

Appendix C-T3. Freshwater sediment toxicity testing and pore-water and elutriate tests

Tool/test species	Method	Duration	Measurement endpoints
Selected bedded-sediment freshwater toxicity tests			
<i>Acute tests</i>			
<i>Hyalella azteca</i> (amphipod)	ASTM 2005, 2008; USEPA 2000c	10–14 day	Survival
<i>Chironomus</i> spp. (midge)	ASTM 2005, 2008; USEPA 2000c	10 day	Survival, growth
<i>Lumbriculus variegatus</i> (oligochaete)	ASTM 2007b, USEPA 2000c	10 day	Survival
<i>Hexagenia limbata</i> (mayfly larvae)	ASTM 2005, 2008	10 day	Survival
<i>Chronic tests</i>			
<i>Hyalella azteca</i> (amphipod)	ASTM 2005, 2008; USEPA 2000c	28–42 day	Survival, growth, reproduction
<i>Chironomus</i> spp. (midge)	ASTM 2005, 2008; USEPA 2000c	20 day	Survival, growth
<i>Chironomus</i> spp. (midge)	ASTM 2005, 2008; USEPA 2000c	30 day	Life cycle
<i>Hexagenia</i> spp. (mayfly)	ASTM 2007b, USEPA 2000c	21 day	Survival, growth
<i>Tubifex tubifex</i> (tubificid oligochaete)	ASTM 2007b	28 day	Survival, growth, reproduction
Tool/test species	Method	Duration	Measurement endpoints
<i>Rana pipiens</i> (frog)	ASTM 2007a	28 day	Survival, growth, reproduction
<i>Xenopus</i> (frog)	ASTM 2007a	28 day	Survival, growth, reproduction
Amphibian larvae	NAVFAC 2004	10 day	Survival, growth, reproduction
<i>Bioaccumulation tests</i>			
<i>Diporeia</i> spp. (amphipod)	ASTM 2007a	28 day	Survival, bioaccumulation
<i>Lumbriculus variegatus</i> (oligochaete)	ASTM 2007a, USEPA 2000d	28 day	Bioaccumulation
Selected freshwater pore-water and elutriate toxicity tests			
<i>Daphnia magna</i>	Pore water–ASTM 2001a	48 hour	Survival
<i>Ceriodaphnia dubia</i>	Pore water–ASTM 2001c	7 day	Survival, reproduction
<i>Pimephales promelas</i> (fathead minnow)	Pore water–ASTM 2001b	7 day	Survival, growth
<i>Selenastrum capricornutum</i> (algae)	Elutriate–Weber et al. 1989	96 hour	Survival, reproduction
<i>Ceriodaphnia dubia</i>	Elutriate–Weber et al. 1989	7 day	Survival, growth
<i>Pimephales promelas</i> (fathead minnow)	Elutriate–Weber et al. 1989	7 day	Survival, growth
<i>Salmo</i> spp. (salmonid)	Elutriate–Weber et al. 1989	96 hour	
Selected bedded-sediment marine toxicity tests			
<i>Acute tests</i>			
<i>Ampelisca abdita</i> (amphipod)	ASTM 2007b, 2008; USEPA 1994c	10 day	Survival
<i>Eohaustorius estuarius</i> (amphipod)	ASTM 2007b, 2008	10 day	Survival
<i>Rhepoxynius abronius</i> (amphipod)	ASTM 2007b, 2008; USEPA 1994c	10 day	Survival, reburial
<i>Grandidierella japonica</i> (amphipod)	ASTM 2007b, 2008	10 day	Survival
<i>Leptocheirus plumulosus</i> (amphipod)	ASTM 2007b, 2008; USEPA 2001b	10 day	Survival
<i>Corophium</i> spp. (amphipod)	ASTM 2007b, 2008	10 day	Survival
<i>Neanthes arenaceodentata</i> (polychaete)	ASTM 2007b, 2008	10 day	Survival

<i>Chronic tests</i>			
<i>Neanthes arenaceodentata</i>	ASTM 2007b	28 day	Survival, growth
<i>Armandia brevis</i>		28 day	Survival, growth
<i>Leptocheirus plumulosus</i> (amphipod)	ASTM 2008, USEPA 2001b	28 day	Survival, growth, reproduction
Bivalve larvae (oyster, larvae)		48 hour	Larval development
Echinoderm (sea urchin, sand dollar)			
<i>Bioaccumulation tests</i>			
<i>Macoma</i> spp. (clam)	USEPA 1998b	28 day	Survival, bioaccumulation
<i>Neanthes (Nereis)</i> spp. (polychaete)	ASTM 2007a, 2007b	28 day	Bioaccumulation