Appendix C

Supporting Data

2006 SBOO Stations

Sediment Characteristics

Appendix C.1

Constituents and method detection limits (MDL) for sediment samples analyzed for the SBOO monitoring program during January and July 2006.

Parameter	Units	MDL January	MDL July
Total Solids	WT%	0.24	0.24
Total Volatile Solids	WT%	0.11	0.11
Sulfides-Total	MG/KG	0.14	0.14
Total Nitrogen	WT%	0.005	0.01
Total Organic Carbon	WT%	0.01	0.01
Polycyclic Aromatic Hydrocarbons (PAHs)			
1-methylnaphthalene	UG/KG		
1-methylphenanthrene	UG/KG	41	41
2,3,5-trimethylnaphthalene	UG/KG	134	134
2,6-dimethylnaphthalene	UG/KG	106	106
2-methylnaphthalene	UG/KG		
3,4-benzo(B)fluoranthene	UG/KG	63	63
Acenaphthene	UG/KG	11	11
Acenaphthylene	UG/KG	11	11
Anthracene	UG/KG	14	14
Benzo[A]anthracene	UG/KG	34	34
Benzo[A]pyrene	UG/KG	55	55
Benzo[G,H,I]perylene	UG/KG	56	56
Benzo[K]fluoranthene	UG/KG	82	82
Benzo[e]pyrene	UG/KG	57	57
Biphenyl	UG/KG		
Chrysene	UG/KG	36	36
Dibenzo(A,H)anthracene	UG/KG	32	32
Fluoranthene	UG/KG	24	24
Fluorene	UG/KG	18	
Indeno(1,2,3-CD)pyrene	UG/KG	76	76
Naphthalene	UG/KG	21	21
Perylene	UG/KG	58	58
Phenanthrene	UG/KG	32	32
Pyrene	UG/KG	35	35

Parameter	Units	MDL January	MDL July
Polychlorinated Biphenyl Congeners (PCBs)			
PCB 18	NG/KG	700	700
PCB 28	NG/KG	700	700
PCB 37	NG/KG	700	700
PCB 44	NG/KG	700	700
PCB 49	NG/KG	700	700
PCB 52	NG/KG	700	700
PCB 66	NG/KG	700	700
PCB 70	NG/KG	700	700
PCB 74	NG/KG	700	700
PCB 77	NG/KG	700	700
PCB 81	NG/KG	700	700
PCB 87	NG/KG	700	700
PCB 99	NG/KG	700	700
PCB 101	NG/KG	700	700
PCB 105	NG/KG	700	700
PCB 110	NG/KG	700	700
PCB 114	NG/KG	700	700
PCB 118	NG/KG	700	700
PCB 119	NG/KG	700	700
PCB 123	NG/KG	700	700
PCB 126	NG/KG	1500	1500
PCB 128	NG/KG	700	700
PCB 138	NG/KG	700	700
PCB 149	NG/KG	700	700
PCB 151	NG/KG	700	700
PCB 153/168	NG/KG	700	700
PCB 156	NG/KG	700	700
PCB 157	NG/KG	700	700
PCB 158	NG/KG	700	700
PCB 167	NG/KG	700	700
PCB 169	NG/KG	700	700
PCB 170	NG/KG	700	700
PCB 177	NG/KG	700	700
PCB 180	NG/KG	400	400
PCB 183	NG/KG	700	700
PCB 187	NG/KG	700	700
PCB 189	NG/KG	400	400
PCB 194	NG/KG	700	700
PCB 201	NG/KG	700	700
PCB 206	NG/KG	700	700

Appendix C.1 *continued*.

Parameter	Units	MDL January	MDL July
Chlorinated pesticides			
BHC, Alpha isomer	NG/KG	400	400
BHC, Beta isomer	NG/KG	400	400
BHC, Delta isomer	NG/KG	400	400
BHC, Gamma isomer	NG/KG	400	400
Alpha (cis) Chlordane	NG/KG	700	700
Cis Nonachlor	NG/KG	700	700
Gamma (trans) Chlordane	NG/KG	700	700
Heptachlor	NG/KG	700	700
Heptachlor epoxide	NG/KG	700	700
Methoxychlor	NG/KG	700	700
Oxychlordane	NG/KG	700	700
Trans Nonachlor	NG/KG	700	700
o,p-DDD	NG/KG	400	400
o,p-DDE	NG/KG	700	700
o,p-DDT	NG/KG	700	700
p,-p-DDMU	NG/KG		
p,p-DDD	NG/KG	700	700
p,p-DDE	NG/KG	400	400
p,p-DDT	NG/KG	700	700
Aldrin	NG/KG	700	700
Alpha Endosulfan	NG/KG	700	700
Beta Endosulfan	NG/KG	700	700
Dieldrin	NG/KG	700	700
Endosulfan Sulfate	NG/KG	700	700
Endrin	NG/KG	700	700
Endrin aldehyde	NG/KG	700	700
Hexachlorobenzene	NG/KG	400	400
Mirex	NG/KG	700	700

Parameter	Units	MDL January	MDL July
Metals			
Aluminum (Al)	MG/KG	1.15	1.2
Antimony (Sb)	MG/KG	0.13	0.13
Arsenic (As)	MG/KG	0.33	0.33
Barium (Ba)	MG/KG	0.001	0.001
Beryllium (Be)	MG/KG	0.001	0.001
Cadmium (Cd)	MG/KG	0.010	0.01
Chromium (Cr)	MG/KG	0.016	0.016
Copper (Cu)	MG/KG	0.027	0.028
Iron (Fe)	MG/KG	0.76	0.76
Lead (Pb)	MG/KG	0.142	0.142
Manganese (Mn)	MG/KG	0.003	0.003
Mercury (Hg)	MG/KG	0.003	0.003
Nickel (Ni)	MG/KG	0.036	0.036
Selenium (Se)	MG/KG	0.24	0.24
Silver (Ag)	MG/KG	0.012	0.013
Thallium (Tl)	MG/KG	0.221	0.22
Tin (Sn)	MG/KG	0.058	0.059
Zinc (Zn)	MG/KG	0.052	0.052

Appendix C.2

SBOO sediment statistics January 2006.

Station	Mean (mm)	Mean (phi)	SD (phi)	Median (phi)	Skewness (phi)	Kurtosis (phi)	Coarse (%)	Sand (%)	Silt (%)	Clay (%)	Sediment observations
19 m stations											
I35	0.065	4.0	1.4	3.7	0.3	1.2	0.0	60.2	37.4	2.4	Fine sand, silt, tube debris
I34	0.702	0.5	1.3	0.7	-0.1	0.7	35.2	62.9	1.8	0.0	Shell hash, cobble, coarse red relict sand, coarse sand
I31	0.131	2.9	0.7	3.0	-0.2	2.0	0.3	93.1	6.6	0.0	Fine sand
I23	0.112	3.2	0.7	3.1	0.2	5.7	0.3	91.1	8.5	0.1	Shell hash, fine sand, silt
I18	0.111	3.2	0.6	3.0	0.3	3.3	0.3	91.5	8.2	0.0	Fine sand
I10	0.116	3.1	0.7	3.0	0.2	4.3	0.3	91.5	8.1	0.0	Shell hash, fine sand, silt
I4	0.132	2.9	0.9	3.0	-0.1	1.4	0.3	92.7	7.0	0.0	Fine sand, silt
28 m stations											
I33	0.128	3.0	1.0	3.0	0.1	28.8	0.8	88.1	10.5	0.7	Shell hash, fine sand, silt
I30	0.110	3.2	1.0	3.2	-0.2	1.6	0.8	86.4	12.5	0.2	Fine sand, silt
I27	0.116	3.1	0.8	3.1	0.0	1.5	0.3	88.7	11.0	0.0	Fine sand, silt
I22	0.201	2.3	1.1	2.5	-0.2	1.1	0.9	92.9	6.2	0.0	Fine sand, silt
I16	0.144	2.8	1.1	2.8	0.1	1.5	0.3	90.4	9.0	0.2	Shell hash, fine sand, organic debris
I15	0.215	2.2	1.2	2.3	-0.1	1.0	1.9	91.0	7.1	0.0	Fine sand
I14	0.116	3.1	1.2	3.1	0.0	1.8	0.3	85.5	13.5	0.8	Fine sand, silt
I12	0.386	1.4	0.8	1.4	0.0	0.9	4.8	95.1	0.1	0.0	Shell hash, sand, fine sand
I9	0.089	3.5	1.1	3.2	0.5	2.4	0.3	78.1	20.2	1.4	Fine sand, silt, tube debris
I6	0.484	1.0	0.8	1.0	0.2	1.0	7.4	92.6	0.0	0.0	Shell hash, red relict sand
I3	0.412	1.3	0.8	1.3	0.0	0.9	5.7	94.3	0.0	0.0	Fine sand
I2	0.343	1.5	0.8	1.6	-0.2	0.9	4.3	95.6	0.0	0.0	Fine sand
38 m stations											
I29	0.078	3.7	1.2	3.5	0.3	1.7	0.2	69.3	28.9	1.6	Fine sand, silt, organic debris
I21	0.606	0.7	0.6	0.7	0.2	1.1	11.1	88.9	0.0	0.0	Shell hash, fine and coarse red relict sand
I13	0.606	0.7	0.6	0.7	0.2	1.1	10.7	89.3	0.0	0.0	Shell hash, coarse and fine red relict sand
I8	0.441	1.2	0.8	1.2	0.1	0.9	6.1	93.9	0.0	0.0	Fine sand
55 m stations											
I28	0.110	3.2	2.4	3.2	0.1	1.2	5.5	63.7	27.8	3.0	Coarse black sand, silt
I20	0.179	2.5	2.6	1.4	0.6	0.8	8.4	67.0	22.6	2.1	Shell hash, coarse red relict sand
I7	0.561	0.8	0.7	0.8	0.2	1.1	9.4	90.5	0.0	0.0	Red relict sand
I1	0.132	2.9	0.9	2.9	0.1	2.5	0.0	91.7	8.1	0.3	Shell hash, fine sand

Appendix C.2 *continued*

SBOO sediment statistics July 2006.

Station	Mean (mm)	Mean (phi)	SD (phi)	Median (phi)	Skewness (phi)	Kurtosis (phi)	Coarse (%)	Sand (%)	Silt (%)	Clay (%)	Sediment observations
19 m stations											
I35	0.062	4.0	1.5	3.7	0.4	1.1	0.0	58.8	38.4	2.8	Fine sand, silt, organic debris
I34	0.319	1.7	0.9	1.7	-0.2	0.9	4.4	95.6	0.0	0.0	Sand, shell hash
I31	0.117	3.1	0.5	3.0	0.3	2.0	0.0	91.6	8.4	0.1	Fine sand, silt
I23	0.801	0.3	1.5	0.4	0.1	1.1	37.7	55.6	6.7	0.0	Coarse sand, shell hash, fine sand, silt
I18	0.111	3.2	0.7	3.1	0.3	1.8	0.0	88.4	11.4	0.2	Fine sand, silt
I10	0.119	3.1	0.6	3.0	0.3	2.1	0.0	91.4	8.5	0.0	Fine sand, silt
I4	0.137	2.9	0.8	2.9	0.0	1.8	0.0	91.7	8.3	0.1	Sand, fine sand, silt
28 m stations											
I33	0.119	3.1	1.1	2.9	0.4	1.7	0.0	85.0	13.9	1.1	Fine sand, silt, organic debris
I30	0.093	3.4	1.0	3.4	0.3	1.7	0.0	81.2	17.7	1.1	Fine sand, silt
I27	0.102	3.3	0.7	3.2	0.3	1.3	0.0	87.3	12.5	0.2	Fine sand, silt
I22	0.111	3.2	1.0	3.1	0.3	2.0	0.0	85.3	14.2	0.5	Fine sand, silt
I16	0.176	2.5	0.9	2.6	0.0	1.6	0.0	92.8	7.1	0.1	Sand, fine sand, silt
I15	0.431	1.2	0.8	1.2	0.0	0.9	5.5	94.0	0.5	0.0	Sand, fine sand, silt
I14	0.106	3.2	0.8	3.1	0.4	2.0	0.0	85.9	13.5	0.5	Fine sand, silt
I12	0.137	2.9	0.8	2.9	0.1	2.1	0.0	91.0	8.9	0.2	Fine sand, silt, organic debris
I9	0.097	3.4	0.9	3.3	0.3	1.7	0.0	82.9	16.6	0.6	Fine sand, silt, organic debris
I6	0.553	0.9	0.7	0.8	0.2	1.1	9.7	89.9	0.4	0.0	Shell hash, fine red relict sand
I3	0.387	1.4	0.8	1.4	-0.1	0.9	5.4	94.6	0.0	0.0	Sand
I2	0.342	1.5	0.8	1.6	-0.1	0.9	4.2	95.8	0.0	0.0	Sand
38 m stations											
I29	0.082	3.6	1.1	3.5	0.3	1.5	0.0	70.6	27.8	1.6	Coarse and fine sand, silt, organic debris
I21	0.611	0.7	0.6	0.6	0.2	1.1	10.5	89.5	0.0	0.0	Relict red sand
I13	0.450	1.2	0.9	1.1	0.2	1.2	5.8	92.8	1.4	0.0	Cobble, red relict sand, shell hash
I8	0.515	1.0	0.8	0.8	0.3	0.7	8.6	88.7	2.6	0.0	Sand
55 m stations											
I28	0.058	4.1	1.7	3.7	0.4	1.1	2.2	59.2	35.5	3.2	Coarse black sand, silt
I20	0.424	1.2	1.0	1.2	0.2	1.0	6.3	89.6	4.1	0.0	Red relict sand, coarse sand, fine sand, silt
I7	0.539	0.9	0.9	0.8	0.3	1.2	11.3	86.5	2.2	0.0	Relict red sand
I1	0.129	3.0	0.9	2.9	0.2	2.6	0.0	90.7	8.9	0.3	Fine sand, silt