a)	NA	NA
Vanadium	0.010	Parsons (2000)	NAP	0.01	Parsons (2000)	NA	NA	NA	NA
Zinc	1.4	Parsons (2000)	NAP	0.43	USDOE (1998b)	1.2E-12	USEPA (1999a)	1.4	Parsons (2000)
Aroclor 1016	0.11	Parsons (2000)	0.164	0.01	USEPA (1999a)	0.11	Parsons (2000)	NA	NA
Aroclor 1242	0.020	Parsons (2000)	0.162	NA	NA	0.02	Parsons (2000)	NA	NA
Aroclor 1248	0.010	Parsons (2000)	0.143	NA	NA	0.01	Parsons (2000)	NA	NA
Aroclor 1254	0.010	USEPA (1999a)	0.0886	0.01	USEPA (1999a)	0.01	Parsons (2000)	NA	NA
Aroclor 1260	0.0040	Parsons (2000)	0.0902	NA	NA	0.004	Parsons (2000)	NA	NA
1,2-Dichlorobenzene	NA	NA	0.694	NA	NA	NA	NA	NA	NA
2,4-Dimethylphenol	0.038	BEHP as surrogate	1.21	0.038	BEHP as surrogate	NA	NA	NA	NA
2-Methylnaphthalene	1.020	Benzo(a)pyrene as surrogate	0.455	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
2-Methylphenol	0.010	Parsons (2000)	1.57	0.01	Parsons (2000)	NA	NA	NA	NA
4-Methylphenol	NA	NA	1.604	NA	NA	NA	NA	NA	NA
Acenaphthene	1.020	Benzo(a)pyrene as surrogate	0.508	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Acenaphthylene	1.020	Benzo(a)pyrene as surrogate	0.577	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Anthracene	1.020	Benzo(a)pyrene as surrogate	0.355	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Benzo(a)anthracene	0.020	USEPA (1999a)	0.191	0.0202	USEPA (1999a)	NA	NA	NA	NA
Benzo(a)pyrene	1.02	Parsons (2000)	0.132	1.02	Parsons (2000)	NA	NA	NA	NA

Table A-3. Plant Uptake Factors from Soil and Sediment
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	BERA Plant BCF	Source	Calculated Plant BCF	Plant BCF	Source	Plant BCF	Source	Plant BCF	Source
Benzo(b)fluoranthene	0.0101	USEPA (1999a)	0.147	0.0101	USEPA (1999a)	NA	NA	NA	NA
Benzo(ghi)perylene	1.020	Benzo(a)pyrene as surrogate	0.114	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Benzo(k)fluoranthene	0.0101	USEPA (1999a)	0.147	0.0101	USEPA (1999a)	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	0.038	USEPA (1999a)	0.255	0.038	USEPA (1999a)	NA	NA	NA	NA
Butyl benzyl phthalate	0.038	BEHP as surrogate	0.369	0.038	BEHP as surrogate	NA	NA	NA	NA
Carbazole	0.038	BEHP as surrogate	0.727	0.038	BEHP as surrogate	NA	NA	NA	NA
Chrysene	0.019	USEPA (1999a)	0.191	0.0187	USEPA (1999a)	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.0064	USEPA (1999a)	0.191	0.0064	USEPA (1999a)	NA	NA	NA	NA
Dibenzofuran	0.038	BEHP as surrogate	0.439	0.038	BEHP as surrogate	NA	NA	NA	NA
Di-n-butyl phthalate	0.00	di-n-octyl phthalate as surrogate	0.560	0.000157	di-n-octyl phthalate as surrogate	NA	NA	NA	NA
Di-n-octyl phthalate	0.00016	Parsons (2000)	0.240	0.000157	USEPA (1999a)	0.00016	Parsons (2000)	NA	NA
Fluoranthene	1.020	Benzo(a)pyrene as surrogate	0.242	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Fluorene	0.038	BEHP as surrogate	0.437	0.038	BEHP as surrogate	NA	NA	NA	NA
Hexachlorobenzene	0.026	USEPA (1999a)	0.204	0.0255	USEPA (1999a)	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	0.0039	USEPA (1999a)	0.114	0.0039	USEPA (1999a)	NA	NA	NA	NA
Naphthalene	1.020	Benzo(a)pyrene as surrogate	0.702	1.02	Benzo(a)pyrene as surrogate	NA	NA	NA	NA
Phenanthrene	0.038	BEHP as surrogate	0.359	0.038	BEHP as surrogate	NA	NA	NA	NA
Phenol	0.04	BEHP as surrogate	2.080	0.038	BEHP as surrogate	NA	NA	NA	NA
Pyrene	0.038	BEHP as surrogate	0.245	0.038	BEHP as surrogate	NA	NA	NA	NA
2-Butanone	NA	NA	4.211	NA	NA	NA	NA	NA	NA
Acetone	52	USEPA (1999a)	5.622	52	USEPA (1999a)	NA	NA	NA	NA
Carbon disulfide	NA	NA	1.540	NA	NA	NA	NA	NA	NA
Chloroform	2.900	USEPA (1999a)	1.567	2.9	USEPA (1999a)	NA	NA	NA	NA
Chloromethane	NA	NA	2.826	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	0.792	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	1.134	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	1.034	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	1.208	NA	NA	NA	NA	NA	NA
Xylenes (total)	NA	NA	0.770	NA	NA	NA	NA	NA	NA

Notes:

BCF = Bioconcentration factor.

NA = Not available.

NAP = Not applicable

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Table A-4. Life History Information for the Food Chain Model - Additional Receptors
Former IFG Facility and Ley Creek Deffered Media, General Motors Corporation, Syracuse, New York

Life History Data [1]	American Robin *Turdis migratorius*	Eastern Cottontail rabbit *Sylvilagus floridanus*
Body Weight (kg) (average)	0.084	1.21
Body Weight (kg) (minimum)	0.078	1.012
Body Weight (kg) (maximum)	0.09	1.409
dIR forage/bw (kg/kg-day) average	1.52	0.101 [2]
dIR forage/bw minimum	1.27	0.0883 [2]
dIR forage/bw maximum	1.77	0.112 [2]
Area use factor (AUF) Site/Available habitat	1	1
Time use factor (TUF)	1	1
Biota (% of dIR forage/day)	100%	100%
Actual dietary components:		
terrestrial invertebrates	0.32	0
vegetable matter	0.68	1
Water ingestion (kg/kg-day)	0.14	0.097
Soil/sediment ingestion		
% of dIR forage/day	NA	NA
kg/day	0.001 [5]	0.015 [6]

Notes:

1. Source is USEPA (1993) unless otherwise noted.
2. Calculated using equation 3-9 from USEPA (1993). [0.577*Body Weight$^{0.727}$]
3. Value presented is for Woodcock.
4. Value presented is for meadow vole.
5. Value presented is for boat-tailed grackle as provided in Parsons (2000).
6. Source is Parsons (2000).

Table A-5. Food Chain Model Calculations for Additional Receptors
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Surface Soil	Sediment	Surface Water	Sed FOC=	0.035		Soil FOC =	0.006	Trophic Level 3 Fish						
	RME Exposure Point Conc. (mg/kg)	RME Exposure Point Conc. (mg/kg)	RME Exposure Point Conc. (µg/l)	Log Kow	Koc	Kd Source	Kd		BAF	BAF Source	BSAF	BSAF Source	Modeled Conc. (BSAF*Sed Conc). (mg/kg)	Modeled Conc (BAF*SW Conc) (mg/kg)	Selected Fish Conc. (mg/kg)
Aluminum	13,000	7,700	130	NA	NA	Median for Cu, Pb, Cd, Zn, Ni from Hassan et al. (1996)	144		231	Sample et al. 1996	NA	NA	NAP	30	30
Antimony	1.4	1.7	1.8	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		1.0	Sample et al. 1996	NA	NA	NAP	0.0018	0.0018
Arsenic	18	5.8	ND	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		17	Sample et al. 1996	NA	NA	NAP	NA	NAP
Barium	160	87	66	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		75.5	Median of inorganics from Sample et al. (1996)	NA	NA	NAP	5.0	5.0
Beryllium	0.94	0.4	0.41	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		19	Sample et al. 1996	NA	NA	NAP	0.0078	0.0078
Cadmium	1.0	1.6	ND	NA	NA	Hassan et al. (1996)	69		12,400	Sample et al. 1996	NA	NA	NAP	NA	NAP
Calcium	77,000	64,000	140,000	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		75.5	Median of inorganics from Sample et al. (1996)	NA	NA	NAP	10570	10570
Chromium	2,000	51	7.4	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		3	Sample et al. 1996	NA	NA	NAP	0.0222	0.0222
Copper	890	61	8.7	NA	NA	Hassan et al. (1996)	149		290	Sample et al. 1996	NA	NA	NAP	2.5	2.5
Cyanide	11	1.8	ND	-0.250	0.575	Koc*FOC	0.020		0.66	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Iron	26,000	19,000	430	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		75.5	Median of inorganics from Sample et al. (1996)	NA	NA	NAP	32	32
Lead	65	81	4.0	NA	NA	Hassan et al. (1996)	144		45	Sample et al. 1996	NA	NA	NAP	0.18	0.18
Magnesium	18,000	18,000	25,000	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		75.5	Median of inorganics from Sample et al. (1996)	NA	NA	NAP	1888	1888
Manganese	480	430	71	NA	NA	Hassan et al 1996)	144		75.5	Median of inorganics from Sample et al. (1996)	NA	NA	NAP	5.4	5.4
Mercury	0.095	0.17	ND	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		140,000	USEPA 1995a	NA	NA	NAP	NA	NAP
Nickel	610	23	11	NA	NA	Hassan et al. (1996)	45		106	Sample et al. 1996	NA	NA	NAP	1.2	1.2
Potassium	2,400	2,200	2,700	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		75.5	Median of inorganics from Sample et al. (1996)	NA	NA	NAP	204	204
Selenium	1.9	0.69	ND	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		6,800	Sample et al. 1996	NA	NA	NAP	NA	NAP
Silver	ND	1.4	ND	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		75.5	Median of inorganics from Sample et al. (1996)	NA	NA	NAP	NA	NAP
Sodium	410	370	100,000	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		NA	NA	NA	NA	NAP	NA	NAP
Thallium	0.40	0.60	ND	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		34	Sample et al. 1996	NA	NA	NAP	NA	NAP
Vanadium	28	18	ND	NA	NA	Median for Cu, Pb, Cd, Zn, Ni	144		75.5	Median of inorganics from Sample et al. (1996)	NA	NA	NAP	NA	NAP
Zinc	1,300	200	33	NA	NA	Hassan et al. (1996)	233		966	Sample et al. 1996	NA	NA	NAP	32	32
Aroclor 1016	ND	5.8	ND	5.88	180,000	Koc*FOC	6,300		116,600,000	USEPA 1995a	1.875	ACOE (1999)	10.875	NA	11
Aroclor 1242	ND	36	ND	5.9	6,300	Koc*FOC	221		116,600,000	USEPA 1995a	1.875	ACOE (1999)	67.5	NA	68
Aroclor 1248	3,900	25	ND	6.11	277,000	Koc*FOC	9,695		116,600,000	USEPA 1995a	1.875	ACOE (1999)	46.875	NA	47
Aroclor 1254	8.0	2.9	ND	6.94	2,140,000	Koc*FOC	74,900		116,600,000	USEPA 1995a	1.875	ACOE (1999)	5.4375	NA	5.4
Aroclor 1260	ND	1.1	ND	6.91	6,700,000	Koc*FOC	234,500		116,600,000	USEPA 1995a	1.875	ACOE (1999)	2.0625	NA	2.1
Dioxins (Fish TEQ)	ND	0.000062	ND	6.91	4,570,000	Koc*FOC	159,950		9,000,000	USEPA 1995a	0.2125	ACOE (1999)	0.000013175	NA	0.000013175
1,2-Dichlorobenzene	0.059	ND	ND	3.38	1,700	Koc*FOC	60		10	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
2,4-Dimethylphenol	ND	0.17	ND	2.42	96	Koc*FOC	3.360		5.00	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
2-Methylnaphthalene	1.7	0.82	ND	4.11	7,940	Koc*FOC	278		18	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
2-Methylphenol	ND	0.073	ND	1.97	15	Koc*FOC	0.525		3.55	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
4-Methylphenol	ND	0.29	ND	1.93	17	Koc*FOC	0.595		3.44	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Acenaphthene	40	2.1	ND	3.92	4,600	Koc*FOC	161		16	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Acenaphthylene	0.073	0.28	ND	3.7	2,500	Koc*FOC	88		13	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Anthracene	230	2.7	ND	4.54	14,000	Koc*FOC	490		25	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Benzo(a)anthracene	24	13	ND	5.61	1,380,000	Koc*FOC	48,300		56	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Benzo(a)pyrene	21	13	ND	6.25	5,500,000	Koc*FOC	192,500		460,898	Sample et al. 1996	NA	NA	NAP	NA	NAP
Benzo(b)fluoranthene	24	13	ND	6.06	550,000	Koc*FOC	19,250		79	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Benzo(ghi)perylene	22	8.2	ND	6.51	1,600,000	Koc*FOC	56,000		112	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Benzo(k)fluoranthene	8.4	5.1	ND	6.06	550,000	Koc*FOC	19,250		79	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
bis(2-Ethylhexyl)phthalate	2.3	0.83	ND	5.11	87,400	Koc*FOC	3,059		4,753,355	Sample et al. 1996	NA	NA	NAP	NA	NAP
Butyl benzyl phthalate	36	0.61	ND	4.47	17,000	Koc*FOC	595		24	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Carbazole	120	2.3	ND	3.3	940	Koc*FOC	33		9.8	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Chrysene	26	14	ND	5.61	200,000	Koc*FOC	7,000		56	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Dibenz(a,h)anthracene	39	3.7	ND	5.61	3,300,000	Koc*FOC	115,500		56	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Dibenzofuran	21	1.7	ND	4.17	9,120	Koc*FOC	319		19	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP

Table A-5. Food Chain Model Calculations for Additional Receptors
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Surface Soil	Sediment	Surface Water	Sed FOC= 0.035			Soil FOC = 0.006	Trophic Level 3 Fish						
	RME Exposure Point Conc. (mg/kg)	RME Exposure Point Conc. (mg/kg)	RME Exposure Point Conc. (µg/l)	Log Kow	Koc	Kd Source	Kd	BAF	BAF Source	BSAF	BSAF Source	Modeled Conc. (BSAF*Sed Conc). (mg/kg)	Modeled Conc (BAF*SW Conc) (mg/kg)	Selected Fish Conc. (mg/kg)
Di-n-butyl phthalate	0.35	ND	ND	3.75	1,390	Koc*FOC	49	2,739	Sample et al. 1996	NA	NA	NAP	NA	NAP
Di-n-octyl phthalate	56	ND	10	5.22	19,000	Koc*FOC	665	42	Calculated per Lyman et al. (1982)	NA	NA	NAP	0.42	0.42
Fluoranthene	75	23	ND	5.2	38,000	Koc*FOC	1,330	41	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Fluorene	65	2.0	ND	4.18	7,300	Koc*FOC	256	19	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Hexachlorobenzene	0.10	ND	ND	5.5	3,900	Koc*FOC	137	52	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Indeno(1,2,3-cd)pyrene	14	7.2	ND	6.5	1,600,000	Koc*FOC	56,000	111	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Naphthalene	2.1	2.3	ND	3.36	940	Koc*FOC	33	10	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Phenanthrene	670	69	ND	4.52	14,000	Koc*FOC	490	25	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Phenol	0.85	0.099	ND	1.48	14	Koc*FOC	0.497	2.4	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Pyrene	65	38	ND	5.18	38,000	Koc*FOC	1,330	41	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
2-Butanone	ND	0.0060	ND	0.260	4.51	Koc*FOC	0.158	0.97	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Acetone	ND	0.065	2.0	-0.240	2.2	Koc*FOC	0.077	0.66	Calculated per Lyman et al. (1982)	NA	NA	NAP	0.0013	0.0013
Carbon disulfide	0.038	0.0090	ND	2.0	54	Koc*FOC	1.890	3.6	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Chloroform	0.019	ND	ND	1.970	44	Koc*FOC	1.540	17	Sample et al. 1996	NA	NA	NAP	NA	NAP
Chloromethane	ND	ND	0.20	0.950	5.5	Koc*FOC	0.193	1.64	Calculated per Lyman et al. (1982)	NA	NA	NAP	0.00033	0.00033
Ethylbenzene	0.060	0.0020	ND	3.15	220	Koc*FOC	7.700	8.71	Calculated per Lyman et al. (1982)	NA	NA	NAP	NA	NAP
Tetrachloroethene	0.012	0.0020	ND	2.53	364	Koc*FOC	13	63	Sample et al. 1996	NA	NA	NAP	NA	NAP
Toluene	0.21	ND	ND	2.69	120	Koc*FOC	4.200	73	Sample et al. 1996	NA	NA	NAP	NA	NAP
Trichloroethene	46	0.0030	1.0	2.42	126	Koc*FOC	4.410	339	USEPA 1995a	NA	NA	NAP	0.339	0.339
Xylenes (total)	0.60	0.0060	ND	3.20	238	Koc*FOC	8.330	161	Sample et al. 1996	NA	NA	NAP	NA	NAP

Table A-5. Food Chain Model Calculations for Additional Receptors
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Trophic Level 4 Fish						0.075	Plants		
	BSAF	BSAF Source	BAF	BAF Source	Modeled Conc. (BSAF*Sed Conc). (mg/kg)	Modeled Conc (BAF*SW Conc) (mg/kg)	Selected Fish Conc. (mg/kg)	BCF	BCF Source	Selected Plant Conc. (mg/kg)
Aluminum	0.0010	USGS 1999a	231	Sample et al. 1996	7.76	30	30	0.0040	USEPA (1999a)	52
Antimony	0.034	Median of other metals	1.0	Sample et al. 1996	0.058	0.0018	0.058	0.20	USEPA (1999a)	0.28
Arsenic	0.077	USGS 1999a	17	Sample et al. 1996	0.45	NA	0.447	0.047	USDOE (1998b)	0.85
Barium	0.026	USGS 1999a	76	Median of other inorganics from Sample et al. 1996	2.262	4.983	4.983	0.15	USEPA (1999a)	24
Beryllium	0.00100	USGS 1999a	19	Sample et al. 1996	0.00042	0.0078	0.0078	0.010	USEPA (1999a)	0.0094
Cadmium	11.26	As Hg (bioaccumulator)	12,400	Sample et al. 1996	18	NA	18	0.83	USDOE (1998b)	0.83
Calcium	0.034	Median of other metals	76	Median of other inorganics from Sample et al. 1996	2,176	10,570	10,570	0.134	Median of other metals	10,000
Chromium	0.0296	USGS 1999a	3.0	Sample et al. 1996	1.51	0.022	1.510	0.0100	Parsons (2000)	20
Copper	0.1164	USGS 1999a	290	Sample et al. 1996	7.10	2.5	7.1	0.40	USEPA (1999a)	360
Cyanide	NA	NA	0	Sample et al. 1996	NAP	0	NAP	0.134	Median of other metals	1.5
Iron	0.00262	USGS 1999a	76	Median of other inorganics from Sample et al. 1996	50	32	50	0.134	Median of other metals	3,500
Lead	0.0123	USGS 1999a	45	Sample et al. 1996	0.996	0.18	0.996	0.117	USDOE (1998b)	7.6
Magnesium	0.034	Median of other metals	76	Median of other inorganics from Sample et al. 1996	612	1,888	1,888	0.134	Median of other metals	2,400
Manganese	0.0378	USGS 1999a	76	Median of other inorganics from Sample et al. 1996	16.3	5.361	16	0.560	Parsons (2000)	270
Mercury	11.260	USGS 1999a	140,000	USEPA 1995a	1.914	NA	1.914	0.663	USDOE (1998b)	0.063
Nickel	0.050	USGS 1999a	106	Sample et al. 1996	1.150	1.2	1.166	0.032	USEPA (1999a)	20
Potassium	0.034	Median of other metals	76	Median of other inorganics from Sample et al. 1996	75	204	204	0.13	Median of other metals	320
Selenium	15.92	USGS 1999a	6,800	Sample et al. 1996	11	NA	11	0.70	USDOE (1998b)	1.3
Silver	0.034	Median of other metals	76	Median of other inorganics from Sample et al. 1996	0.048	NA	0.048	0.400	Parsons (2000)	NAP
Sodium	0.034	Median of other metals	NA	NA	13	NA	13	0.13	Median of other metals	55
Thallium	0.034	Median of other metals	34	Sample et al. 1996	0.020	NA	0.020	0.0040	USEPA (1999a)	0.0016
Vanadium	0.0105	USGS 1999a	76	Median of other inorganics from Sample et al. 1996	0.19	NA	0.189	0.01	Parsons (2000)	0.28
Zinc	0.75	USGS 1999a	966	Sample et al. 1996	150	32	150	1.4E+00	Parsons (2000)	1,800
Aroclor 1016	14.94	ACOE 2000	116,600,000	USEPA 1995a	87	NA	87	0.110	Parsons (2000)	NAP
Aroclor 1242	14.94	ACOE 2000	116,600,000	USEPA 1995a	538	NA	538	0.020	Parsons (2000)	NAP
Aroclor 1248	14.94	ACOE 2000	116,600,000	USEPA 1995a	374	NA	374	0.010	Parsons (2000)	39
Aroclor 1254	14.94	ACOE 2000	116,600,000	USEPA 1995a	43	NA	43	0.010	USEPA (1999a)	0.080
Aroclor 1260	14.94	ACOE 2000	116,600,000	USEPA 1995a	16	NA	16	0.004	Parsons (2000)	NAP
Dioxins (Fish TEQ)	0.2654	ACOE 2000	9,000,000	USEPA 1995a	0.000016	NA	0.000016	0.0056	USEPA (1999a) as TCDD	NAP
1,2-Dichlorobenzene	3.82	ACOE 2000	197	Calculated per USEPA 1999	NAP	NA	NAP	NA	NA	NAP
2,4-Dimethylphenol	3.8	ACOE 2000	24	Benzene as surrogate (based on Kow)	0.649	NA	0.649	0.038	BEHP as surrogate	NAP
2-Methylnaphthalene	0.60	ACOE 2000	2,739	di-n-butyl phthalate as surrogate (based on Kow)	0.5	NA	0.492	1.02	Benzo(a)pyrene as surrogate	1.70
2-Methylphenol	3.82	ACOE 2000	4.730	MIBK as surrogate (based on Kow)	0.279	NA	0.279	0.010	Parsons (2000)	NAP
4-Methylphenol	3.82	ACOE 2000	9.338	Calculated per USEPA 1999	1.108	NA	1.108	NA	NA	NAP
Acenaphthene	0.023	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	0.048	NA	0.048	1.020	Benzo(a)pyrene as surrogate	41
Acenaphthylene	0.020	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	0.0056	NA	0.0056	1.020	Benzo(a)pyrene as surrogate	0.074
Anthracene	1.04	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	2.808	NA	2.808	1.020	Benzo(a)pyrene as surrogate	230
Benzo(a)anthracene	0.58	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	7.592	NA	7.592	0.0202	USEPA (1999a)	0.48
Benzo(a)pyrene	0.746	ACOE 2000	460,898	Sample et al. 1996	9.698	NA	9.698	1.020	Parsons (2000)	21
Benzo(b)fluoranthene	0.078	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	1.0	NA	1.0	0.0101	USEPA (1999a)	0.24
Benzo(ghi)perylene	0.0424	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	0.35	NA	0.35	1.020	Benzo(a)pyrene as surrogate	22
Benzo(k)fluoranthene	0.041	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	0.21	NA	0.21	0.0101	USEPA (1999a)	0.085
bis(2-Ethylhexyl)phthalate	14.94	ACOE 2000	4,753,355	Sample et al. 1996	12	NA	12	0.038	USEPA (1999a)	0.087
Butyl benzyl phthalate	14.94	ACOE 2000	2,739	di-n-butyl phthalate as surrogate (based on Kow)	9.1	NA	9.1	0.038	BEHP as surrogate	1.40
Carbazole	0.020	ACOE 2000	2,739	di-n-butyl phthalate as surrogate (based on Kow)	0.046	NA	0.046	0.038	BEHP as surrogate	4.6
Chrysene	0.51	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	7.168	NA	7.168	0.0187	USEPA (1999a)	0.49
Dibenz(a,h)anthracene	0.0194	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	0.1	NA	0.1	0.0064	USEPA (1999a)	0.25
Dibenzofuran	14.94	ACOE 2000	2,739	di-n-butyl phthalate as surrogate (based on Kow)	25	NA	25	0.038	BEHP as surrogate	0.80

Table A-5. Food Chain Model Calculations for Additional Receptors
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

	Trophic Level 4 Fish						0.075	Plants		
Constituent	BSAF	BSAF Source	BAF	BAF Source	Modeled Conc. (BSAF*Sed Conc). (mg/kg)	Modeled Conc (BAF*SW Conc) (mg/kg)	Selected Fish Conc. (mg/kg)	BCF	BCF Source	Selected Plant Conc. (mg/kg)
Di-n-butyl phthalate	14.94	ACOE 2000	2,739	Sample et al. 1996	NAP	NA	NAP	0.00016	di-n-octyl phthalate as surrogate	0.000055
Di-n-octyl phthalate	14.94	ACOE 2000	2,739	di-n-butyl phthalate as surrogate	NAP	27	27	0.00016	Parsons (2000)	0.0090
Fluoranthene	0.789	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	18	NA	18	1.020	Benzo(a)pyrene as surrogate	77
Fluorene	0.077	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	0.15	NA	0.15	0.038	BEHP as surrogate	2.5
Hexachlorobenzene	14.94	ACOE 2000	2,739	di-n-butyl phthalate as surrogate (based on Kow)	NAP	NA	NAP	0.0255	USEPA (1999a)	0.0026
Indeno(1,2,3-cd)pyrene	0.0377	ACOE 2000	460,898	Benzo(a)pyrene as surrogate	0.27	NA	0.27	0.0039	USEPA (1999a)	0.055
Naphthalene	0.0289	ACOE 2000	2,739	di-n-butyl phthalate as surrogate (based on Kow)	0.066	NA	0.066	1.020	Benzo(a)pyrene as surrogate	2.1
Phenanthrene	2.1	ACOE 2000	2,739	di-n-butyl phthalate as surrogate (based on Kow)	148	NA	148	0.038	BEHP as surrogate	25
Phenol	3.82	ACOE 2000	4.730	MIBK as surrogate (based on Kow)	0.378	NA	0.378	0.038	BEHP as surrogate	0.032
Pyrene	0.0884	ACOE 2000	2,739	di-n-butyl phthalate as surrogate (based on Kow)	3.36	NA	3.4	0.038	BEHP as surrogate	2.5
2-Butanone	0.10	ACOE 2000	0.960	Sample et al. 1996	0.00060	NA	0.00060	NA	NA	NAP
Acetone	0.10	ACOE 2000	0.390	Sample et al. 1996	0.0065	0.00078	0.0065	52	USEPA (1999a)	NAP
Carbon disulfide	2.0	ACOE 2000	339	TCE as surrogate (based on Kow)	0.018	NA	0.018	NA	NA	NAP
Chloroform	2.0	ACOE 2000	17	Sample et al. 1996	NAP	NA	NAP	2.9	USEPA (1999a)	0.055
Chloromethane	0.10	ACOE 2000	1.198	Calculated per USEPA 1999	NAP	0.00024	0.000	NA	NA	NAP
Ethylbenzene	NA	NA	2,739	di-n-butyl phthalate as surrogate (based on Kow)	NAP	NA	NAP	NA	NA	NAP
Tetrachloroethene	2.0	ACOE 2000	63	Sample et al. 1996	0.0040	NA	0.0040	NA	NA	NAP
Toluene	NA	NA	73	Sample et al. 1996	NAP	NA	NAP	NA	NA	NAP
Trichloroethene	2.0	ACOE 2000	339	USEPA 1995a	0.0060	0.339	0.339	NA	NA	NAP
Xylenes (total)	NA	NA	161	Sample et al. 1996	NAP	NA	NAP	NA	NA	NAP

Notes:

BAF	Bioaccumulation factor.
BCF	Bioconcentration factor.
BSAF	Biota-sediment accumulation factor
foc	Fraction of organic carbon.
Kd	Sediment partition coefficient.
mg/kg	Milligrams per kilogram.
µg/l	Micrograms per liter.
RME	Reasonable maximum exposure.

Table A-6. Toxicity Reference Values for American Robin
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[a]pyrene	Mallard duck	36	Mallard duck	36	0.1	3.6	Eisler 1987	Reduced growth, decreased weight	Survival	Not reported
Benzo[a]pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)		Fertility and malformations	Subchronic
Dibenz[a,h]anthracene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[a]anthracene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Cyanide	Mallard duck	0.53	Mallard duck	0.53	0.1	0.053	Parsons (2000)		Survival	Not reported
Cyanide	Mallard duck	2	Mallard duck	2	1	2	Cal/Ecotox (1999)	as potassium cyanide	Not reported	Not reported
Acetone	Rat	10	Rat	10	0.1	1	Sample et al. (1996)		Liver and kidney damage	Subchronic
Chloroform	Rat	15	Rat	15	0.1	1.5	Sample et al. (1996)		Liver, kidney, gonad condition	Subchronic
chloromethane	Mouse	100	Mouse	100	1	100	ATSDR (1997)			
Carbon disulfide	Rabbit	11	Rabbit	11	0.1	1.1	IRIS (2001)		Reproduction	Chronic
2-Butanone (MEK)	Rat	1771	Mink	1362	0.1	177.1	Sample et al. (1996)			
Trichloroethene	Mouse	0.7	Mouse	0.7	0.1	0.07	Sample et al. (1996)		Hepatotoxicity	Subchronic
Acenapthene	Mouse	1	Mouse	1	0.1	0.1	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Di-n-butyl phthalate	Ringed dove	0.11	American Robin	0.11	1	0.11	Sample et al. 1996		Reproduction	Chronic
Phenanthrene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)		Physiological	Chronic
Butyl benzyl phthalate	Rat	159	Rat	159	0.1	15.9	IRIS (2001)		Increased liver to body weight and increased liver to brain ratios	Chronic
Fluorene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)		Physiological	Chronic
Carbazole		NV		NV		NV		No value		
Naphthalene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)		Physiological	Chronic
2-Methylnapthalene	Mouse	1	Mouse	1	0.1	0.1	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylphenol	Rat	50	Rat	50	0.1	5	IRIS (2001)		Neurotoxicity and Decreased body weight	Subchronic
1,2-Dichlorobenzene	Rat	85.7	Rat	85.7	0.1	8.57	IRIS (2001)		Liver and kidney toxicity	Chronic
Ethylbenzene	Rat	97.1	Rat	97.1	0.1	9.71	IRIS (2001)		Liver and kidney toxicity	Subchronic
2,4-Dimethylphenol	Mouse	50	Mouse	50	0.1	5	IRIS (2001)		Hematological and Behavioral	Subchronic
4-Methylphenol	Rat	50	Red-tailed hawk	50	1	50	IRIS (1999)	as 2-Methylphenol		
Toluene	Mouse	26	Mouse	26	0.1	2.6	Sample et al. (1996)		Reproduction	Chronic
Phenol	Rat	60	Rat	60	0.1	6	IRIS (2001)		Reduced fetal body weight	Chronic
Bis(2-ethylhexyl)phthalate (	Ringed dove	1.1	American Robin	1.1	1	1.1	Sample et al. (1996)		Reproduction	Chronic
Di-n-octyl phthalate	Ringed dove	0.11	American Robin	0.11	1	0.11	Sample et al. (1996)	as Di-N-butylphthalate	Reproduction	Chronic
Hexachlorobenzene	Coturnix quail	22.5	Coturnix quail	22.5	0.01	0.225	USEPA (1999)	5-day NOAEL	Not reported	Acute
Anthracene	Mallard	1000	Mallard	1000	1	1000	Parsons (2000)	Mixed PAHs used	Physiological	Chronic
Tetrachloroethylene	Mouse	1.4	Mouse	1.4	0.1	0.14	Sample et al. (1996)		Heptotoxicity	Subchronic
Pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Dibenzofuran	Red-winged blackbird	21.8	Red-winged blackbird	21.8	0.01	0.218	Parsons (2000)	LC50	Survival	Acute
Benzo[g,h,i]perylene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Indeno[1,2,3-cd]pyrene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[b]fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Benzo[k]fluoranthene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Acenapthylene	Mallard	1,000	Mallard	1,000	1	1,000	Parsons (2000)	Mixed PAHs used	Physiological	Chronic

Table A-6. Toxicity Reference Values for American Robin
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Chrysene	Chicken	40	Chicken	40	0.1	4	Parsons (2000)	as Benzo(a)pyrene	Fertility and malformations	Subchronic
Xylene (total)	Japanese quail	854	Japanese quail	854	0.1	85.4	Parsons (2000)		Survival	5 days
PCBs	Chicken	0.98	Chicken	0.98	1	0.98	Parsons (2000)		Reproduction	Chronic
Aluminum	Ringed dove	109.7	American Robin	109.7	1	109.7	Sample et al. (1996)	as Al2(SO4)2	Reproduction	Chronic
Iron	Rat	2,550	Rat	2,550	0.001	2.55	Parsons (2000)	LD50	Survival	Not reported
Lead	Japanese quail	1.13	herbivore/omnivore	1.13	1	1.13	Parsons (2000)		Reproduction	Chronic
Lead	American kestrel	3.85	American Robin	3.85	1	3.85	Sample et al. (1996)	as metallic lead	Reproduction	Chronic
Magnesium		NV		NV		NV		No value		
Manganese	Japanese quail	997	American Robin	997	1	997	Sample et al. (1996)	as Mn3O4	Growth, aggressive behavior	Chronic
Mercury	Japanese quail	0.45	American Robin	0.45	1	0.45	Sample et al. (1996)	as mercuric chloride	Reproduction	Chronic
Nickel	Mallard duckling	77.4	American Robin	77.4	1	77.4	Sample et al. (1996)	as nickel sulfate	Mortality, growth, behavior	Chronic
Potassium		NV		NV		NV		No value		
Silver	Mallard	1,780	Mallard	1,780	0.1	178	Parsons (2000)		Not reported	Subchronic
Sodium		NV		NV		NV		No value		
Thallium	European Starling	9.5	European Starling	9.5	0.1	0.95	Parsons (2000)		Survival	Acute
Antimony	Mouse	0.125	Mouse	0.125	0.1	0.0125	Sample et al. (1996)	as antimony potassium tartrate	Lifespan; longevity	Chronic
Arsenic	Mallard duck	5.14	American Robin	5.1	1	5.14	Sample et al. (1996)	as sodium arsenite	Mortality	Chronic
Barium	1-day old chicks	20.8	American Robin	20.8	1	20.8	Sample et al. (1996)	as Barium hydroxide	Mortality	Subchronic
Beryllium	Rat	0.66	Rat	0.66	0.1	0.066	Sample et al. (1996)	as Beryllium sulfate	Longevity; weight loss	Chronic
Cadmium	Mallard duck	1.45	American Robin	1.45	1	1.45	Sample et al. (1996)	as Cadmium chloride	Reproduction	Chronic
Chromium	Black duck	1	American Robin	1	1	1	Sample et al. (1996)	as Cr+3	Reproduction	Chronic
Copper	1 day old chicks	47	American Robin	47	1	47	Sample et al. (1996)	as Copper oxide	Growth, mortality	Chronic
Vanadium	Mallard duck	11.4	American Robin	11.4	1	11.4	Sample et al. (1996)	as vanadyl sulfate	Mortality, body weight, blood chemistry	Chronic
Zinc	White leghorn hen	14.5	American Robin	14.5	1	14.5	Sample et al. (1996)	as Zinc sulfate	Reproduction	Chronic
Calcium		NV		NV		NV		No value		
Selenium	Mallard duck	0.5	American Robin	0.5	1	0.5	Sample et al. (1996)	as sodium selenite	Reproduction	Chronic
Aroclor 1254	Ring necked pheasant	0.18	American Robin	0.18	1	0.18	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1254	Chicken	0.98	Chicken	0.98	1	0.98	Parsons (2000)		Reproduction	Chronic
Aroclor 1254	Mallard duck	1.45	Mallard duck	1.45	1	1.45	Parsons (2000)		Reproduction	Subchronic
Aroclor 1260	Japanese quail	7.04	Japanese quail	7.04	0.1	0.704	Parsons (2000)	LOAEL	Reproduction	Chronic
Aroclor 1260	Ring necked pheasant	0.18	Red-tailed hawk	0.18	1	0.18	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aroclor 1248	Screech owl	0.4	Screech owl	0.4	0.1	0.04	USEPA 1999b		Egg production, hatching success, fledging success	Chronic
Aroclor 1248	Chicken	0.49	herbivore/omnivore	0.49	1	0.49	Parsons (2000)		Reproduction, egg production, hatchability	Not reported
Aroclor 1016	Domestic Chicken	1.4	Domestic chicken	1.4	1	1.4	USEPA 1999b		Not reported	Not reported
Aroclor 1242	Japanese quail	10	herbivore/omnivores	0.0113	1	10	Sample et al. (1996)	LOAEL	Reproduction	45 days
Aroclor 1242	Screech owl	0.41	Red-tailed hawk	0.41	1	0.41	Sample et al. (1996)		Reproduction	Chronic
Total PCBs	Ring necked pheasant	0.18	American Robin	0.18	1	0.18	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic

[1] Concentrations are reported in milligrams per kilogram per day (mg/kg/day).

[2] References:

Agency for Toxic Substances and Disease Registry (ATSDR) 1997. *ATSDR's Toxicological Profiles on CD-ROM.* CRC Press, Inc. Boca Raton, Florida.

California Environmental Protection Agency (Cal/EPA) 2000. *California Wildlife Exposure Factor and Toxicity Database.* Office of Environmental Health and Hazard Assessment, California.

Sample, B.E., D.M. Opreski, and G.W. Suter. 1996. *Toxicological Benchmarks for Wildlife: 1996 Revision Report.* Report No. ES/ER/TM-86R1. Oak Ridge National Laboratory, Oak

Table A-6. Toxicity Reference Values for American Robin
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

United States Environmental Protection Agency (USEPA) 1999a. *Screening Level Ecological Risk Assessment Protocol for Hazardous Waste Combustion Facilities, Peer Review Draft.* Solid Waste and Emergency Response. EPA A530-D-99-001A. August.

United States Environmental Protection Agency (USEPA) 1999b. *Volume 2E - Baseline Ecological Risk Assessment: Hudson River Assessment: Hudson River PCBs Reassessment RI/FS.* USEPA Region II, U.S. Army Corps of Engineers, Kansas City District.

ES NOAEL	No observed adverse effect level for the endpoint species.
NV	No value was identified in the literature.
TRV	Toxicity reference value.
TS NOAEL	No observed adverse effect level for the test species.
UF	Uncertainty factor.

Table A-7. Toxicity Reference Values for Cottontail Rabbit
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Benzo[a]pyrene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)		Reproduction	Chronic
Dibenz[a,h]anthracene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[a]anthracene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Cyanide	Rat	68.7	Cottontail Rabbit	47.4	1	47.4	Sample et al. (1996)	as Potassium cyanide	Reproduction	Chronic
Acetone	Rat	10	Cottontail Rabbit	7.3	1	7.3	Sample et al. (1996)		Liver and kidney damage	Subchronic
Chloroform	Rat	15	Short-tailed Shrew	33	1	33	Sample et al. (1996)		Liver, kidney, gonad conditi	Subchronic
chloromethane	Mouse	100	Short-tailed Shrew	100	1	100	ATSDR (1997)			
Carbon disulfide	Rat	100	Rat	100	1	100	Parsons (2000)	10-day study; during critical lifestage	Gestation, Development	Subchronic
Carbon disulfide	Rabbit	11	Rabbit	11	0.1	1.1	IRIS (2001)		Reproduction	Chronic
2-Butanone (MEK)	Rat	1771	Short-tailed Shrew	3892	1	3892	Sample et al. (1996)			
Trichloroethene	Mouse	0.7	Cottontail Rabbit	0.278	1	0.278	Sample et al. (1996)		Hepatotoxicity	Subchronic
Acenapthene	Mouse	350	Mouse	350	1	350	Parsons (2000)		Hepatic effects	Chronic
Acenapthene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Di-n-butyl phthalate	Mouse	550	Cottontail Rabbit	219	1	219	Sample et al. 1996		Reproduction	Chronic
Phenanthrene	Mouse	350	Mouse	350	1	350	Parsons (2000)	as Acenaphthene	Hepatotoxicity	Chronic
Phenanthrene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Butyl benzyl phthalate	Rat	159	Rat	159	0.1	15.9	IRIS (2001)		Increased liver to body weight and increased liver to brain ratios	Chronic
Fluorene	Mouse	125	Mouse	125	0.1	12.5	Parsons (2000)	LOAEL	Hematological effects	Chronic
Fluorene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Carbazole		NV		NV		NV		No value		
Naphthalene	Mouse	53	Mouse	53	1	53	Parsons (2000)		Hematocrit changes	Chronic
Naphthalene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylnapthalene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
2-Methylnapthalene	Mouse	53	Mouse	53	1	53	Parsons (2000)	as Naphthalene	Hematocrit changes	Chronic
2-Methylphenol	Rat	50	Rat	50	1	50	IRIS (2001)		Neurotoxicity and Decreased body weight	Subchronic
1,2-Dichlorobenzene	Rat	85.7	Rat	85.7	0.1	8.57	IRIS (2001)		Liver and kidney toxicity	Chronic
Ethylbenzene	Rat	97.1	Rat	97.1	0.1	9.71	IRIS (2001)		Liver and kidney toxicity	Subchronic
2,4-Dimethylphenol	Mouse	50	Mouse	50	0.1	5	IRIS (2001)		Hematological and Behavioral	Subchronic
4-Methylphenol	Rat	50	Short-tailed Shrew	50	1	50	IRIS (1999)	as 2-Methylphenol		
Toluene	Mouse	26	Cottontail Rabbit	10.3	1	10.3	Sample et al. (1996)		Reproduction	Chronic
Phenol	Rat	60	Rat	60	0.1	6	IRIS (2001)		Reduced fetal body weight	Chronic
Bis(2-ethylhexyl)phthalate	Mouse	18.3	Cottontail Rabbit	7.3	1	7.3	Sample et al. (1996)		Reproduction	Chronic
Bis(2-ethylhexyl)phthalate	Mouse	13	Mouse	13	0.1	1.3	Parsons (2000)		Reproduction	Chronic
Di-n-octyl phthalate	Mouse	550	Cottontail Rabbit	219	1	219	Sample et al. (1996)	as Di-N-butylphthalate	Reproduction	Chronic
Hexachlorobenzene	Rat	1,600	Rat	1,600	0.1	160	USEPA 1999		Not reported	Chronic
Anthracene	Mouse	1,000	Mouse	1,000	1	1,000	Parsons (2000)		Heptotoxicity	Chronic
Anthracene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Tetrachloroethylene	Mouse	1.4	Cottontail Rabbit	0.56	1	0.56	Sample et al. (1996)		Heptotoxicity	Subchronic
Pyrene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Dibenzofuran	Mouse	0.01	Mouse	0.01	1	0.01	Parsons (2000)		Reproduction	Chronic
Benzo[g,h,i]perylene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Indeno[1,2,3-cd]pyrene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[b]fluoranthene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Fluoranthene	Mouse	125	Mouse	125	0.1	12.5	Parsons (2000)	LOAEL	Renal effects	Chronic
Fluoranthene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Benzo[k]fluoranthene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Acenapthylene	Mouse	350	Mouse	350	1	350	Parsons (2000)	as Acenaphthene	Hepatic effects	Chronic

Table A-7. Toxicity Reference Values for Cottontail Rabbit
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Test Species	TS NOAEL[1]	Endpoint Species	ES NOAEL[1]	UF	TRV[1]	Source[2]	Notes	Effect Tested	Study Duration
Acenapthylene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Chrysene	Mouse	1	Cottontail Rabbit	0.4	1	0.4	Sample et al. (1996)	as Benzo(a)pyrene	Reproduction	Chronic
Xylene (total)	Mouse	2.1	Cottontail Rabbit	0.835	1	0.835	Sample et al. (1996)	mixed isomers	Reproduction	Chronic
PCBs	Mink	0.14	Cottontail Rabbit	0.022	1	0.022	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aluminum	Mouse	1.93	Cottontail Rabbit	0.767	1	0.767	Sample et al. (1996)	as AlCl3	Reproduction	Chronic
Iron	Rat	2,550	Rat	2,550	0.01	25.5	Parsons (2000)	• LD50	Survival	Not reported
Lead	Rat	8	Cottontail Rabbit	5.88	1	5.88	Sample et al. (1996)	as lead acetate	Reproduction	Chronic
Magnesium		NV		NV		NV		No value		
Manganese	Rat	88	Cottontail Rabbit	65	1	65	Sample et al. (1996)	as Mn3O4	Reproduction	Chronic
Mercury	Mink	1	Cottontail Rabbit	0.96	1	0.96	Sample et al. (1996)	as mercuric chloride	Mortality, liver and kidney histology, reproduction	Chronic
Nickel	Rat	40	Cottontail Rabbit	29.4	1	29.4	Sample et al. (1996)	as nickel sulfate hexahydrate	Reproduction	Chronic
Potassium		NV		NV		NV		No value		
Silver	Rat	18.2	Rat	18.2	1	18.2	ATSDR (1997)	LOAEL	Decreased activity	Chronic
Silver	Rat	222	Rat	222	1	222	Parsons (2000)		Weight loss	Chronic
Sodium		NV		NV		NV		No value		
Thallium	Rat	0.0074	Cottontail Rabbit	0.005	1	0.005	Sample et al. (1996)	as thallium sulfate	Reproduction	Subchronic
Antimony	Mouse	0.125	Cottontail Rabbit	0.05	1	0.05	Sample et al. (1996)	as antimony potassium tartrate	Lifespan; longevity	Chronic
Arsenic	Mouse	0.126	Cottontail Rabbit	0.05	1	0.05	Sample et al. (1996)	as arsenite	Reproduction	Chronic
Arsenic	Mouse	5	Mouse	5	0.1	0.5	Parsons (2000)	LOAEL	Reproduction	Chronic
Barium	Rat	5.1	Cottontail Rabbit	4	1	4	Sample et al. (1996)	as Barium chloride	Growth, hypertension	Chronic
Beryllium	Rat	0.66	Cottontail Rabbit	0.49	1	0.49	Sample et al. (1996)	as Beryllium sulfate	Longevity; weight loss	Chronic
Cadmium	Rat	1	Cottontail Rabbit	0.709	1	0.709	Sample et al. (1996)	as Cadmium chloride	Reproduction	Chronic
Chromium	Rat	3.28	Cottontail Rabbit	2.41	1	2.41	Sample et al. (1996)	as Cr+6	Body weight and food consumption	Chronic
Copper	Mink	11.7	Cottontail Rabbit	11.2	1	11.2	Sample et al. (1996)	as Copper sulfate	Reproduction	Chronic
Copper	Rat	14	Rat	14	0.1	1.4	Parsons (2000)		Gastrointestinal efects	Chronic
Vanadium	Rat	0.21	Cottontail Rabbit	0.143	1	0.143	Sample et al. (1996)	as metavanadate (NaVO3)	Reproduction	Chronic
Zinc	Rat	160	Cottontail Rabbit	117.6	1	117.6	Sample et al. (1996)	as Zinc oxide	Reproduction	Chronic
Calcium		NV		NV		NV		No value		
Selenium	Rat	0.2	Cottontail Rabbit	0.147	1	0.147	Sample et al. (1996)	as Selenate (SeO4)	Reproduction	Chronic
Aroclor 1254	Mink	0.14	Cottontail Rabbit	0.022	1	0.022	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1260	Mink	0.14	Cottontail Rabbit	0.022	1	0.022	Sample et al. (1996)	as Aroclor 1254	Reproduction	Chronic
Aroclor 1248	Rhesus monkey	0.01	Cottontail Rabbit	0.014	1	0.014	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1016	Mink	1.37	Cottontail Rabbit	1.31	1	1.31	Sample et al. (1996)		Reproduction	Chronic
Aroclor 1242	Mink	0.069	Cottontail Rabbit	0.066	1	0.066	Sample et al. (1996)		Reproduction	Chronic

[1] Concentrations are reported in milligrams per kilogram per day (mg/kg/day).

[2] References:

Agency for Toxic Substances and Disease Registry (ATSDR) 1997. *ATSDR's Toxicological Profiles on CD-ROM.* CRC Press, Inc. Boca Raton, Florida.

California Environmental Protection Agency (Cal/EPA) 2000. *California Wildlife Exposure Factor and Toxicity Database.* Office of Environmental Health and Hazard Assessment, California.

Integrated Risk Information System (IRIS) 2001. Online database access site: www.epa.gov/iris

and G.W. Suter. 1996.

Protection Agency (USEPA)

1999a. *Screening Level*

Protection Agency (USEPA)

1999b. *Volume 2E -*

ES NOAEL	No observed adverse effect level for the endpoint species.
NV	No value was identified in the literature.
TRV	Toxicity reference value.
TS NOAEL	No observed adverse effect level for the test species.
UF	Uncertainty factor.

Table A-8. Hazard Quotient Calculations for Additional Terrestrial Receptors
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Surface Soil RME	Sediment RME	Surface Water RME	Biota Concentration				American Robin			Eastern Cottontail		
	Exposure Point Conc. (mg/kg)	Exposure Point Conc. (mg/kg)	Exposure Point Conc. (µg/l)	Plant (mg/kg)	Trophic Level 3 Fish (mg/kg)	Trophic Level 4 Fish (mg/kg)	Worms (mg/kg)	TDI (mg/kg/day)	NOAEL (mg/kg/day)	HQ	TDI (mg/kg/day)	NOAEL (mg/kg/day)	HQ
Aluminum	13,000	7,700	130	52	30	30	21,000	19,893	110	**180**	30	0.767	**39**
Antimony	1.4	1.7	1.8	0.28	0.0018	0.0578	2.3	2.18	0.0125	**170**	0.0263	0.050	0.53
Arsenic	18	5.8	ND	0.9	NAP	0.447	5.6	6.6501	5.14	**1.3**	0.106	0.050	**2.1**
Barium	160	87	66	24	4.983	4.983	260	246	21	**12**	2.32	4.0	0.58
Beryllium	0.94	0.42	0.41	0.0094	0.0078	0.0078	1.5	1.42	0.0660	**22**	0.00271	0.49	0.0055
Cadmium	1.0	1.6	ND	0.83	NAP	18	40	35.7	1.45	**25**	0.0709	0.709	0.10
Calcium	77,000	64,000	140,000	10,000	10,570	10,570	120,000	113,947	NV	NAP	1,003	NV	NA
Chromium	2,000	51	7.400	20	0.0222	1.510	3,200	3,033	1.0	**3,000**	5.65	2.41	**2.3**
Copper	890	61	8.7	360	2.523	7.1004	1,200	1,150	47	**24**	31.7	11.2	**2.8**
Cyanide	11	1.8	ND	1.5000	NAP	NAP	18	17	0.0530	**320**	0.15	47.4	0.0031
Iron	26,000	19,000	430	3,500	32	50	42,000	39,787	2.5500	**16,000**	342.4	25.5	**13**
Lead	65	81	4.0	7.6	0.18	0.996	170	157	1.13	**140**	0.761	5.88	0.13
Magnesium	18,000	18,000	25,000	2,400	1,888	1,888	29,000	27,480	NV	NC	238.6	NV	NA
Manganese	480	430	71	270	5.3605	16	47	86	997	0.087	23.4	65	0.36
Mercury	0.095	0.17	ND	0.0630	NAP	1.9142	1.7	1.52	0.45	**3.4**	0.005418	0.96	0.0056
Nickel	610	23	11	20	1.166	1.2	690	671	77	**8.7**	2.88	29.4	0.098
Potassium	2,400	2,200	2,700	320	204	204	3,900	3,694	NV	NC	32	NV	NA
Selenium	1.9	0.69	ND	1.3	NAP	11	3.1	2.93	0.50	**5.9**	0.112	0.147	0.76
Silver	ND	1.4	ND	NAP	NAP	0.0476	NAP	NAP	178	NC	NAP	18.2	NC
Sodium	410	370	100,000	55	NAP	13	660	639	NV	NC	19.4	NV	NA
Thallium	0.40	0.60	ND	0.0016	NAP	0.0204	0.6500	0.62	0.950	0.65	0.00093	0.0050	0.19
Vanadium	28	18	ND	0.28	NAP	0.1890	45	42.6	11	**3.7**	0.079	0.143	0.55
Zinc	1,300	200	33	1,800	32	150	20,000	17,920	15	**1,200**	152	118	**1.3**
Aroclor 1016	ND	5.8	ND	NAP	11	87	NAP	NAP	1.4	NC	NAP	1.31	NC
Aroclor 1242	ND	36	ND	NAP	68	538	NAP	NAP	10	NC	NAP	0.066	NC
Aroclor 1248	3,900	25	ND	39	47	374	55,000	49,311	0.040	**1,200,000**	11	0.014	**790**
Aroclor 1254	8.0	2.9	ND	0.080	5.4375	43	110	99	0.18	**550**	0.0226	0.022	**1.0**
Aroclor 1260	ND	1.1	ND	NAP	2.0625	16	NAP	NAP	0.704	NC	NAP	0.022	NC
Dioxins (Fish TEQ)	ND	0.000062	ND	NAP	0.0000	0.0000165	NAP	NAP	0.000014	NC	NAP	0.0000022	NC
1,2-Dichlorobenzene	0.059	ND	ND	NAP	NAP	NAP	NAP	0.0055	8.57	0.00064	0.00	8.570	0.0
2,4-Dimethylphenol	ND	0.17	ND	NAP	NAP	0.6494	NAP	NAP	5.0	NC	NAP	5.0	NAP
2-Methylnaphthalene	1.7	0.82	ND	1.70	NAP	0.5	0.43	0.54	0.10	**5.4**	0.1445	0.40	0.36
2-Methylphenol	ND	0.073	ND	NAP	NAP	0.2789	NAP	NAP	5.0	NC	NAP	50	NAP
4-Methylphenol	ND	0.29	ND	NAP	NAP	1.1078	NAP	NAP	50	NC	NAP	50	NC
Acenaphthene	40	2.1	ND	41	NAP	0.0483	10	12.6	0.10	**130**	3.48	350	0.010
Acenaphthylene	0.073	0.28	ND	0.074	NAP	0.0056	0.018	0.0228	1,000	0.000023	0.00629	350	0.000018
Anthracene	230	2.7	ND	230	NAP	2.8080	58	73	1,000	0.073	20	1,000	0.020
Benzo(a)anthracene	24	13	ND	0.48	NAP	7.5920	6.0	7.5614	4.0	**1.9**	0.0876	0.40	0.22
Benzo(a)pyrene	21	13	ND	21	NAP	9.6980	5.3	6.6608	3.60	**1.9**	1.78	0.40	**4.5**
Benzo(b)fluoranthene	24	13	ND	0.24	NAP	1.0140	6.0	7.5614	4.0	**1.9**	0.0677	0.40	0.17
Benzo(ghi)perylene	22	8.2	ND	22	NAP	0.3477	5.5	6.9313	4.0	**1.7**	1.87	0.40	**4.7**
Benzo(k)fluoranthene	8.4	5.1	ND	0.085	NAP	0.2101	2.1	2.647	4.0	0.66	0.0238	0.40	0.059
bis(2-Ethylhexyl)phthalate	2.3	0.83	ND	0.087	NAP	12	NAP	0.2129	1.1	0.19	0.0118	7.3	0.0016
Butyl benzyl phthalate	36	0.61	ND	1.4000	NAP	9.1134	NAP	3.3322	16	0.21	0.188	16	0.012
Carbazole	120	2.3	ND	4.6000	NAP	0.0460	30	37.8	NV	NC	0.62	NV	NAP
Chrysene	26	14	ND	0.49	NAP	7.1680	6.6	8.2806	4.0	**2.1**	0.0925	0.40	0.23
Dibenz(a,h)anthracene	39	3.7	ND	0.25	NAP	0.0718	9.8	12.3	4.0	**3.1**	0.0984	0.40	0.25
Dibenzofuran	21	1.7	ND	0.8	NAP	25	NAP	1.9438	0.218	**8.9**	0.108	0.010	**11**
Di-n-butyl phthalate	0.35	ND	ND	0.00	NAP	NAP	NAP	0.03240	0.11	0.29	0.00070	219	0.0000032
Di-n-octyl phthalate	56	ND	10	0.0090	0.4198	27	NAP	5.1848	0.11	**47**	0.114	219	0.00052
Fluoranthene	75	23	ND	77	NAP	18	19	24	4.0	**6.0**	6.54	12.5	0.52
Fluorene	65	2.0	ND	2.5000	NAP	0.15	16	20.3	1,000	0.020	0.34	12.5	0.027
Hexachlorobenzene	0.10	ND	ND	0.0026	NAP	NAP	NAP	0.0093	0.225	0.041	0.000415	160	0.0000026
Indeno(1,2,3-cd)pyrene	14	7.2	ND	0.055	NAP	0.2714	3.5	4.4108	4.0	**1.1**	0.0325	0.40	0.081
Naphthalene	2.1	2.3	ND	2.1	NAP	0.0665	0.53	0.67	1,000	0.00067	0.178	53	0.0034

Table A-8. Hazard Quotient Calculations for Additional Terrestrial Receptors
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Constituent	Surface Soil RME	Sediment RME	Surface Water RME	Biota Concentration				American Robin			Eastern Cottontail		
	Exposure Point Conc. (mg/kg)	Exposure Point Conc. (mg/kg)	Exposure Point Conc. (µg/l)	Plant (mg/kg)	Trophic Level 3 Fish (mg/kg)	Trophic Level 4 Fish (mg/kg)	Worms (mg/kg)	TDI (mg/kg/day)	NOAEL (mg/kg/day)	HQ	TDI (mg/kg/day)	NOAEL (mg/kg/day)	HQ
Phenanthrene	670	69	ND	25	NAP	148	170	213	1,000	0.21	3.40964	350	0.0097
Phenol	0.85	0.099	ND	0.0	NAP	0.3782	NAP	0.079	6.0	0.013	0.0043	6.00	0.00072
Pyrene	65	38	ND	2.5000	NAP	3.3592	16	20	4.0	**5.1**	0.34	0.40	0.84
2-Butanone	ND	0.0060	ND	NAP	NAP	0.00060	NAP	NAP	177	NC	NAP	3,892	NC
Acetone	ND	0.065	2.0	NAP	0.0013	0.0065	NAP	0.00028	1.0	0.00028	0.00028	7.3	0.000038
Carbon disulfide	0.038	0.0090	ND	NAP	NAP	0.018	NAP	0.0035	1.1	0.0032	0.000076	100	0.00000076
Chloroform	0.019	ND	ND	0.055	NAP	NAP	NAP	0.0018	1.50	0.0012	0.0046	33	0.0001
Chloromethane	ND	ND	0.20	NAP	0.00033	0.00024	NAP	0.000028	100	0.00000028	0.000028	100	0.00000028
Ethylbenzene	0.060	0.0020	ND	NAP	NAP	NAP	NAP	0.0056	9.710	0.00057	0.00012	47.3	0.0000025
Tetrachloroethene	0.012	0.0020	ND	NAP	NAP	0.0040	NAP	0.0011	0.140	0.0079	0.000024	0.56	0.000043
Toluene	0.21	ND	ND	NAP	NAP	NAP	NAP	0.019	2.60	0.0075	0.00042	10.3	0.000041
Trichloroethene	46	0.0030	1.0	NAP	0.339	0.339	NAP	4.2579	0.0700	**61**	0.092	0.278	0.33
Xylenes (total)	0.60	0.0060	ND	NAP	NAP	NAP	NAP	0.055536	85	0.00065	0.0012	0.835	0.0014

Notes:

HQ	Hazard quotient.
mg/kg	Milligrams per kilogram.
mg/kg/day	Milligrams per kilogram per day.
µg/l	Micrograms per liter.
NA	Not available.
NAP	Not applicable.
NC	Not calculated (either the constituent was not detected in the appropriate medium or due to insufficient toxicity or uptake information).
ND	Not detected.
NOAEL	No observed adverse effect level.
NV	No value.
RME	Reasonable maximum exposure.
TDI	Total daily intake.

ATTACHMENT B

NYSDEC analytical data for Ley Creek

Attachment B
List of Tables

B-1 Summary of Residues Detected by NYSDEC in Fish Tissue from Sampling Stations in Ley Creek

B-2 Constituents Detected by NYSDEC in Fish Tissue from Sampling Stations in Ley Creek - Sorted by Constituent and Fish Species

Table B-1. Summary of Residues Detected by NYSDEC in Fish Tissue from Sampling Stations in Ley Creek Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

TAMS Station ID	Constituent	Units	Minimum Detected Concentration	Maximum Detected Concentration	Arithmetic Mean of Detected Concentration	Arithmetic Mean (1/2 det limit for ND)	CV	Maximum Non-detect	Detection Limit Range
SLC1	Aroclor-1248	mg/kg-ww	0.11	1.1	0.50	0.50	71.21		.-.
SLC1	Aroclor-1260	mg/kg-ww	0.33	0.7	0.46	0.23	110.73	0.05	0.05-0.05
SLC1	Percent lipid	%-ww	0.10	3.0	1.2	1.2	93.46		.-.
SLC1	Percent moisture	%-ww	72.6	77.8	74.9	74.9	3.22		.-.
SLC1	Total PCB	mg/kg-ww	0.20	1.45	0.71	0.71	75.26		.-.
SLC2	Aroclor-1016	mg/kg-ww	2.8	2.8	2.8	2.8			.-.
SLC2	Aroclor-1254	mg/kg-ww	1.4	1.4	1.4	1.4			.-.
SLC2	Aroclor-1260	mg/kg-ww	0.80	0.80	0.80	0.80			.-.
SLC2	Lead	mg/kg-ww	0.64	0.64	0.64	0.82	31.04	1	1-1
SLC2	Mercury	mg/kg-ww	0.040	0.050	0.045	0.045	15.71		.-.
SLC2	Percent moisture	%-ww	75.4	83.8	79.6	79.6	7.46		.-.
SLC2	Total PCB	mg/kg-ww	5.0	5.0	5.0	5.0			.-.
SLC3	4,4'-DDD	mg/kg-ww	0.020	0.10	0.050	0.041	96.15	0.015	0.015-0.015
SLC3	4,4'-DDE	mg/kg-ww	0.030	0.16	0.080	0.080	69.97		.-.
SLC3	Aroclor-1016	mg/kg-ww	3.3	3.3	3.3	0.83	197.20	0.015	0.005-0.015
SLC3	Aroclor-1254	mg/kg-ww	2.7	2.7	2.7	0.68	196.59	0.015	0.005-0.015
SLC3	Aroclor-1260	mg/kg-ww	0.060	0.60	0.398	0.398	59.90		.-.
SLC3	gamma-BHC (Lindane)	mg/kg-ww	0.020	0.020	0.020	0.019	82.55	0.04	0.005-0.04
SLC3	Mercury	mg/kg-ww	0.36	1.0	0.68	0.68	66.55		.-.
SLC3	Percent lipid	%-ww	5.4	5.4	5.4	5.4			.-.
SLC3	Percent moisture	%-ww	70	76	73.8	73.8	3.57		.-.
SLC3	TCDD TEQ	ng/kg-ww	12.3	54.31					
SLC3	Total DDT	mg/kg-ww	0.030	0.26	0.12	0.12	84.36		.-.
SLC3	Total PCB	mg/kg-ww	0.060	6.6	1.9	1.9	165.54		.-.
SLC4	Aroclor-1248	mg/kg-ww	0.19	4.1	1.21	0.69	157.38	1.5	0.1-1.5
SLC4	Aroclor-1254	mg/kg-ww	0.53	2.7	1.5	0.66	150.66	0.05	0.05-0.05
SLC4	Aroclor-1260	mg/kg-ww	0.23	0.23	0.23	0.095	94.74	0.05	0.05-0.05
SLC4	Percent lipid	%-ww	0.070	7.3	1.1	1.1	182.84		.-.
SLC4	Percent moisture	%-ww	69.1	80.6	75	75	4.91		.-.
SLC4	Total PCB	mg/kg-ww	0.19	6.8	1.9	1.0	180.90	1.5	0.1-1.5
SLC4	Toxaphene	mg/kg-ww	9.0	9.0	9.0	9.0			.-.
SLC5	Aroclor-1248	mg/kg-ww	0.11	2.4	1.3	0.86	115.49	0.05	0.05-0.05
SLC5	Percent lipid	%-ww	0.10	0.50	0.17	0.17	97.98		.-.
SLC5	Total PCB	mg/kg-ww	0.11	2.4	1.3	0.91	104.00	0.2	0.2-0.2

Notes:

mg/kg-ww	Milligrams per kilogram based on wet weight.	SLC2	Ley Creek - 5M above LeMoyne Avenue bridge
ng/kg-ww	Nanograms per kilogram based on wet weight.	SLC3	Ley Creek - at Pard Street bridge
%-ww	Percentage based on wet weight.	SLC4	Ley Creek - GM Outfall 003
SLC1	Ley Creek - 0.5 Miles down from GM Outfall	SLC5	Ley Creek - Below confluence of North and South Branch

Table B-2. Constituents Detected by NYSDEC in Fish Tissue from Sampling Stations in Ley Creek - Sorted by Constituent and Fish Species
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Species	Constituent	Units	Minimum Detected Concentration	Maximum Detected Concentration	Arithmetic Mean of Detected Concentration	Arithmetic Mean (1/2 det limit for ND)	CV	Maximum Non-detect	Detection Limit Range
Carp	TCDD TEQ	ng/kg-ww	12.301	54.31					
Carp	4,4'-DDD	mg/kg-ww	0.030	0.10	0.065	0.048	93.87	0.015	0.015-0.015
Gizzard shad	4,4'-DDD	mg/kg-ww	0.020	0.020	0.020	0.020			.-.
Carp	4,4'-DDE	mg/kg-ww	0.030	0.16	0.083	0.083	81.68		.-.
Gizzard shad	4,4'-DDE	mg/kg-ww	0.070	0.070	0.070	0.070			.-.
Carp	Aroclor-1016	mg/kg-ww	3.3	3.3	3.3	0.50	244.49	0.050	0.015-0.05
Mountain crayfish	Aroclor-1016	mg/kg-ww	2.8	2.8	2.8	2.8			.-.
Carp	Aroclor-1248	mg/kg-ww	0.11	4.1	1.25	0.81	156.08	0.15	0.015-0.15
Golden shiner	Aroclor-1248	mg/kg-ww	0.19	0.86	0.48	0.73	79.75	1.5	1.5-1.5
Longnose dace	Aroclor-1248	mg/kg-ww	0.24	0.87	0.56	0.39	111.01	0.050	0.05-0.05
Pumpkinseed	Aroclor-1248	mg/kg-ww	0.11	2.4	1.13	0.94	112.14	0.15	0.15-0.15
White sucker	Aroclor-1248	mg/kg-ww	0.46	0.82	0.64	0.44	86.90	0.050	0.05-0.05
Carp	Aroclor-1254	mg/kg-ww	0.53	2.7	1.78	0.74	149.49	0.050	0.015-0.05
Mountain crayfish	Aroclor-1254	mg/kg-ww	1.4	1.4	1.4	1.4			.-.
Carp	Aroclor-1260	mg/kg-ww	0.060	0.70	0.45	0.33	84.61	0.050	0.05-0.05
Gizzard shad	Aroclor-1260	mg/kg-ww	0.41	0.41	0.41	0.41			.-.
Longnose dace	Aroclor-1260	mg/kg-ww	0.33	0.33	0.33	0.14	112.78	0.050	0.05-0.05
Mountain crayfish	Aroclor-1260	mg/kg-ww	0.80	0.80	0.80	0.80			.-.
White sucker	Aroclor-1260	mg/kg-ww	0.23	0.23	0.23	0.11	94.48	0.050	0.05-0.05
Mountain crayfish	Lead	mg/kg-ww	0.64	0.64	0.64	0.64			.-.
Carp	Mercury	mg/kg-ww	0.36	0.36	0.36	0.36			.-.
Gizzard shad	Mercury	mg/kg-ww	1.0	1.0	1.0	1.0			.-.
Mountain crayfish	Mercury	mg/kg-ww	0.040	0.040	0.040	0.040			.-.
Stickleback	Mercury	mg/kg-ww	0.050	0.050	0.050	0.050			.-.
Brown bullhead	Percent lipid	%-ww	0.070	0.070	0.070	0.070			.-.
Bluegill	Percent lipid	%-ww	0.25	1.1	0.57	0.57	66.95		.-.
Carp	Percent lipid	%-ww	0.17	7.3	2.83	2.83	88.39		.-.
Golden shiner	Percent lipid	%-ww	0.10	1.6	0.58	0.58	123.28		.-.
Longnose dace	Percent lipid	%-ww	0.10	0.50	0.27	0.27	78.06		.-.
Pumpkinseed	Percent lipid	%-ww	0.10	0.10	0.10	0.10	0		.-.
White sucker	Percent lipid	%-ww	0.10	0.20	0.13	0.13	43.3		.-.
Brown bullhead	Percent moisture	%-ww	80.6	80.6	80.6	80.6			.-.
Bluegill	Percent moisture	%-ww	72.6	75	74	74	1.35		.-.
Carp	Percent moisture	%-ww	69.1	79.3	74.73	74.73	4.55		.-.
Golden shiner	Percent moisture	%-ww	73.5	79.7	76.6	76.6	5.72		.-.
Gizzard shad	Percent moisture	%-ww	70	70	70	70			.-.
Mountain crayfish	Percent moisture	%-ww	75.4	75.4	75.4	75.4			.-.
Pumpkinseed	Percent moisture	%-ww	74	74	74	74			.-.
Stickleback	Percent moisture	%-ww	83.8	83.8	83.8	83.8			.-.
Carp	Total DDT	mg/kg-ww	0.030	0.26	0.13	0.13	94.19		.-.
Gizzard shad	Total DDT	mg/kg-ww	0.090	0.090	0.090	0.090			.-.

Table B-2. Constituents Detected by NYSDEC in Fish Tissue from Sampling Stations in Ley Creek - Sorted by Constituent and Fish Species
Former IFG Facility and Ley Creek Deferred Media, General Motors Corporation, Syracuse, New York

Species	Constituent	Units	Minimum Detected Concentration	Maximum Detected Concentration	Arithmetic Mean of Detected Concentration	Arithmetic Mean (1/2 det limit for ND)	CV	Maximum Non-detect	Detection Limit Range
Carp	Total PCB	mg/kg-ww	0.060	6.8	2.15	1.97	128.34	0.15	0.15-0.15
Golden shiner	Total PCB	mg/kg-ww	0.19	0.86	0.48	0.73	79.75	1.5	1.5-1.5
Gizzard shad	Total PCB	mg/kg-ww	0.41	0.41	0.41	0.41			.-.
Longnose dace	Total PCB	mg/kg-ww	0.24	1.2	0.72	0.55	103.57	0.20	0.2-0.2
Mountain crayfish	Total PCB	mg/kg-ww	5.0	5.0	5.0	5.0			.-.
Pumpkinseed	Total PCB	mg/kg-ww	0.11	2.4	1.13	0.94	112.14	0.15	0.15-0.15
White sucker	Total PCB	mg/kg-ww	0.46	1.05	0.76	0.57	76.41	0.20	0.2-0.2
Bluegill	Toxaphene	mg/kg-ww	9.0	9.0	9.0	9.0			.-.
Carp	gamma-BHC (Lindane)	mg/kg-ww	0.020	0.020	0.020	0.023	65.47	0.040	0.01-0.04

Notes:

mg/kg-ww	Milligrams per kilogram based on wet weight.	SLC2	Ley Creek - 5M above LeMoyne Avenue bridge
ng/kg-ww	Nanograms per kilogram based on wet weight.	SLC3	Ley Creek - at Pard Street bridge
%-ww	Percentage based on wet weight.	SLC4	Ley Creek - GM Outfall 003
SLC1	Ley Creek - 0.5 Miles down from GM Outfall	SLC5	Ley Creek - Below confluence of North and South Branch