PORSF 11.3.18.1 v.19
6/16/08

TAB NO. 7

USEPA SF
1445395

GATX Terminals Corporation
Summary of Findings for:

Portland Harbor Sediment Investigation Report
Environmental Protection Agency
Roy F. Weston, Inc.
May-98

Prepared by Michael Kinkley
10/22/98 11:41

	Statistics for Surface Sediments Only				Literature Toxicity Screening or Cleanup Criteria					
					EPA Priority Pollutant Criteria (Applicable to Water)		NOAA (* EPA Region V)	Oak Ridge National Lab, Screening Benchmarks		Washington State
Constituent	Minimum	Maximum	Mean	Median	FW/CCC (*CWC), ug/L	HH/Org, ug/L	ER-L	WQB, mg/L	SQB, mg/kg (* WA State)	FSQVs
INORGANICS (mg/kg, for all readings, except as specified by column headings)							mg/kg			mg/kg
Aluminum	15400	46200	37201	39150						
Antimony	4	13	4	2		4300.00	2.00			
Arsenic	4	16	3	2	190.00	0.14	8.20			57
Barium	87	322	177	179			20.00 *			
Beryllium	0.3	0.9	0.62	0.66						
Cadmium	0.2	2.2	0.44	0.4	1.00		1.20			5.1
Calcium	4430	14400	8157	8270						
Chromium	18	68	36	37	180.00		81.00			260
Cobalt	11	24	18	18						
Copper	15	543	54	44	11.00		34.00			390
Iron	29200	64500	42057	42400			17000.00 *			
Lead	5	262	25	15	2.50		46.70			450
Magnesium	3710	8560	6664	6965						
Manganese	277	909	648	675			300.00 *			
Mercury	0.02	0.86	0.08	0.06	0.01	0.15	0.15			0.41
Nickel	17	38	29	29	160.00	4600.00	20.90			
Potassium	570	1670	1257	1280						
Selenium	7	20	11	12	5.00					
Silver	0.3	1.9	0.87	0.8	3.40 *		1.00			6.1
Sodium	563	21500	1374	1100						
Thallium	4	27	10	9		6.30				
Titanium	1410	3200	1981	1960						
Vanadium	67	152	103	105						

GATX Terminals Corporation
Summary of Findings for:

Portland Harbor Sediment Investigation Report
Environmental Protection Agency
Roy F. Weston, Inc.
May-98

Prepared by Michael Kinkley
10/22/98 11:41

					Literature Toxicity Screening or Cleanup Criteria					
	Statistics for Surface Sediments Only				EPA Priority Pollutant Criteria (Applicable to Water)		NOAA (* EPA Region V)	Oak Ridge National Lab, Screening Benchmarks		Washington State
Constituent	Minimum	Maximum	Mean	Median	FW/CCC (*CWC), ug/L	HH/Org, ug/L	ER-L	WQB, mg/L	SQB, mg/kg (* WA State)	FSQVs
Zinc	65	539	127	102	100.00		150.00			410
SEMI-VOLATILE ORGANIC COMPOUNDS (ug/kg, for all readings, except as specified by column headings)							ug/kg			ug/kg
1,2 Dichlorobenzene	22	22	13	10		17000				
2-Methylnaphthalene	21	44000	603	10			70.00			
4-Methylphenol	20	1400	338	290					0.67 *	
Benzoic Acid									0.65 *	
bis(2-Ethylhexyl)phthalate	32	2100	199	100		5.9		0.00046	13000	
Butylbenzylphthalate	18	130	18	10						
Carbazole	19	10000	312	10						
Di-n-butylphthalate	21	180	16	10		12000		0.0255	2.74	
Di-n-octylphthalate	21	280	16	10				0.708	780000	
Dibenzofuran	20	3700	137	10				0.0204	2.29	
Dimethylphthalate	19	36	13	10		2900000				
Hexachlorobenzene	19	19	13	10		0.00077				
Hexachlorobutadiene	270	270	14	10		50				
Hexachloroethane	38	38	13	10		8.9				
Pentachlorophenol	88	110	64	49	13	8.2			0.36 *	
Phenol	52	55	13	10		4600000			0.42 *	
Naphthalene	20	130000	1179	23			160.00	0.0234	0.407	37000
Acenaphthylene	20	3600	90	10			44.00			1900
Acenaphthene	19	51000	1031	26			16.00		1.3	3500
Flourene	19	22000	687	26		14000	19.00			3600
Phenanthrene	21	170000	4718	150			240.00		1.8	5700

GATX Terminals Corporation
Summary of Findings for:

Portland Harbor Sediment Investigation Report
Environmental Protection Agency
Roy F. Weston, Inc.
May-98

Prepared by Michael Kinkley
10/22/98 11:41

	Statistics for Surface Sediments Only				Literature Toxicity Screening or Cleanup Criteria					
					EPA Priority Pollutant Criteria (Applicable to Water)		NOAA (* EPA Region V)	Oak Ridge National Lab, Screening Benchmarks		Washington State
Constituent	Minimum	Maximum	Mean	Median	FW/CCC (*CWC), ug/L	HH/Org, ug/L	ER-L	WQB, mg/L	SQB, mg/kg (* WA State)	FSQVs
Anthracene	19	26000	944	31		110000	85.00	0.000001	0.0003	2100
TOTAL LPAH	21	402400	8627	261			552.00			27000
Fluoranthene	22	110000	3431	245		370	600.00		6.2	11000
Pyrene	23	140000	4322	255		11000	665.00			9600
Benzo(a)anthracene	19	72000	1712	91		0.031	261.00	0.000027	0.108	5000
Chrysene	19	100000	2156	140		0.031	384.00			7400
Benzo(b)fluoranthene	19	80000	1463	100		0.031				
Benzo(k)fluoranthene	18	76000	1186	99		0.031				
TOTAL Benzofluoranthene	20	156000	2648	203						11000
Benzo(a)pyrene	19	94000	1997	120		0.031	430.00	0.000014	0.14	7000
Indeno(1,2,3-cd)pyrene	20	50000	951	70		0.031				730
Dibenzo(a,h)anthracene	19	25000	405	10		0.031	63.00			230
Benzo(g,h,l)perylene	18	44000	1193	65						1200
TOTAL HPAH	49	677000	18805	1266			1700.00			36000
TOTAL PAHs										60000
PESTICIDES/PCBs (ug/kg, for all readings, except as specificed by column headings)										
4,4'-DDD	1.1	460	59	7		0.00084		0.000005	0.032	
4,4'-DDE	0.84	220	23	3		0.00059	2.20			
4,4'-DDT	1	3100	278	15	0.001	0.00059	1.60	0.00004	0.745	
Endosulfan Sulfate	240	240	25	1		2				
Aroclor 1254	26	580	112	10	0.014	0.000045		0.00002	0.17	
Aroclor 1260	110	110	91	10	0.014	0.000045		0.0105	1099	
TOTAL PCB	26	580	185	20			22.70			

GATX Terminals Corporation
Summary of Findings for:

Portland Harbor Sediment Investigation Report
Environmental Protection Agency
Roy F. Weston, Inc.
May-98

Prepared by Michael Kinkley
10/22/98 11:41

					Literature Toxicity Screening or Cleanup Criteria					
	Statistics for Surface Sediments Only				EPA Priority Pollutant Criteria (Applicable to Water)		NOAA (* EPA Region V)	Oak Ridge National Lab, Screening Benchmarks		Washington State
Constituent	Minimum	Maximum	Mean	Median	FW/CCC (*CWC), ug/L	HH/Org, ug/L	ER-L	WQB, mg/L	SQB, mg/kg (* WA State)	FSQVs

GATX Terminals Corporation
Summary of Findings for:

Portland Harbor Sediment Investigation Report
Environmental Protection Agency
Roy F. Weston, Inc.
May-98

Prepared by Michael Kinkley
10/22/98 11:41

	Statistics for Surface Sediments Only				Literature Toxicity Screening or Cleanup Criteria					
					EPA Priority Pollutant Criteria (Applicable to Water)		NOAA (* EPA Region V)	Oak Ridge National Lab, Screening Benchmarks		Washington State
Constituent	Minimum	Maximum	Mean	Median	FW/CCC (*CWC), ug/L	HH/Org, ug/L	ER-L	WQB, mg/L	SQB, mg/kg (* WA State)	FSQVs
ORGANOTINS (ug/kg, for all readings, except as specificed in column headings)										
Tetra-n-butyl Tin	7.9	150	6	3						
Tributyl Tin	7	47000	1065	86						
Tributyl Tin (as TBT Cation	6.23	41830	948	77						
Dibutyl Tin	15	800	31	3						
Butyl Tin	6	740	18	3						
DIOXINS/FURANS (ng/kg, for all readings, except as specified in column headings) Only three samples were taken: in between the two terminals.										
HERBICIDES (ug/kg, for all readings, except as specified in column headings) Only seven samples were taken: in between the two terminal.										
TOTAL ORGANIC CARBON (%)										
TOC (%)	0.72	12	1.51	1.4						

GATX Terminals Corporation
Summary of Findings for:

Portland Harbor Sediment Investigation Report
Environmental Protection Agency
Roy F. Weston, Inc.
May-98

Prepared by Michael Kinkley
10/22/98 11:41

					Literature Toxicity Screening or Cleanup Criteria					
	Statistics for Surface Sediments Only				EPA Priority Pollutant Criteria (Applicable to Water)		NOAA (* EPA Region V)	Oak Ridge National Lab, Screening Benchmarks		Washington State
Constituent	Minimum	Maximum	Mean	Median	FW/CCC (*CWC), ug/L	HH/Org, ug/L	ER-L	WQB, mg/L	SQB, mg/kg (* WA State)	FSQVs

ACRONYMS	
CCC	Criterion Continuous Concentration
CMC	Criterion Maximum Concentration
ER-L	Effects Range -- Low
FW	Freshwater
FSQVs	Freshwater Sediment Quality Values
HH	Human Health
ORG	For Consumption of Organisms Only
SQB	Sediment Quality Benchmark
WQB	Water Quality Benchmark

LITERATURE SOURCES

40CFR131.36(b)(1), EPA's Section 304(a) Criteria for Priority Toxic Pollutants

Long, E.R., and L.G. Morgan. 1991. *The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program*. NOAA Technical Memorandum NOS OMA 52. National Oceanic and Atmospheric Administration. Updated in 1995.

Ginn, T.C., and R.A. Pastorak. 1992. *Assessment and Management of Contaminated Sediments in Puget Sound.*

Cubbage, J., D. Batts, and S. Breldenbach. 1997. *Creation and Analysis of Freshwater Sediment Quality Values in Washington State. WA DOE, Pub.* No. 97-323a.

*[under ORNL] WAC 173-204. Sediment Quality Standards.

Hull, R.N., and G.W. Sutter. 1994. *Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Sediment-Associated Biota: 1994 Revision.* Oak Ridge National Laboratory.

GATX Terminals Corporation
Summary of Findings for:

Portland Harbor Sediment Investigation Report
Environmental Protection Agency
Roy F. Weston, Inc.
May-98

Prepared by Michael Kinkley
10/22/98 11:41

					Literature Toxicity Screening or Cleanup Criteria					
	Statistics for Surface Sediments Only				EPA Priority Pollutant Criteria (Applicable to Water)		NOAA (* EPA Region V)	Oak Ridge National Lab, Screening Benchmarks		Washington State
Constituent	Minimum	Maximum	Mean	Median	FW/CCC (*CWC), ug/L	HH/Org, ug/L	ER-L	WQB, mg/L	SQB, mg/kg (* WA State)	FSQVs

ACRONYMS	
CCC	Criterion Continuous Concentration
CMC	Criterion Maximum Concentration
ER-L	Effects Range -- Low
FW	Freshwater
FSQVs	Freshwater Sediment Quality Values
HH	Human Health
ORG	For Consumption of Organisms Only
SQB	Sediment Quality Benchmark
WQB	Water Quality Benchmark

LITERATURE SOURCES

40CFR131.36(b)(1), EPA's Section 304(a) Criteria for Priority Toxic Pollutants

Long, E.R., and L.G. Morgan. 1991. *The Potential for Biological Effects of Sediment-Sorbed Contaminants Tested in the National Status and Trends Program*. NOAA Technical Memorandum NOS OMA 52. National Oceanic and Atmospheric Administration. Updated in 1995.

Ginn, T.C., and R.A. Pastorak. 1992. *Assessment and Management of Contaminated Sediments in Puget Sound.*

Cubbage, J., D. Batts, and S. Breldenbach. 1997. *Creation and Analysis of Freshwater Sediment Quality Values in Washington State. WA DOE, Pub.* No. 97-323a.

*[under ORNL] WAC 173-204. Sediment Quality Standards.

Hull, R.N., and G.W. Sutter. 1994. *Toxicological Benchmarks for Screening Contaminants of Potential Concern for Effects on Sediment-Associated Biota: 1994 Revision.* Oak Ridge National Laboratory.

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

SAMPLE LOCATION SHADING LEGEND

Note: Data may be rounded to nearest whole number.	
	Opposite Bank of River Samples
	In Between GATX Terminals Samples
	Down river Samples
	Adjacent to GATX Terminal Samples
	Up river Samples
Note: Suffix "S" samples are from subsurface cores.	

	Down River	Adjacent to GATX Linnton Terminal							Up-River to Linnton Terminal					
Constituent	SD015	SD017	SD017S	SD018	SD019	SD020	PW020 mg/L	SD024	SD026	SD028	SD030	SD035	SD035S	PW035 mg/L
INORGANICS (mg/kg, for al column headings)														
Aluminum	36500.00	36800.00	37100.00	41100.00	40700.00	39200.00	0.12	39400.00	38300.00	39400.00	36900.00	41000.00	40800.00	0.9
Antimony	U	U	U	U	U	5.00	U	U	U	6.00	5.00	U	U	U
Arsenic	U	U	U	U	U	U	0.002	U	U	U	5.00	U	U	0.008
Barium	175.00	170.00	175.00	201.00	192.00	187.00	0.138	179.00	177.00	183.00	174.00	182.00	189.00	0.124
Beryllium	0.60	0.60	0.60	0.70	0.70	0.63	U	0.60	0.70	0.68	0.62	0.70	0.66	U
Cadmium	0.30	0.20	0.40	0.40	0.40	0.40	U	0.30	0.20	0.30	0.30	0.30	0.60	U
Calcium	8150.00	8020.00	7490.00	8460.00	8540.00	8500.00	122	8280.00	8180.00	8370.00	8210.00	8590.00	8300.00	76.9
Chromium	35.00	35.00	35.00	39.00	39.00	36.00	U	37.00	36.00	36.00	36.00	38.00	38.00	U
Cobalt	18.00	18.00	17.00	19.00	19.00	19.00	0.015	18.00	18.00	18.00	17.00	19.00	17.00	0.011
Copper	39.00	38.00	41.00	45.00	42.00	41.00	U	41.00	42.00	41.00	41.00	44.00	47.00	U
Iron	40400.00	39600.00	40200.00	44100.00	43400.00	41800.00	8.95	41400.00	40200.00	39900.00	38900.00	42100.00	41100.00	26.9
Lead	14.00	15.00	27.00	17.00	14.00	12.00	U	14.00	9.00	9.00	9.00	9.00	26.00	U
Magnesium	6510.00	6560.00	6510.00	7120.00	7090.00	7190.00	41.8	6790.00	6910.00	6960.00	6700.00	7220.00	6760.00	24.3
Manganese	583.00	571.00	529.00	773.00	753.00	772.00	14.2	667.00	715.00	723.00	662.00	763.00	619.00	8.9
Mercury	0.05	0.05	0.11	0.06	0.05	0.06	U	0.06	0.06	0.05	0.06	0.06	0.16	U
Nickel	28.00	27.00	29.00	29.00	31.00	30.00	U	29.00	28.00	28.00	27.00	29.00	30.00	U
Potassium	1330.00	1340.00	1330.00	1580.00	1480.00	1250.00	3.9	1380.00	1240.00	1290.00	1230.00	1320.00	1330.00	4
Selenium	11.00	7.00	9.00	12.00	12.00	12.00	U	11.00	5.00	5.00	5.00	5.00	11.00	U
Silver	0.70	0.70	1.20	0.80	0.80	0.60	U	0.70	0.40	0.40	1.00	0.50	1.40	U
Sodium	1200.00	1150.00	1060.00	1140.00	1220.00	1080.00	15.5	1200.00	1040.00	1130.00	1070.00	1150.00	1130.00	15.1
Thallium	22.00	17.00	5.00	24.00	25.00	8.00	U	24.00	11.00	9.00	10.00	11.00	5.00	U
Titanium						1960.00						2040.00	1960.00	
Vanadium	98.00	98.00	98.00	108.00	109.00	105.00	0.004	103.00	100.00	101.00	99.00	110.00	103.00	0.004

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

SAMPLE LOCATION SHADING LEGEND

Note: Data may be rounded to nearest whole number.	
	Opposite Bank of River Samples
	In Between GATX Terminals Samples
	Down river Samples
	Adjacent to GATX Terminal Samples
	Up river Samples
Note: Suffix "S" samples are from subsurface cores.	

	Down River	Adjacent to GATX Linnton Terminal							Up-River to Linnton Terminal					
Constituent	**SD015**	**SD017**	**SD017S**	**SD018**	**SD019**	**SD020**	**PW020 mg/L**	**SD024**	**SD026**	**SD028**	**SD030**	**SD035**	**SD035S**	**PW035 mg/L**
Zinc	97.00	93.00	125.00	114.00	102.00	93.00	0.005	99.00	92.00	88.00	91.00	91.00	144.00	U
SEMI-VOLATILE ORGANIC except as specified by colu														
1,2 Dichlorobenzene	U	U	U	U	U	U		U	U	U	U	U	U	
2-Methylnaphthalene	38	U	730	420	U	U		U	U	U	46	U	860	
4-Methylphenol	25	U	280	U	U	370		U	U	U	21	U	160	
Benzoic Acid	U	U	U	U	U	U		U	U	U	U	U	U	
bis(2-Ethylhexyl)phthalate	U	U	120	U	U	120		U	U	U	U	U	U	
Butylbenzylphthalate	U	U	U	U	U	U		U	U	U	U	U	U	
Carbazole	U	U	U	U	U	U		U	U	U	37	U	U	
Di-n-butylphthalate	U	U	U	U	U	U		U	U	U	U	U	U	
Di-n-octylphthalate	U	U	U	U	U	U		U	91	U	U	U	U	
Dibenzofuran	U	U	220	48	U	U		U	U	28	110	U	470	
Dimethylphthalate	U	U	U	U	U	U		U	U	U	U	U	U	
Hexachlorobenzene	U	U	U	U	U	U		U	U	U	U	U	U	
Hexachlorobutadiene	U	U	U	U	U	U		U	U	U	U	U	U	
Hexachloroethane	U	U	U	U	U	U		U	U	U	U	U	U	
Pentachlorophenol	U	U	U	U	U	U		U	U	U	U	U	U	
Phenol	U	U	U	U	U	U		U	U	U	U	U	U	
Naphthalene	120	28	1500	150	29	U		30	30	23	57	20	1900	
Acenaphthylene	32	U	220	U	U	U		U	U	U	U	U	490	
Acenaphthene	50	30	2500	270	31	20		26	31	50	170	29	5400	
Flourene	40	29	1700	140	26	U		20	27	51	170	26	4600	
Phenanthrene	260	150	16000	440	150	88		120	130	220	1100	130	42000	

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

SAMPLE LOCATION SHADING LEGEND

Note: Data may be rounded to nearest whole number.	
	Opposite Bank of River Samples
	In Between GATX Terminals Samples
	Down river Samples
	Adjacent to GATX Terminal Samples
	Up river Samples
Note: Suffix "S" samples are from subsurface cores.	

	Down River	Adjacent to GATX Linnton Terminal							Up-River to Linnton Terminal					
Constituent	SD015	SD017	SD017S	SD018	SD019	SD020	PW020 mg/L	SD024	SD026	SD028	SD030	SD035	SD035S	PW035 mg/L
Anthracene	52	36	1800	70	43	33		28	29	35	130	25	7800	
TOTAL LPAH	554	273	23720	1070	279	141		224	247	379	1627	230	62190	
Fluoranthene	410	240	11000	390	230	96		210	160	210	1400	120	34000	
Pyrene	450	240	15000	360	220	120		220	220	210	1300	200	48000	
Benzo(a)anthracene	140	83	2400	120	90	57		83	81	74	280	74	9900	
Chrysene	210	130	3300	160	120	82		120	120	120	400	92	11000	
Benzo(b)fluoranthene	180	86	1800	140	100	58		99	92	80	270	83	7600	
Benzo(k)fluoranthene	180	110	2100	100	95	66		89	83	58	240	80	5400	
TOTAL Benzofluoranthene	360	196	3900	240	195	124		188	175	138	510	163	13000	
Benzo(a)pyrene	240	110	3500	150	130	78		120	120	78	180	110	13000	
Indeno(1,2,3-cd)pyrene	140	63	2500	79	75	61		66	94	61	94	76	8700	
Dibenzo(a,h)anthracene	38	U	680	24	22	19		21	U	U	U	U	2100	
Benzo(g,h,I)perylene	160	66	3300	90	81	49		69	59	36	62	77	13000	
TOTAL HPAH	2148	1128	45580	1613	1163	667		1097	1029	927	4226	912	152700	
TOTAL PAHs														
PESTICIDES/PCBs (ug/kg, 1 column headings)														
4,4'-DDD						1.40						1.10	23.00	
4,4'-DDE						1.20						1.40	U	
4,4'-DDT						1.90						1.40	18.00	
Endosulfan Sulfate						U						U	U	
Aroclor 1254						U						U	U	
Aroclor 1260						U						U	U	
TOTAL PCB						U						U	U	

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

SAMPLE LOCATION SHADING LEGEND

Note: Data may be rounded to nearest whole number.	
	Opposite Bank of River Samples
	In Between GATX Terminals Samples
	Down river Samples
	Adjacent to GATX Terminal Samples
	Up river Samples
Note: Suffix "S" samples are from subsurface cores.	

	Down River	Adjacent to GATX Linnton Terminal							Up-River to Linnton Terminal					
Constituent	**SD015**	**SD017**	**SD017S**	**SD018**	**SD019**	**SD020**	**PW020 mg/L**	**SD024**	**SD026**	**SD028**	**SD030**	**SD035**	**SD035S**	**PW035 mg/L**

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

SAMPLE LOCATION SHADING LEGEND

Note: Data may be rounded to nearest whole number.	
	Opposite Bank of River Samples
	In Between GATX Terminals Samples
	Down river Samples
	Adjacent to GATX Terminal Samples
	Up river Samples
Note: Suffix "S" samples are from subsurface cores.	

	Down River	Adjacent to GATX Linnton Terminal							Up-River to Linnton Terminal					
Constituent	**SD015**	**SD017**	**SD017S**	**SD018**	**SD019**	**SD020**	**PW020 mg/L**	**SD024**	**SD026**	**SD028**	**SD030**	**SD035**	**SD035S**	**PW035 mg/L**

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

SAMPLE LOCATION SHADING LEGEND

Note: Data may be rounded to nearest whole number.	
	Opposite Bank of River Samples
	In Between GATX Terminals Samples
	Down river Samples
	Adjacent to GATX Terminal Samples
	Up river Samples
Note: Suffix "S" samples are from subsurface cores.	

	Down River	Adjacent to GATX Linnton Terminal							Up-River to Linnton Terminal					
Constituent	**SD015**	**SD017**	**SD017S**	**SD018**	**SD019**	**SD020**	**PW020 mg/L**	**SD024**	**SD026**	**SD028**	**SD030**	**SD035**	**SD035S**	**PW035 mg/L**
ORGANOTINS (ug/kg, for a column headings)														
Tetra-n-butyl Tin						U	U					U	U	U
Tributyl Tin						8.20	U					14.00	U	U
Tributyl Tin (as TBT Cation						7.30	U					12.50	U	U
Dibutyl Tin						U	U					U	U	U
Butyl Tin						U						U	U	U
DIOXINS/FURANS (ng/kg, f Only three samples were ta														
HERBICIDES (ug/kg, for all Only seven samples were t														
TOTAL ORGANIC CARBON TOC (%)	1.60	2.30	2.60	1.80	1.50	1.30		1.60	1.50	1.20	1.30	1.20	3.30	

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

SAMPLE LOCATION SHADING LEGEND

Note: Data may be rounded to nearest whole number.	
	Opposite Bank of River Samples
	In Between GATX Terminals Samples
	Down river Samples
	Adjacent to GATX Terminal Samples
	Up river Samples
Note: Suffix "S" samples are from subsurface cores.	

	Down River	Adjacent to GATX Linnton Terminal							Up-River to Linnton Terminal					
Constituent	**SD015**	**SD017**	**SD017S**	**SD018**	**SD019**	**SD020**	**PW020 mg/L**	**SD024**	**SD026**	**SD028**	**SD030**	**SD035**	**SD035S**	**PW035 mg/L**

ACRONYMS
CCC
CMC
ER-L
FW
FSQVs
HH
ORG
SQB
WQB

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

Constituent	Peak Samples (For Surface Sediments)	Down River		Adjacent to GATX Willbridge Terminal			Up-River to Willbridge Terminal							
		SD100	SD100S	SD104	SD105	SD107	SD109	SD110	SD112	SD113	SD117	SD117S	SD120	SD120S
INORGANICS (mg/kg, for al column headings)														
Aluminum	SD139	27000.00	34400.00	29200.00	40700.00	42300.00	41700.00	42500.00	42800.00	43700.00	28600.00	37900.00	42200.00	43700.00
Antimony	SD031	4.00	U	U	U	U	6.00	U	U	U	U	U	U	U
Arsenic	SD133	4.00	U	U	U	U	6.00	U	U	U	U	U	U	U
Barium	SD008	126.00	125.00	134.00	176.00	179.00	180.00	188.00	183.00	190.00	153.00	185.00	177.00	203.00
Beryllium	SD075		0.49	0.49	0.70	0.70	0.60	0.70	0.70	0.70	0.52	0.54	0.70	0.63
Cadmium	SD023		0.60	0.30	0.30	0.50	0.50	0.50	0.50	0.40	0.40	0.50	0.50	0.60
Calcium	SD133	5940.00	4310.00	4430.00	8230.00	8380.00	8370.00	8630.00	8270.00	8690.00	7790.00	8750.00	8430.00	8500.00
Chromium	SD128	28.00	36.00	28.00	38.00	38.00	38.00	38.00	38.00	39.00	28.00	35.00	38.00	41.00
Cobalt	SD075	12.00	17.00	13.00	18.00	18.00	19.00	20.00	19.00	20.00	16.00	18.00	18.00	20.00
Copper	SD133	23.00	42.00	31.00	43.00	45.00	48.00	48.00	47.00	46.00	30.00	43.00	42.00	54.00
Iron	SD075	29200.00	36100.00	32800.00	42900.00	43600.00	43700.00	43800.00	43400.00	44100.00	35200.00	39900.00	42300.00	44200.00
Lead	SD032	11.00	20.00	10.00	11.00	16.00	16.00	14.00	14.00	13.00	20.00	22.00	17.00	23.00
Magnesium	SD134	4390.00	5670.00	4960.00	6930.00	7150.00	7360.00	7620.00	7360.00	7520.00	6380.00	7310.00	7000.00	7390.00
Manganese	SD075	377.00	344.00	277.00	688.00	676.00	721.00	836.00	715.00	801.00	467.00	558.00	677.00	788.00
Mercury	SD128	0.04	0.06	0.07	0.06	0.07	0.06	0.07	0.06	0.07	0.11	0.17	0.06	0.08
Nickel	SD085	19.00	27.00	21.00	29.00	29.00	30.00	31.00	29.00	31.00	24.00	28.00	28.00	32.00
Potassium	SD008	1160.00	1420.00	1060.00	1260.00	1360.00	1300.00	1300.00	1350.00	1350.00	1190.00	1400.00	1390.00	1390.00
Selenium	SD139	9.00	10.00	10.00	13.00	11.00	15.00	14.00	13.00	15.00	11.00	7.00	10.00	13.00
Silver	SD139	0.80	1.10	0.90	1.20	0.90	0.90	0.80	0.70	0.80	0.90	1.00	0.80	1.10
Sodium	SD104	979.00	57800.00	21500.00	1410.00	1120.00	1010.00	1010.00	1060.00	1120.00	1050.00	1180.00	1140.00	1080.00
Thallium	SD043	8.00	6.00	5.00	10.00	6.00	10.00	11.00	8.00	11.00	9.00	4.00	6.00	6.00
Titanium	SD077										1900.00	2020.00		
Vanadium	SD075	74.00	94.00	79.00	107.00	109.00	108.00	109.00	109.00	110.00	92.00	105.00	105.00	107.00

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

Constituent	Peak Samples (For Surface Sediments)	Down River		Adjacent to GATX Willbridge Terminal			Up-River to Willbridge Terminal							
		SD100	SD100S	SD104	SD105	SD107	SD109	SD110	SD112	SD113	SD117	SD117S	SD120	SD120S
Zinc	SD133	65.00	110.00	70.00	97.00	108.00	112.00	108.00	108.00	105.00	101.00	157.00	104.00	142.00
SEMI-VOLATILE ORGANIC except as specified by colu														
1,2 Dichlorobenzene	SD078	U	U	U	U	U	U	U	U	U	U	U	U	U
2-Methylnaphthalene	SD064	U	U	U	U	22	U	U	U	U	U	56	U	110
4-Methylphenol	SD139	250	410	1300	590	770	580	700	640	1100	360	370	880	45
Benzoic Acid	SD092S	U	720	U	U	U	U	U	U	U	U	U	U	U
bis(2-Ethylhexyl)phthalate	SD136	68	250	320	270	430	240	130	130	210	180	U	150	300
Butylbenzylphthalate	SD151	U	U	19	U	U	U	U	U	U	U	U	U	U
Carbazole	SD032	U	U	U	U	U	U	22	U	U	U	U	U	U
Di-n-butylphthalate	SD097	U	U	U	U	23	U	U	U	U	U	U	U	U
Di-n-octylphthalate	SD128	U	U	U	U	U	U	U	U	U	U	U	U	U
Dibenzofuran	SD064	U	U	U	U	44	35	24	U	U	U	U	U	200
Dimethylphthalate	SD056	U	U	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobenzene	SD085	U	U	U	U	U	U	U	U	U	U	U	U	U
Hexachlorobutadiene	SD092	U	U	U	U	U	U	U	U	U	U	U	U	U
Hexachloroethane	SD092	U	U	U	U	U	U	U	U	U	U	U	U	U
Pentachlorophenol	SD003	U	U	U	U	U	U	U	U	U	U	U	U	U
Phenol	SD134	U	52	U	U	U	U	U	U	U	U	19	U	U
Naphthalene	SD064	U	U	U	U	21	26	34	U	21	35	110	U	97
Acenaphthylene	SD065	U	U	U	U	U	U	U	U	U	U	34	U	U
Acenaphthene	SD064	U	U	U	U	54	49	39	25	26	25	35	U	380
Flourene	SD064	U	U	U	U	66	58	46	26	29	U	34	U	300
Phenanthrene	SD064	39	41	40	71	350	300	210	150	150	110	260	25	1300

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

Constituent	Peak Samples (For Surface Sediments)	Down River		Adjacent to GATX Willbridge Terminal			Up-River to Willbridge Terminal							
		SD100	SD100S	SD104	SD105	SD107	SD109	SD110	SD112	SD113	SD117	SD117S	SD120	SD120S
Anthracene	SD064	U	U	U	U	38	34	22	21	31	24	48	U	160
TOTAL LPAH	SD064	39	41	40	71	529	467	351	222	257	194	521	25	2237
Fluoranthene	SD064	59	52	86	120	430	360	180	370	180	120	240	56	1100
Pyrene	SD062	72	56	78	120	390	300	160	270	150	180	300	50	1000
Benzo(a)anthracene	SD062	28	20	34	38	100	100	45	81	49	66	63	23	190
Chrysene	SD062	40	35	58	58	170	150	64	110	72	86	98	38	310
Benzo(b)fluoranthene	SD032	30	27	54	36	84	100	32	65	45	63	52	24	120
Benzo(k)fluoranthene	SD032	27	20	42	46	93	94	45	76	51	64	66	20	130
TOTAL Benzofluoranthene	SD032	57	47	96	82	177	194	77	141	96	127	118	44	250
Benzo(a)pyrene	SD032	36	29	49	36	79	91	44	71	48	77	73	24	100
Indeno(1,2,3-cd)pyrene	SD032	31	20	48	29	52	57	31	49	30	58	43	U	42
Dibenzo(a,h)anthracene	SD032	19	U	U	U	U	20	U	U	U	U	U	U	U
Benzo(g,h,l)perylene	SD032	33	24	47	22	37	46	20	37	25	62	63	U	46
TOTAL HPAH	SD032	356	283	496	505	1435	1298	621	1129	650	776	998	235	3038
TOTAL PAHs														
PESTICIDES/PCBs (ug/kg, f column headings)														
4,4'-DDD	SD092										4.70	20.00		
4,4'-DDE	SD097										2.60	5.20		
4,4'-DDT	SD097										4.70	22.00		
Endosulfan Sulfate	SD092										U	U		
Aroclor 1254	SD133										U	72.00		
Aroclor 1260	SD150										U	U		
TOTAL PCB	SD133										U	72.00		

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

Constituent	Peak Samples (For Surface Sediments)	Down River		Adjacent to GATX Willbridge Terminal			Up-River to Willbridge Terminal							
		SD100	SD100S	SD104	SD105	SD107	SD109	SD110	SD112	SD113	SD117	SD117S	SD120	SD120S

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

Constituent	Peak Samples (For Surface Sediments)	Down River		Adjacent to GATX Willbridge Terminal			Up-River to Willbridge Terminal							
		SD100	SD100S	SD104	SD105	SD107	SD109	SD110	SD112	SD113	SD117	SD117S	SD120	SD120S
ORGANOTINS (ug/kg, for a column headings)														
Tetra-n-butyl Tin	SD012										U	U		
Tributyl Tin	SD012										U	U		
Tributyl Tin (as TBT Cation	SD012										U	U		
Dibutyl Tin	SD012										U	U		
Butyl Tin	SD012										U	U		
DIOXINS/FURANS (ng/kg, f Only three samples were ta														
HERBICIDES (ug/kg, for all Only seven samples were t	SD080													
TOTAL ORGANIC CARBON TOC (%)	SD006	0.75	1.70	1.30	1.50	1.60	1.80	1.70	1.50	1.70	0.78	1.30	1.60	1.80

GATX Terminals Corporati
Summary of Findings for:

Prepared by Michael Kinkle
10/22/98 11:41

Constituent	Peak Samples (For Surface Sediments)	Down River		Adjacent to GATX Willbridge Terminal			Up-River to Willbridge Terminal							
		SD100	SD100S	SD104	SD105	SD107	SD109	SD110	SD112	SD113	SD117	SD117S	SD120	SD120S
ACRONYMS														
CCC														
CMC														
ER-L														
FW														
FSQVs														
HH														
ORG														
SQB														
WQB														