

## **Appendix for Section 24**

# **Tier I Screening Level Risk Assessment for Aquatic-Dependent Wildlife**

## SUMMARY OF TIER I AQUATIC-DEPENDENT WILDLIFE RISK ASSESSMENT RESULTS

	Arsenic (mg/kg wet) (mg/kg dry)		Chromium (mg/kg wet) (mg/kg dry)		Copper (mg/kg wet) (mg/kg dry)		Lead (mg/kg wet) (mg/kg dry)		Mercury (mg/kg wet) (mg/kg dry)		Nickel (mg/kg wet) (mg/kg dry)		Selenium (mg/kg wet) (mg/kg dry)	
<b>NA06</b>														
t-test significantly different	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No	--
> 95% UPL Reference Pool	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
HQ > 1														
Brown Pelican	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Least Tern	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Sea Lion	--	Yes	--	No	--	No	--	No	--	No	--	No	--	Yes
Surf Scoter	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Western Grebe	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Green Turtle	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
<b>NA11</b>														
t-test significantly different	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No	--
> 95% UPL Reference Pool	--	No	--	No	--	No	--	No	--	No	--	No	--	No
HQ > 1														
Brown Pelican	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Least Tern	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Sea Lion	--	Yes	--	No	--	No	--	No	--	No	--	No	--	Yes
Surf Scoter	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Western Grebe	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Green Turtle	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
<b>NA12</b>														
t-test significantly different	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No	--
> 95% UPL Reference Pool	--	No	--	No	--	No	--	No	--	No	--	No	--	No
HQ > 1														
Brown Pelican	--	No	--	No	--	No	--	Yes	--	No	--	No	--	Yes
Least Tern	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Sea Lion	--	Yes	--	No	--	No	--	No	--	No	--	No	--	Yes
Surf Scoter	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Western Grebe	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Green Turtle	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
<b>NA20</b>														
t-test significantly different	No	--	No	--	Yes	--	Yes	--	Yes	--	No	--	No	--
> 95% UPL Reference Pool	--	No	--	No	--	No	--	No	--	No	--	No	--	No
HQ > 1														
Brown Pelican	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Least Tern	--	No	--	No	--	No	--	Yes	--	No	--	No	--	Yes
Sea Lion	--	Yes	--	No	--	No	--	No	--	No	--	No	--	No
Surf Scoter	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Western Grebe	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Green Turtle	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
<b>SW04</b>														
t-test significantly different	Yes	--	No	--	Yes	--	Yes	--	Yes	--	No	--	No	--
> 95% UPL Reference Pool	--	Yes	--	No	--	Yes	--	Yes	--	No	--	No	--	No
HQ > 1														
Brown Pelican	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Least Tern	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Sea Lion	--	Yes	--	No	--	No	--	No	--	No	--	No	--	No

## SUMMARY OF TIER I AQUATIC-DEPENDENT WILDLIFE RISK ASSESSMENT RESULTS

	Arsenic (mg/kg wet) (mg/kg dry)		Chromium (mg/kg wet) (mg/kg dry)		Copper (mg/kg wet) (mg/kg dry)		Lead (mg/kg wet) (mg/kg dry)		Mercury (mg/kg wet) (mg/kg dry)		Nickel (mg/kg wet) (mg/kg dry)		Selenium (mg/kg wet) (mg/kg dry)	
Surf Scoter	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Western Grebe	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Green Turtle	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
<b>SW08</b>														
t-test significantly different	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No	--
> 95% UPL Reference Pool	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
HQ > 1														
Brown Pelican	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Least Tern	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Sea Lion	--	Yes	--	No	--	No	--	No	--	No	--	No	--	No
Surf Scoter	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Western Grebe	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Green Turtle	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
<b>SW13</b>														
t-test significantly different	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No	--
> 95% UPL Reference Pool	--	No	--	No	--	Yes	--	No	--	No	--	No	--	No
HQ > 1														
Brown Pelican	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Least Tern	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Sea Lion	--	Yes	--	No	--	No	--	No	--	No	--	No	--	Yes
Surf Scoter	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Western Grebe	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Green Turtle	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
<b>SW21</b>														
t-test significantly different	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No	--
> 95% UPL Reference Pool	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
HQ > 1														
Brown Pelican	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Least Tern	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Sea Lion	--	Yes	--	No	--	No	--	No	--	No	--	No	--	Yes
Surf Scoter	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Western Grebe	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No
Green Turtle	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
<b>SW28</b>														
t-test significantly different	No	--	No	--	Yes	--	Yes	--	No	--	No	--	No	--
> 95% UPL Reference Pool	--	No	--	No	--	No	--	No	--	No	--	No	--	No
HQ > 1														
Brown Pelican	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Least Tern	--	No	--	No	--	Yes	--	Yes	--	No	--	No	--	Yes
Sea Lion	--	Yes	--	No	--	No	--	No	--	No	--	No	--	No
Surf Scoter	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Western Grebe	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No
Green Turtle	--	No	--	No	--	No	--	Yes	--	No	--	No	--	No

## SUMMARY OF TIER I AQUATIC-DEPENDENT WILDLIFE RISK ASSESSMENT RESULTS

	Zinc (mg/kg wet) (mg/kg dry)		TBT (ug/kg wet) (ug/kg dry)		Benzo[a]pyrene (ug/kg wet) (ug/kg dry)		Total PCB Congeners (ng/g wet) (ng/g dry)	
	No/Yes		Yes	--	Yes	--	Yes	--
<b>NA06</b>								
t-test significantly different	No	--	Yes	--	Yes	--	Yes	--
> 95% UPL Reference Pool	--	Yes	--	Yes	--	Yes	--	Yes
HQ > 1								
Brown Pelican	--	No	--	No		No	--	No
Least Tern	--	No	--	No		No	--	No
Sea Lion	--	No	--	No		No	--	No
Surf Scoter	--	No	--	No		No	--	No
Western Grebe	--	No	--	No		No	--	No
Green Turtle	--	No	--	No		No	--	No
<b>NA11</b>								
t-test significantly different	No	--	Yes	--	Yes	--	No	--
> 95% UPL Reference Pool	--	Yes	--	Yes	--	Yes	--	No
HQ > 1								
Brown Pelican	--	No	--	No		No	--	No
Least Tern	--	No	--	No		No	--	No
Sea Lion	--	No	--	No		No	--	No
Surf Scoter	--	No	--	No		No	--	No
Western Grebe	--	No	--	No		No	--	No
Green Turtle	--	No	--	No		No	--	No
<b>NA12</b>								
t-test significantly different	No	--	Yes	--	Yes	--	No	--
> 95% UPL Reference Pool	--	Yes	--	Yes	--	No	--	No
HQ > 1								
Brown Pelican	--	No	--	No		No	--	No
Least Tern	--	No	--	No		No	--	No
Sea Lion	--	No	--	No		No	--	No
Surf Scoter	--	No	--	No		No	--	No
Western Grebe	--	No	--	No		No	--	No
Green Turtle	--	No	--	No		No	--	No
<b>NA20</b>								
t-test significantly different	No	--	Yes	--	Yes	--	No	--
> 95% UPL Reference Pool	--	Yes	--	Yes	--	Yes	--	No
HQ > 1								
Brown Pelican	--	No	--	No		No	--	No
Least Tern	--	No	--	No		No	--	No
Sea Lion	--	No	--	No		No	--	No
Surf Scoter	--	No	--	No		No	--	No
Western Grebe	--	No	--	No		No	--	No
Green Turtle	--	No	--	No		No	--	No
<b>SW04</b>								
t-test significantly different	No	--	Yes	--	Yes	--	Yes	--
> 95% UPL Reference Pool	--	Yes	--	Yes	--	Yes	--	Yes
HQ > 1								
Brown Pelican	--	Yes	--	No		No	--	No
Least Tern	--	Yes	--	No		Yes	--	No
Sea Lion	--	Yes	--	No		No	--	No

## SUMMARY OF TIER I AQUATIC-DEPENDENT WILDLIFE RISK ASSESSMENT RESULTS

	Zinc (mg/kg wet) (mg/kg dry)		TBT (ug/kg wet) (ug/kg dry)		Benzo[a]pyrene (ug/kg wet) (ug/kg dry)		Total PCB Congeners (ng/g wet) (ng/g dry)	
Surf Scoter	--	Yes	--	No		No	--	No
Western Grebe	--	Yes	--	No		No	--	No
Green Turtle	--	No	--	No		No	--	No
<b>SW08</b>								
t-test significantly different	No	--	Yes	--	Yes	--	Yes	--
> 95% UPL Reference Pool	--	Yes	--	Yes	--	Yes	--	Yes
HQ > 1								
Brown Pelican	--	No	--	No		No	--	No
Least Tern	--	Yes	--	No		Yes	--	Yes
Sea Lion	--	No	--	No		No	--	No
Surf Scoter	--	No	--	No		No	--	No
Western Grebe	--	No	--	No		No	--	No
Green Turtle	--	No	--	No		No	--	No
<b>SW13</b>								
t-test significantly different	No	--	Yes	--	Yes	--	No	--
> 95% UPL Reference Pool	--	Yes	--	Yes	--	Yes	--	Yes
HQ > 1								
Brown Pelican	--	No	--	No		No	--	Yes
Least Tern	--	Yes	--	No		No	--	Yes
Sea Lion	--	No	--	No		No	--	No
Surf Scoter	--	No	--	No		No	--	No
Western Grebe	--	No	--	No		No	--	No
Green Turtle	--	No	--	No		No	--	No
<b>SW21</b>								
t-test significantly different	Yes	--	Yes	--	Yes	--	Yes	--
> 95% UPL Reference Pool	--	Yes	--	Yes	--	Yes	--	Yes
HQ > 1								
Brown Pelican	--	No	--	No		No	--	Yes
Least Tern	--	Yes	--	No		Yes	--	Yes
Sea Lion	--	No	--	No		No	--	No
Surf Scoter	--	No	--	No		No	--	No
Western Grebe	--	No	--	No		No	--	No
Green Turtle	--	No	--	No		No	--	No
<b>SW28</b>								
t-test significantly different	No	--	Yes	--	Yes	--	Yes	--
> 95% UPL Reference Pool	--	Yes	--	Yes	--	Yes	--	Yes
HQ > 1								
Brown Pelican	--	No	--	No		No	--	No
Least Tern	--	Yes	--	No		No	--	Yes
Sea Lion	--	No	--	No		No	--	No
Surf Scoter	--	No	--	No		No	--	No
Western Grebe	--	No	--	No		No	--	No
Green Turtle	--	No	--	No		No	--	No

**[BLANK SHEET]**

**COMPARISON OF SITE/REFERENCE MACOMA TISSUE CONCENTRATIONS**

	Total Solids (decimal wet)	Arsenic (mg/kg wet)	Control	Arsenic (mg/kg dry)	Cadmium (mg/kg wet)	Control	Cadmium (mg/kg dry)	Chromium (mg/kg wet)	Control	Chromium (mg/kg dry)	Copper (mg/kg wet)	Control	Copper (mg/kg dry)	Lead (mg/kg wet)	Control
NA06	0.147	3	3	20.41	0.032	0.031	0.22	0.33	0.78	2.24	2.3	1.5	15.65	0.64	0.1
NA06	0.151	2.6	3.1	17.22	0.033	0.045	0.22	0.34	0.25	2.25	2.1	1.2	13.91	0.82	0.12
NA06	0.128	2.7	2.7	21.09	0.056	0.04	0.44	0.29	0.77	2.27	2.3	0.99	17.97	0.5	0.11
NA06	0.159	3	2.8	18.87	0.037	0.034	0.23	0.38	0.35	2.39	2.4	1.2	15.09	0.53	0.09
NA06	0.167	3.3	3.2	19.76	0.051	0.037	0.31	0.25	0.19	1.50	2.3	0.97	13.77	0.58	0.11
mean	0.1504	2.92	2.96	19.47	0.0418	0.0374	0.28	0.318	0.468	2.13	2.28	1.172	15.28	0.614	0.106
max	0.167	3.3	3.2	21.09	0.056	0.045	0.4375	0.38	0.78	2.39	2.4	1.5	17.97	0.82	0.12
t-test significantly different	--	No	--	--	No	--	--	No	--	--	--	--	--	--	--
> 95% UPL Reference Pool	--	--	--	No	--	--	No	--	--	No	--	--	No	--	--
NA11	0.155	3.2	3	20.65	0.036	0.031	0.23	0.26	0.78	1.68	1.6	1.5	10.32	0.37	0.1
NA11	0.148	2.6	3.1	17.57	0.028	0.045	0.19	0.23	0.25	1.55	1.8	1.2	12.16	0.28	0.12
NA11	0.131	2.8	2.7	21.37	0.025	0.04	0.19	0.18	0.77	1.37	1.6	0.99	12.21	0.3	0.11
NA11	0.155	3.7	2.8	23.87	0.052	0.034	0.34	0.34	0.35	2.19	2.6	1.2	16.77	0.53	0.09
NA11	0.147	2.6	3.2	17.69	0.054	0.037	0.37	0.36	0.19	2.45	1.9	0.97	12.93	0.48	0.11
mean	0.1472	2.98	2.96	20.23	0.039	0.0374	0.26	0.274	0.468	1.85	1.9	1.172	12.88	0.392	0.106
max	0.155	3.7	3.2	23.87	0.054	0.045	0.3673469	0.36	0.78	2.45	2.6	1.5	16.77	0.53	0.12
t-test significantly different	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	--	--	--	No	--	--	No	--	--	No	--	--	No	--	--
NA12	0.14	2.8	3	20.00	0.02	0.031	0.14	0.2	0.78	1.43	1.7	1.5	12.14	0.3	0.1
NA12	0.132	2.6	3.1	19.70	0.036	0.045	0.27	0.26	0.25	1.97	2	1.2	15.15	0.31	0.12
NA12	0.152	2.6	2.7	17.11	0.031	0.04	0.20	0.26	0.77	1.71	1.5	0.99	9.87	0.3	0.11
NA12	0.147	2.9	2.8	19.73	0.035	0.034	0.24	0.32	0.35	2.18	1.7	1.2	11.56	0.37	0.09
NA12	0.142	2.6	3.2	18.31	0.028	0.037	0.20	0.19	0.19	1.34	2.4	0.97	16.90	0.38	0.11
mean	0.1426	2.7	2.96	18.97	0.03	0.0374	0.21	0.246	0.468	1.72	1.86	1.172	13.13	0.332	0.106
max	0.152	2.9	3.2	20.00	0.036	0.045	0.2727273	0.32	0.78	2.18	2.4	1.5	16.90	0.38	0.12
t-test significantly different	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	--	--	--	No	--	--	No	--	--	No	--	--	No	--	--
NA20	0.162	3	3	18.52	0.029	0.031	0.18	0.25	0.78	1.54	1.7	1.5	10.49	0.41	0.1
NA20	0.136	2.2	3.1	16.18	0.023	0.045	0.17	0.27	0.25	1.99	1.6	1.2	11.76	0.38	0.12
NA20	0.158	3.2	2.7	20.25	0.035	0.04	0.22	0.37	0.77	2.34	2	0.99	12.66	0.55	0.11
NA20	0.158	3.2	2.8	20.25	0.035	0.034	0.22	0.37	0.35	2.34	2	1.2	12.66	0.55	0.09
NA20	0.147	2.5	3.2	17.01	0.029	0.037	0.20	0.3	0.19	2.04	1.4	0.97	9.52	0.37	0.11
mean	0.1522	2.82	2.96	18.44	0.0302	0.0374	0.20	0.312	0.468	2.05	1.74	1.172	11.42	0.452	0.106
max	0.162	3.2	3.2	20.25	0.035	0.045	0.221519	0.37	0.78	2.34	2	1.5	12.66	0.55	0.12
t-test significantly different	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	--	--	--	No	--	--	No	--	--	No	--	--	No	--	--
SW04	0.146	3.8	3	26.03	0.043	0.031	0.29	0.76	0.78	5.21	8.1	1.5	55.48	1.9	0.1
SW04	0.142	3.8	3.1	26.76	0.055	0.045	0.39	0.49	0.25	3.45	5	1.2	35.21	1.7	0.12
SW04	0.152	3.1	2.7	20.39	0.037	0.04	0.24	0.53	0.77	3.49	4	0.99	26.32	1.3	0.11
SW04	0.153	3.6	2.8	23.53	0.031	0.034	0.20	0.18	0.35	1.18	2.5	1.2	16.34	0.7	0.09
SW04	0.149	3.6	3.2	24.16	0.027	0.037	0.18	0.42	0.19	2.82	4.6	0.97	30.87	1.1	0.11
mean	0.1484	3.58	2.96	24.17	0.0386	0.0374	0.26	0.476	0.468	3.23	4.84	1.172	32.84	1.34	0.106
max	0.153	3.8	3.2	26.76	0.055	0.045	0.3873239	0.76	0.78	5.21	8.1	1.5	55.48	1.9	0.12
t-test significantly different	--	<b>Yes</b>	--	--	No	--	--	No	--	--	<b>Yes</b>	--	--	<b>Yes</b>	--

NOTE: Shaded values indicate undetected at detection limit. Therefore, 1/2 detection limit used in this table.

**COMPARISON OF SITE/REFERENCE MACOMA TISSUE CONCENTRATIONS**

	Total Solids (decimal wet)	Arsenic (mg/kg wet)	Control	Arsenic (mg/kg dry)	Cadmium (mg/kg wet)	Control	Cadmium (mg/kg dry)	Chromium (mg/kg wet)	Control	Chromium (mg/kg dry)	Copper (mg/kg wet)	Control	Copper (mg/kg dry)	Lead (mg/kg wet)	Control
> 95% UPL Reference Pool		--	--	Yes	--	--	No	--	--	No	--	--	Yes	--	--
SW08	0.148	2.6	3	17.57	0.022	0.031	0.15	0.33	0.78	2.23	3.2	1.5	21.62	0.8	0.1
SW08	0.12	2.8	3.1	23.33	0.029	0.045	0.24	0.35	0.25	2.92	3.2	1.2	26.67	1.4	0.12
SW08	0.148	2.8	2.7	18.92	0.035	0.04	0.24	0.53	0.77	3.58	2.6	0.99	17.57	0.6	0.11
SW08	0.157	3	2.8	19.11	0.037	0.034	0.24	0.3	0.35	1.91	3.2	1.2	20.38	0.66	0.09
SW08	0.138	2.6	3.2	18.84	0.03	0.037	0.22	0.31	0.19	2.25	4.3	0.97	31.16	0.75	0.11
mean	0.1422	2.76	2.96	19.55	0.0306	0.0374	0.22	0.364	0.468	2.58	3.3	1.172	23.48	0.842	0.106
max	0.157	3	3.2	23.33	0.037	0.045	0.2416667	0.53	0.78	3.58	4.3	1.5	31.16	1.4	0.12
t-test significantly different		No	--	--	No	--	--	No	--	--	Yes	--	--	Yes	--
> 95% UPL Reference Pool		--	--	No	--	--	No	--	--	No	--	--	Yes	--	--
SW13	0.12	2.5	3	20.83	0.032	0.031	0.27	0.26	0.78	2.17	2.5	1.5	20.83	0.35	0.1
SW13	0.158	3.6	3.1	22.78	0.045	0.045	0.28	0.31	0.25	1.96	5.6	1.2	35.44	0.4	0.12
SW13	0.163	3.1	2.7	19.02	0.031	0.04	0.19	0.3	0.77	1.84	3.1	0.99	19.02	0.43	0.11
SW13	0.14	2.1	2.8	15.00	0.025	0.034	0.18	0.41	0.35	2.93	4.2	1.2	30.00	0.35	0.09
SW13	0.151	2.9	3.2	19.21	0.027	0.037	0.18	0.29	0.19	1.92	2.9	0.97	19.21	0.33	0.11
mean	0.1464	2.84	2.96	19.37	0.032	0.0374	0.22	0.314	0.468	2.16	3.66	1.172	24.90	0.372	0.106
max	0.163	3.6	3.2	22.78	0.045	0.045	0.2848101	0.41	0.78	2.93	5.6	1.5	35.44	0.43	0.12
t-test significantly different		No	--	--	No	--	--	No	--	--	Yes	--	--	Yes	--
> 95% UPL Reference Pool		--	--	No	--	--	No	--	--	No	--	--	Yes	--	--
SW21	0.157	3.1	3	19.75	0.033	0.031	0.21	0.32	0.78	2.04	2.4	1.5	15.29	0.46	0.1
SW21	0.146	3.1	3.1	21.23	0.037	0.045	0.25	0.32	0.25	2.19	2	1.2	13.70	0.53	0.12
SW21	0.164	3.7	2.7	22.56	0.053	0.04	0.32	0.35	0.77	2.13	2.4	0.99	14.63	0.69	0.11
SW21	0.148	2.9	2.8	19.59	0.042	0.034	0.28	0.34	0.35	2.30	2.2	1.2	14.86	0.58	0.09
SW21	0.128	2.6	3.2	20.31	0.038	0.037	0.30	0.6	0.19	4.69	3.1	0.97	24.22	0.9	0.11
mean	0.1486	3.08	2.96	20.69	0.0406	0.0374	0.27	0.386	0.468	2.67	2.42	1.172	16.54	0.632	0.106
max	0.164	3.7	3.2	22.56	0.053	0.045	0.3231707	0.6	0.78	4.69	3.1	1.5	24.22	0.9	0.12
t-test significantly different		No	--	--	No	--	--	No	--	--	Yes	--	--	Yes	--
> 95% UPL Reference Pool		--	--	No	--	--	No	--	--	No	--	--	No	--	--
SW28	0.157	2.8	3	17.83	0.036	0.031	0.23	0.2	0.78	1.27	1.8	1.5	11.46	0.35	0.1
SW28	0.143	2.7	3.1	18.88	0.028	0.045	0.20	0.18	0.25	1.26	1.6	1.2	11.19	0.39	0.12
SW28	0.155	3.3	2.7	21.29	0.036	0.04	0.23	0.25	0.77	1.61	2.2	0.99	14.19	0.45	0.11
SW28	0.163	3.5	2.8	21.47	0.053	0.034	0.33	0.3	0.35	1.84	2.7	1.2	16.56	0.51	0.09
SW28	0.155	3.1	3.2	20.00	0.034	0.037	0.22	0.27	0.19	1.74	2.2	0.97	14.19	0.45	0.11
mean	0.1546	3.08	2.96	19.90	0.0374	0.0374	0.24	0.24	0.468	1.55	2.1	1.172	13.52	0.43	0.106
max	0.163	3.5	3.2	21.47	0.053	0.045	0.3251534	0.3	0.78	1.84	2.7	1.5	16.56	0.51	0.12
t-test significantly different		No	--	--	No	--	--	No	--	--	Yes	--	--	Yes	--
> 95% UPL Reference Pool		--	--	No	--	--	No	--	--	No	--	--	No	--	--

NOTE: Shaded values indicate undetected at detection limit. Therefore, 1/2 detection limit used in this table.



**COMPARISON OF SITE/REFERENCE MACOMA TISSUE CONCENTRATIONS**

	Lead (mg/kg dry)	Mercury (mg/kg wet)	Control	Mercury (mg/kg dry)	Nickel (mg/kg wet)	Control	Nickel (mg/kg dry)	Selenium (mg/kg wet)	Control	Selenium (mg/kg dry)	Silver (mg/kg wet)	Control	Silver (mg/kg dry)	Zinc (mg/kg wet)	Control
NA06	4.35	0.016	0.018	0.109	0.38	0.4	2.59	0.4	0.2	2.72	0.038	0.027	0.259	17	16
NA06	5.43	0.014	0.015	0.093	0.37	0.43	2.45	0.2	0.4	1.32	0.052	0.033	0.344	18	18
NA06	3.91	0.016	0.016	0.125	0.34	0.75	2.66	0.3	0.3	2.34	0.053	0.036	0.414	21	15
NA06	3.33	0.026	0.012	0.164	0.47	0.38	2.96	0.3	0.3	1.89	0.03	0.027	0.189	18	14
NA06	3.47	0.018	0.013	0.108	0.37	0.35	2.22	0.3	0.2	1.80	0.026	0.041	0.156	24	17
mean	4.10	0.018	0.0148	0.120	0.386	0.462	2.57	0.3	0.28	2.01	0.0398	0.0328	0.272	19.6	16
max	5.43	0.026	0.018	0.164	0.47	0.75	2.96	0.4	0.4	2.72	0.053	0.041	0.414	24	18
t-test significantly different	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	Yes	--	--	No	--	--	No	--	--	No	--	--	No	--	--
NA11	2.39	0.012	0.018	0.077	0.39	0.4	2.52	0.3	0.2	1.94	0.051	0.027	0.329	15	16
NA11	1.89	0.014	0.015	0.095	0.27	0.43	1.82	0.2	0.4	1.35	0.041	0.033	0.277	16	18
NA11	2.29	0.017	0.016	0.130	0.28	0.75	2.14	0.3	0.3	2.29	0.042	0.036	0.321	14	15
NA11	3.42	0.018	0.012	0.116	0.39	0.38	2.52	0.4	0.3	2.58	0.072	0.027	0.465	20	14
NA11	3.27	0.016	0.013	0.109	0.36	0.35	2.45	0.2	0.2	1.36	0.037	0.041	0.252	18	17
mean	2.65	0.0154	0.0148	0.105	0.338	0.462	2.29	0.28	0.28	1.90	0.0486	0.0328	0.329	16.6	16
max	3.42	0.018	0.018	0.130	0.39	0.75	2.52	0.4	0.4	2.58	0.072	0.041	0.465	20	18
t-test significantly different	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	No	--	--	No	--	--	No	--	--	No	--	--	No	--	--
NA12	2.14	0.02	0.018	0.143	0.32	0.4	2.29	0.4	0.2	2.86	0.02	0.027	0.143	12	16
NA12	2.35	0.015	0.015	0.114	0.36	0.43	2.73	0.3	0.4	2.27	0.031	0.033	0.235	17	18
NA12	1.97	0.013	0.016	0.086	0.3	0.75	1.97	0.2	0.3	1.32	0.027	0.036	0.178	17	15
NA12	2.52	0.014	0.012	0.095	0.37	0.38	2.52	0.4	0.3	2.72	0.031	0.027	0.211	17	14
NA12	2.68	0.014	0.013	0.099	0.29	0.35	2.04	0.2	0.2	1.41	0.05	0.041	0.352	18	17
mean	2.33	0.0152	0.0148	0.107	0.328	0.462	2.31	0.3	0.28	2.12	0.0318	0.0328	0.224	16.2	16
max	2.68	0.02	0.018	0.143	0.37	0.75	2.73	0.4	0.4	2.86	0.05	0.041	0.352	18	18
t-test significantly different	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	No	--	--	No	--	--	No	--	--	No	--	--	No	--	--
NA20	2.53	0.017	0.018	0.105	0.42	0.4	2.59	0.3	0.2	1.85	0.022	0.027	0.136	19	16
NA20	2.79	0.017	0.015	0.125	0.34	0.43	2.50	0.2	0.4	1.47	0.019	0.033	0.140	15	18
NA20	3.48	0.023	0.016	0.146	0.5	0.75	3.16	0.2	0.3	1.27	0.022	0.036	0.139	18	15
NA20	3.48	0.023	0.012	0.146	0.5	0.38	3.16	0.2	0.3	1.27	0.022	0.027	0.139	18	14
NA20	2.52	0.017	0.013	0.116	0.38	0.35	2.59	0.2	0.2	1.36	0.022	0.041	0.150	16	17
mean	2.96	0.0194	0.0148	0.127	0.428	0.462	2.80	0.22	0.28	1.44	0.0214	0.0328	0.141	17.2	16
max	3.48	0.023	0.018	0.146	0.5	0.75	3.16	0.3	0.4	1.85	0.022	0.041	0.150	19	18
t-test significantly different	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	No	--	--	No	--	--	No	--	--	No	--	--	No	--	--
SW04	13.01	0.023	0.018	0.158	0.48	0.4	3.29	0.3	0.2	2.05	0.058	0.027	0.397	46	16
SW04	11.97	0.021	0.015	0.148	0.63	0.43	4.44	0.2	0.4	1.41	0.029	0.033	0.204	31	18
SW04	8.55	0.022	0.016	0.145	0.35	0.75	2.30	0.2	0.3	1.32	0.034	0.036	0.224	27	15
SW04	4.58	0.016	0.012	0.105	0.37	0.38	2.42	0.2	0.3	1.31	0.028	0.027	0.183	19	14
SW04	7.38	0.019	0.013	0.128	0.38	0.35	2.55	0.3	0.2	2.01	0.024	0.041	0.161	21	17
mean	9.10	0.0202	0.0148	0.136	0.442	0.462	3.00	0.24	0.28	1.62	0.0346	0.0328	0.234	28.8	16
max	13.01	0.023	0.018	0.158	0.63	0.75	4.44	0.3	0.4	2.05	0.058	0.041	0.397	46	18
t-test significantly different	--	Yes	--	--	No	--	--	No	--	--	No	--	--	No	--

NOTE: Shaded values indicate undetected at detection limit. Therefore, 1/2 detection limit used in this table.

**COMPARISON OF SITE/REFERENCE MACOMA TISSUE CONCENTRATIONS**

	Lead (mg/kg dry)	Mercury (mg/kg wet)	Control (mg/kg dry)	Mercury (mg/kg dry)	Nickel (mg/kg wet)	Control (mg/kg dry)	Nickel (mg/kg dry)	Selenium (mg/kg wet)	Control (mg/kg dry)	Selenium (mg/kg dry)	Silver (mg/kg wet)	Control (mg/kg dry)	Silver (mg/kg dry)	Zinc (mg/kg wet)	Control (mg/kg dry)
> 95% UPL Reference Pool	Yes	--	--	No	--	--	No	--	--	No	--	--	No	--	--
SW08	5.41	0.026	0.018	0.176	0.29	0.4	1.96	0.2	0.2	1.35	0.016	0.027	0.108	15	16
SW08	11.67	0.015	0.015	0.125	0.29	0.43	2.42	0.1	0.4	0.83	0.034	0.033	0.283	14	18
SW08	4.05	0.018	0.016	0.122	0.43	0.75	2.91	0.3	0.3	2.03	0.019	0.036	0.128	17	15
SW08	4.20	0.017	0.012	0.108	0.37	0.38	2.36	0.2	0.3	1.27	0.041	0.027	0.261	19	14
SW08	5.43	0.017	0.013	0.123	0.3	0.35	2.17	0.2	0.2	1.45	0.067	0.041	0.486	14	17
mean	6.15	0.0186	0.0148	0.131	0.336	0.462	2.36	0.2	0.28	1.39	0.0354	0.0328	0.253	15.8	16
max	11.67	0.026	0.018	0.176	0.43	0.75	2.91	0.3	0.4	2.03	0.067	0.041	0.486	19	18
t-test significantly different	--	No	--	--	No	--	--	No	--	--	No	--	--	No	--
> 95% UPL Reference Pool	Yes	--	--	No	--	--	No	--	--	No	--	--	No	--	--
SW13	2.92	0.013	0.018	0.108	0.35	0.4	2.92	0.2	0.2	1.67	0.043	0.027	0.358	17	16
SW13	2.53	0.014	0.015	0.089	0.44	0.43	2.78	0.5	0.4	3.16	0.077	0.033	0.487	24	18
SW13	2.64	0.018	0.016	0.110	0.41	0.75	2.52	0.3	0.3	1.84	0.028	0.036	0.172	25	15
SW13	2.50	0.013	0.012	0.093	0.34	0.38	2.43	0.2	0.3	1.43	0.027	0.027	0.193	16	14
SW13	2.19	0.016	0.013	0.106	0.34	0.35	2.25	0.2	0.2	1.32	0.038	0.041	0.252	14	17
mean	2.55	0.0148	0.0148	0.101	0.376	0.462	2.58	0.28	0.28	1.88	0.0426	0.0328	0.292	19.2	16
max	2.92	0.018	0.018	0.110	0.44	0.75	2.92	0.5	0.4	3.16	0.077	0.041	0.487	25	18
t-test significantly different	--	No	--	--	No	--	--	No	--	--	No	--	--	No	--
> 95% UPL Reference Pool	No	--	--	No	--	--	No	--	--	No	--	--	No	--	--
SW21	2.93	0.016	0.018	0.102	0.36	0.4	2.29	0.2	0.2	1.27	0.053	0.027	0.338	18	16
SW21	3.63	0.017	0.015	0.116	0.31	0.43	2.12	0.2	0.4	1.37	0.039	0.033	0.267	18	18
SW21	4.21	0.017	0.016	0.104	0.41	0.75	2.50	0.3	0.3	1.83	0.061	0.036	0.372	24	15
SW21	3.92	0.017	0.012	0.115	0.36	0.38	2.43	0.3	0.3	2.03	0.05	0.027	0.338	18	14
SW21	7.03	0.012	0.013	0.094	0.37	0.35	2.89	0.4	0.2	3.13	0.054	0.041	0.422	19	17
mean	4.34	0.0158	0.0148	0.106	0.362	0.462	2.45	0.28	0.28	1.93	0.0514	0.0328	0.347	19.4	16
max	7.03	0.017	0.018	0.116	0.41	0.75	2.89	0.4	0.4	3.13	0.061	0.041	0.422	24	18
t-test significantly different	--	No	--	--	No	--	--	No	--	--	Yes	--	--	Yes	--
> 95% UPL Reference Pool	Yes	--	--	No	--	--	No	--	--	No	--	--	No	--	--
SW28	2.23	0.019	0.018	0.121	0.4	0.4	2.55	0.2	0.2	1.27	0.028	0.027	0.178	18	16
SW28	2.73	0.017	0.015	0.119	0.32	0.43	2.24	0.15	0.4	1.05	0.02	0.033	0.140	15	18
SW28	2.90	0.02	0.016	0.129	0.38	0.75	2.45	0.4	0.3	2.58	0.038	0.036	0.245	22	15
SW28	3.13	0.015	0.012	0.092	0.48	0.38	2.94	0.3	0.3	1.84	0.052	0.027	0.319	25	14
SW28	2.90	0.016	0.013	0.103	0.35	0.35	2.26	0.2	0.2	1.29	0.039	0.041	0.252	17	17
mean	2.78	0.0174	0.0148	0.113	0.386	0.462	2.49	0.25	0.28	1.61	0.0354	0.0328	0.227	19.4	16
max	3.13	0.02	0.018	0.129	0.48	0.75	2.94	0.4	0.4	2.58	0.052	0.041	0.319	25	18
t-test significantly different	--	No	--	--	No	--	--	No	--	--	No	--	--	No	--
> 95% UPL Reference Pool	No	--	--	No	--	--	No	--	--	No	--	--	No	--	--

NOTE: Shaded values indicate undetected at detection limit. Therefore, 1/2 detection limit used in this table.

**COMPARISON OF SITE/REFERENCE MACOMA TISSUE CONCENTRATIONS**

	Zinc (mg/kg dry)	TBT (ug/kg wet)	Control	TBT (ug/kg dry)	Benzo[a]pyrene (ug/kg wet)	Control	Benzo[a]pyrene (ug/kg dry)	Total PCB Congeners (ng/g wet)	Control	Total PCB Congeners (ng/g dry)
NA06	115.65	16	0.495	108.84	27	5	183.67	55	0.47	374.15
NA06	119.21	32	0.5	211.92	26	2.5	172.19	40.1	0.44	265.56
NA06	164.06	31	0.5	242.19	20	2.5	156.25	20.1	0.54	157.03
NA06	113.21	38	1.4	238.99	30	5	188.68	69.2	46	435.22
NA06	143.71	41	0.495	245.51	32	5	191.62	57.9	0.33	346.71
mean	131.17	31.6	0.678	209.49	27	4	178.48	48.46	9.556	315.73
max	164.06	41	1.4	245.51	32	5	191.62	69.2	46	435.22
t-test significantly different	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	Yes	--	--	Yes	--	--	Yes	--	--	Yes
NA11	96.77	15	0.495	96.77	23	5	148.39	26.9	0.47	173.55
NA11	108.11	11	0.5	74.32	26	2.5	175.68	23.8	0.44	160.81
NA11	106.87	12	0.5	91.60	19	2.5	145.04	21.6	0.54	164.89
NA11	129.03	19	1.4	122.58	27	5	174.19	28.1	46	181.29
NA11	122.45	12	0.495	81.63	20	5	136.05	26.5	0.33	180.27
mean	112.65	13.8	0.678	93.38	23	4	155.87	25.38	9.556	172.16
max	129.03	19	1.4	122.58	27	5	175.68	28.1	46	181.29
t-test significantly different	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	Yes	--	--	Yes	--	--	Yes	--	--	No
NA12	85.71	18	0.495	128.57	19	5	135.71	16.1	0.47	115.00
NA12	128.79	15	0.5	113.64	19	2.5	143.94	15.2	0.44	115.15
NA12	111.84	13	0.5	85.53	21	2.5	138.16	17.3	0.54	113.82
NA12	115.65	19	1.4	129.25	23	5	156.46	23.4	46	159.18
NA12	126.76	8.8	0.495	61.97	18	5	126.76	17.1	0.33	120.42
mean	113.75	14.76	0.678	103.79	20	4	140.21	17.82	9.556	124.71
max	128.79	19	1.4	129.25	23	5	156.46	23.4	46	159.18
t-test significantly different	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	Yes	--	--	Yes	--	--	No	--	--	No
NA20	117.28	22	0.495	135.80	46	5	283.95	24.5	0.47	151.23
NA20	110.29	26	0.5	191.18	23	2.5	169.12	16.9	0.44	124.26
NA20	113.92	27	0.5	170.89	35	2.5	221.52	13.2	0.54	83.54
NA20	113.92	27	1.4	170.89	43	5	272.15	13.2	46	83.54
NA20	108.84	16	0.495	108.84	43	5	292.52	21.6	0.33	146.94
mean	112.85	23.6	0.678	155.52	38	4	247.85	17.88	9.556	117.91
max	117.28	27	1.4	191.18	46	5	292.52	24.5	46	151.23
t-test significantly different	--	--	--	--	--	--	--	--	--	--
> 95% UPL Reference Pool	Yes	--	--	Yes	--	--	Yes	--	--	No
SW04	315.07	330	0.495	2260.27	170	5	1164.38	195	0.47	1335.62
SW04	218.31	740	0.5	5211.27	170	2.5	1197.18	161	0.44	1133.80
SW04	177.63	420	0.5	2763.16	150	2.5	986.84	15	0.54	98.68
SW04	124.18	150	1.4	980.39	180	5	1176.47	136	46	888.89
SW04	140.94	15	0.495	100.67	200	5	1342.28	196	0.33	1315.44
mean	195.23	331	0.678	2263.15	174	4	1173.43	140.6	9.556	954.49
max	315.07	740	1.4	5211.27	200	5	1342.28	196	46	1335.62
t-test significantly different	--	Yes	--	--	Need Calc	--	--	Yes	--	--

NOTE: Shaded values indicate undetected at detection limit. Therefore, 1/2 detection limit used in this table.

**COMPARISON OF SITE/REFERENCE MACOMA TISSUE CONCENTRATIONS**

	Zinc (mg/kg dry)	TBT (ug/kg wet)	Control	TBT (ug/kg dry)	Benzo[a]pyrene (ug/kg wet)	Control	Benzo[a]pyrene (ug/kg dry)	Total PCB Congeners (ng/g wet)	Control	Total PCB Congeners (ng/g dry)
> 95% UPL Reference Pool	Yes	--	--	Yes	--	--	Yes	--	--	Yes
SW08	101.35	120	0.495	810.81	170	5	1148.65	103	0.47	695.95
SW08	116.67	210	0.5	1750.00	140	2.5	1166.67	98.2	0.44	818.33
SW08	114.86	110	0.5	743.24	180	2.5	1216.22	86.2	0.54	582.43
SW08	121.02	180	1.4	1146.50	190	5	1210.19	135	46	859.87
SW08	101.45	120	0.495	869.57	150	5	1086.96	90.1	0.33	652.90
mean	111.07	148	0.678	1064.02	166	4	1165.74	102.5	9.556	721.90
max	121.02	210	1.4	1750.00	190	5	1216.22	135	46	859.87
t-test significantly different	--	Yes	--	--	Need Calc	--	--	Yes	--	--
> 95% UPL Reference Pool	Yes	--	--	Yes	--	--	Yes	--	--	Yes
SW13	141.67	120	0.495	1000.00	79	5	658.33	22.9	0.47	190.83
SW13	151.90	140	0.5	886.08	120	2.5	759.49	27.9	0.44	176.58
SW13	153.37	150	0.5	920.25	100	2.5	613.50	43.2	0.54	265.03
SW13	114.29	93	1.4	664.29	100	5	714.29	181	46	1292.86
SW13	92.72	120	0.495	794.70	130	5	860.93	35.3	0.33	233.77
mean	130.79	124.6	0.678	853.06	105.8	4	721.31	62.06	9.556	431.82
max	153.37	150	1.4	1000.00	130	5	860.93	181	46	1292.86
t-test significantly different	--	Yes	--	--	Need Calc	--	--	?No?	--	--
> 95% UPL Reference Pool	Yes	--	--	Yes	--	--	Yes	--	--	Yes
SW21	114.65	13	0.495	82.80	180	5	1146.50	143	0.47	910.83
SW21	123.29	14	0.5	95.89	150	2.5	1027.40	175	0.44	1198.63
SW21	146.34	16	0.5	97.56	120	2.5	731.71	170	0.54	1036.59
SW21	121.62	15	1.4	101.35	130	5	878.38	167	46	1128.38
SW21	148.44	24	0.495	187.50	110	5	859.38	106	0.33	828.13
mean	130.87	16.4	0.678	113.02	138	4	928.67	152.2	9.556	1020.51
max	148.44	24	1.4	187.50	180	5	1146.50	175	46	1198.63
t-test significantly different	--	Yes	--	--	Need Calc	--	--	Yes	--	--
> 95% UPL Reference Pool	Yes	--	--	Yes	--	--	Yes	--	--	Yes
SW28	114.65	15	0.495	95.54	140	5	891.72	127	0.47	808.92
SW28	104.90	10	0.5	69.93	130	2.5	909.09	120	0.44	839.16
SW28	141.94	16	0.5	103.23	130	2.5	838.71	136	0.54	877.42
SW28	153.37	11	1.4	67.48	140	5	858.90	104	46	638.04
SW28	109.68	13	0.495	83.87	140	5	903.23	121	0.33	780.65
mean	124.91	13	0.678	84.01	136	4	880.33	121.6	9.556	788.84
max	153.37	16	1.4	103.23	140	5	909.09	136	46	877.42
t-test significantly different	--	Yes	--	--	Need Calc	--	--	Yes	--	--
> 95% UPL Reference Pool	Yes	--	--	Yes	--	--	Yes	--	--	Yes

NOTE: Shaded values indicate undetected at detection limit. Therefore, 1/2 detection limit used in this table.

**[BLANK SHEET]**

## Tier I - Summary of Hazard Quotients

**Receptor:** Surf Scoter  
**Location:** NA06

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	8.6E-02	--	--	--	3.9E-01	--	--	--	--	--	--
LOAEL HQ:	8.6E-03	--	--	--	7.8E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.2E-01	1.7E-02	2.0E-01	#VALUE!	9.5E-01	<b>4.7E+01</b>	4.4E-01	1.4E-01	5.0E-01	4.9E-01
BTAG High HQ:	#VALUE!	1.6E-02	2.7E-04	5.1E-02	#VALUE!	4.2E-02	7.4E-02	9.5E-02	3.5E-03	1.2E-01	4.9E-02
<b>MAXIMUM</b>											
NOAEL HQ:	9.1E-02	--	--	--	4.1E-01	--	--	--	--	--	--
LOAEL HQ:	9.1E-03	--	--	--	8.2E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.9E-01	2.0E-02	2.1E-01	#VALUE!	9.5E-01	<b>5.2E+01</b>	5.0E-01	1.6E-01	6.8E-01	5.3E-01
BTAG High HQ:	#VALUE!	2.1E-02	3.1E-04	5.2E-02	#VALUE!	4.2E-02	8.3E-02	1.1E-01	3.9E-03	1.7E-01	5.3E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Benzol[a]pyrene  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.179521  
Maximum detected value (mg/kg, dry weight): 0.191617

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.61  
Maximum detected value (mg/kg, dry weight): 0.61

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E-02 mean  
Daily exposure (mg/kg-day) 1.3E-02 max

### Hazard Quotients

NOAEL HQ: 8.6E-02 mean  
LOAEL HQ: 8.6E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 9.1E-02 max  
LOAEL HQ: 9.1E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total PCB Congeners  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.322207
Maximum detected value (mg/kg, dry weight):	0.43522

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.64
Maximum detected value (mg/kg, dry weight):	0.64

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.0E-02	mean
Daily exposure (mg/kg-day)	2.6E-02	max

### Hazard Quotients

BTAG Low HQ:	2.2E-01	mean
BTAG High HQ:	1.6E-02	mean
BTAG Low HQ:	2.9E-01	max
BTAG High HQ:	2.1E-02	max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Tributyltin  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.210106
Maximum detected value (mg/kg, dry weight):	0.245509

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-02	mean
Daily exposure (mg/kg-day)	1.4E-02	max

### Hazard Quotients

BTAG Low HQ:	1.7E-02	mean
BTAG High HQ:	2.7E-04	mean
BTAG Low HQ:	2.0E-02	max
BTAG High HQ:	3.1E-04	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Arsenic  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.41489
Maximum detected value (mg/kg, dry weight):	19.76048

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	11
Maximum detected value (mg/kg, dry weight):	11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E+00	mean
Daily exposure (mg/kg-day)	1.1E+00	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	5.1E-02	mean
BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	5.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Cadmium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.277926
Maximum detected value (mg/kg, dry weight):	0.4375

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.6E-02	mean
Daily exposure (mg/kg-day)	2.5E-02	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	1.6E-03	mean
BTAG Low HQ:	3.2E-01	max
BTAG High HQ:	2.4E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Chromium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.114362
Maximum detected value (mg/kg, dry weight):	2.389937

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	67
Maximum detected value (mg/kg, dry weight):	67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.4E-01	mean
Daily exposure (mg/kg-day)	3.5E-01	max

### Hazard Quotients

NOAEL HQ:	3.9E-01	mean
LOAEL HQ:	7.8E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.1E-01	max
LOAEL HQ:	8.2E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Copper  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 15.15957  
Maximum detected value (mg/kg, dry weight): 15.09434

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 410  
Maximum detected value (mg/kg, dry weight): 410

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.2E+00 mean  
Daily exposure (mg/kg-day) 2.2E+00 max

### Hazard Quotients

BTAG Low HQ: 9.5E-01 mean  
BTAG High HQ: 4.2E-02 mean

BTAG Low HQ: 9.5E-01 max  
BTAG High HQ: 4.2E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Lead

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 4.082447  
Maximum detected value (mg/kg, dry weight): 5.430464

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 130  
Maximum detected value (mg/kg, dry weight): 130

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.5E-01 mean  
Daily exposure (mg/kg-day) 7.3E-01 max

### Hazard Quotients

BTAG Low HQ: 4.7E+01 mean  
BTAG High HQ: 7.4E-02 mean

BTAG Low HQ: 5.2E+01 max  
BTAG High HQ: 8.3E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total Mercury  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.119681  
Maximum detected value (mg/kg, dry weight): 0.163522

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 3.2  
Maximum detected value (mg/kg, dry weight): 3.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.7E-02 mean  
Daily exposure (mg/kg-day) 2.0E-02 max

### Hazard Quotients

BTAG HQ: 4.4E-01 mean  
BTAG HQ: 9.5E-02 mean

BTAG Low HQ: 5.0E-01 max  
BTAG High HQ: 1.1E-01 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Nickel

**Location:** NAO6

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.566489  
Maximum detected value (mg/kg, dry weight): 2.955975

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 17  
Maximum detected value (mg/kg, dry weight): 17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.0E-01 mean  
Daily exposure (mg/kg-day) 2.2E-01 max

### Hazard Quotients

BTAG Low HQ: 1.4E-01 mean  
BTAG High HQ: 3.5E-03 mean

BTAG Low HQ: 1.6E-01 max  
BTAG High HQ: 3.9E-03 max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Selenium

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.994681  
Maximum detected value (mg/kg, dry weight): 2.721088

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1  
Maximum detected value (mg/kg, dry weight): 1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E-01 mean  
Daily exposure (mg/kg-day) 1.6E-01 max

### Hazard Quotients

BTAG Low HQ: 5.0E-01 mean  
BTAG High HQ: 1.2E-01 mean

BTAG Low HQ: 6.8E-01 max  
BTAG High HQ: 1.7E-01 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Zinc  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.3191
Maximum detected value (mg/kg, dry weight):	143.7126

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.4E+00	mean
Daily exposure (mg/kg-day)	9.1E+00	max

### Hazard Quotients

BTAG Low HQ:	4.9E-01	mean
BTAG High HQ:	4.9E-02	mean
BTAG Low HQ:	5.3E-01	max
BTAG High HQ:	5.3E-02	max

## Tier I - Summary of Hazard Quotients

Receptor: Sea Lion  
 Location: NA06

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	--	--	--	--	2.8E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.3E-03	--	--	--	--	--	--
BTAG Low HQ:	3.3E-03	2.1E-02	1.9E-02	1.4E+00	#VALUE!	2.3E-01	1.8E-01	1.8E-01	5.1E-01	8.9E-01	3.2E-01
BTAG High HQ:	1.3E-04	5.9E-03	3.2E-04	9.2E-02	#VALUE!	9.7E-04	7.4E-04	1.8E-02	2.2E-03	3.7E-02	7.5E-03
<b>MAXIMUM</b>											
NOAEL HQ:	--	--	--	--	3.0E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.4E-03	--	--	--	--	--	--
BTAG Low HQ:	3.5E-03	2.8E-02	2.2E-02	1.4E+00	#VALUE!	2.3E-01	2.1E-01	2.1E-01	5.8E-01	1.2E+00	3.5E-01
BTAG High HQ:	1.4E-04	7.8E-03	3.7E-04	9.4E-02	#VALUE!	9.7E-04	8.6E-04	2.1E-02	2.4E-03	5.0E-02	8.2E-03

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Benzo[a]pyrene  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.179521
Maximum detected value (mg/kg, dry weight):	0.191617

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.61
Maximum detected value (mg/kg, dry weight):	0.61

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.31
BTAG High (mg/kg-day):	32.8

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.4E-03	mean
Daily exposure (mg/kg-day)	4.6E-03	max

### Hazard Quotients

BTAG Low HQ:	3.3E-03	mean
BTAG High HQ:	1.3E-04	mean
BTAG Low HQ:	3.5E-03	max
BTAG High HQ:	1.4E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total PCB Congeners  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.322207
Maximum detected value (mg/kg, dry weight):	0.43522

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.64
Maximum detected value (mg/kg, dry weight):	0.64

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.36
BTAG High (mg/kg-day):	1.28

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.5E-03	mean
Daily exposure (mg/kg-day)	1.0E-02	max

### Hazard Quotients

BTAG Low HQ:	2.1E-02	mean
BTAG High HQ:	5.9E-03	mean
BTAG Low HQ:	2.8E-02	max
BTAG High HQ:	7.8E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Tributyltin  
**Location:** NAO6

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.210106  
Maximum detected value (mg/kg, dry weight): 0.245509

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.18  
Maximum detected value (mg/kg, dry weight): 0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.25  
BTAG High (mg/kg-day): 15

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.7E-03 mean  
Daily exposure (mg/kg-day) 5.5E-03 max

### Hazard Quotients

BTAG Low HQ: 1.9E-02 mean  
BTAG High HQ: 3.2E-04 mean

BTAG Low HQ: 2.2E-02 max  
BTAG High HQ: 3.7E-04 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Arsenic  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.41489
Maximum detected value (mg/kg, dry weight):	19.76048

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	11
Maximum detected value (mg/kg, dry weight):	11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.32
BTAG High (mg/kg-day):	4.7

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.3E-01	mean
Daily exposure (mg/kg-day)	4.4E-01	max

### Hazard Quotients

BTAG Low HQ:	1.4E+00	mean
BTAG High HQ:	9.2E-02	mean
BTAG Low HQ:	1.4E+00	max
BTAG High HQ:	9.4E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Cadmium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.277926
Maximum detected value (mg/kg, dry weight):	0.4375

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.06
BTAG High (mg/kg-day):	2.64

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.3E-03	mean
Daily exposure (mg/kg-day)	9.8E-03	max

### Hazard Quotients

BTAG Low HQ:	1.1E-01	mean
BTAG High HQ:	2.4E-03	mean
BTAG Low HQ:	1.6E-01	max
BTAG High HQ:	3.7E-03	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Chromium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.114362
Maximum detected value (mg/kg, dry weight):	2.389937

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	67
Maximum detected value (mg/kg, dry weight):	67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	3.3
LOAEL (mg/kg-day):	69
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.2E-02	mean
Daily exposure (mg/kg-day)	9.8E-02	max

### Hazard Quotients

NOAEL HQ:	2.8E-02	mean
LOAEL HQ:	1.3E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.0E-02	max
LOAEL HQ:	1.4E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Copper  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	15.15957
Maximum detected value (mg/kg, dry weight):	15.09434

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	410
Maximum detected value (mg/kg, dry weight):	410

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.67
BTAG High (mg/kg-day):	632

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.1E-01	mean
Daily exposure (mg/kg-day)	6.1E-01	max

### Hazard Quotients

BTAG Low HQ:	2.3E-01	mean
BTAG High HQ:	9.7E-04	mean

BTAG Low HQ:	2.3E-01	max
BTAG High HQ:	9.7E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Lead  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	4.082447
Maximum detected value (mg/kg, dry weight):	5.430464

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	130
Maximum detected value (mg/kg, dry weight):	130

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1
BTAG High (mg/kg-day):	241

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.8E-01	mean
Daily exposure (mg/kg-day)	2.1E-01	max

### Hazard Quotients

BTAG Low HQ:	1.8E-01	mean
BTAG High HQ:	7.4E-04	mean
BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	8.6E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total Mercury  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.119681
Maximum detected value (mg/kg, dry weight):	0.163522

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.2
Maximum detected value (mg/kg, dry weight):	3.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.027
BTAG High (mg/kg-day):	0.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.8E-03	mean
Daily exposure (mg/kg-day)	5.8E-03	max

### Hazard Quotients

BTAG HQ:	1.8E-01	mean
BTAG HQ:	1.8E-02	mean
BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	2.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Nickel  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.566489  
Maximum detected value (mg/kg, dry weight): 2.955975

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 17  
Maximum detected value (mg/kg, dry weight): 17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.133  
BTAG High (mg/kg-day): 31.6

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.8E-02 mean  
Daily exposure (mg/kg-day) 7.7E-02 max

### Hazard Quotients

BTAG Low HQ: 5.1E-01 mean  
BTAG High HQ: 2.2E-03 mean

BTAG Low HQ: 5.8E-01 max  
BTAG High HQ: 2.4E-03 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Selenium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.994681
Maximum detected value (mg/kg, dry weight):	2.721088

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.05
BTAG High (mg/kg-day):	1.21

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.5E-02	mean
Daily exposure (mg/kg-day)	6.1E-02	max

### Hazard Quotients

BTAG Low HQ:	8.9E-01	mean
BTAG High HQ:	3.7E-02	mean
BTAG Low HQ:	1.2E+00	max
BTAG High HQ:	5.0E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Zinc  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.3191
Maximum detected value (mg/kg, dry weight):	143.7126

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	9.6
BTAG High (mg/kg-day):	411

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.1E+00	mean
Daily exposure (mg/kg-day)	3.4E+00	max

### Hazard Quotients

BTAG Low HQ:	3.2E-01	mean
BTAG High HQ:	7.5E-03	mean
BTAG Low HQ:	3.5E-01	max
BTAG High HQ:	8.2E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor: CA Least Tern**  
**Location: NA06**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	1.7E-01	--	--	--	5.4E-01	--	--	--	--	--	--
LOAEL HQ:	1.7E-02	--	--	--	1.1E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	4.6E-01	3.6E-02	4.4E-01	#VALUE!	<b>1.4E+00</b>	<b>6.4E+01</b>	6.3E-01	2.6E-01	<b>1.1E+00</b>	9.8E-01
BTAG High HQ:	#VALUE!	3.3E-02	5.7E-04	1.1E-01	#VALUE!	5.9E-02	1.0E-01	1.4E-01	6.5E-03	2.7E-01	9.8E-02
<b>MAXIMUM</b>											
NOAEL HQ:	1.8E-01	--	--	--	5.8E-01	--	--	--	--	--	--
LOAEL HQ:	1.8E-02	--	--	--	1.2E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	6.1E-01	4.2E-02	4.5E-01	#VALUE!	<b>1.3E+00</b>	<b>7.6E+01</b>	7.6E-01	3.0E-01	<b>1.5E+00</b>	1.1E+00
BTAG High HQ:	#VALUE!	4.3E-02	6.7E-04	1.1E-01	#VALUE!	5.9E-02	1.2E-01	1.7E-01	7.3E-03	3.6E-01	1.1E-01

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Benzo[a]pyrene  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.179521
Maximum detected value (mg/kg, dry weight):	0.191617

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.61
Maximum detected value (mg/kg, dry weight):	0.61

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-02	mean
Daily exposure (mg/kg-day)	2.5E-02	max

### Hazard Quotients

NOAEL HQ:	1.7E-01	mean
LOAEL HQ:	1.7E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	1.8E-01	max
LOAEL HQ:	1.8E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total PCB Congeners  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.322207  
Maximum detected value (mg/kg, dry weight): 0.43522

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.64  
Maximum detected value (mg/kg, dry weight): 0.64

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.09  
BTAG High (mg/kg-day): 1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.1E-02 mean  
Daily exposure (mg/kg-day) 5.5E-02 max

### Hazard Quotients

BTAG Low HQ: 4.6E-01 mean  
BTAG High HQ: 3.3E-02 mean

BTAG Low HQ: 6.1E-01 max  
BTAG High HQ: 4.3E-02 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Tributyltin  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.210106
Maximum detected value (mg/kg, dry weight):	0.245509

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E-02	mean
Daily exposure (mg/kg-day)	3.1E-02	max

### Hazard Quotients

BTAG Low HQ:	3.6E-02	mean
BTAG High HQ:	5.7E-04	mean
BTAG Low HQ:	4.2E-02	max
BTAG High HQ:	6.7E-04	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Arsenic  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.41489  
Maximum detected value (mg/kg, dry weight): 19.76048

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 11  
Maximum detected value (mg/kg, dry weight): 11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.4E+00 mean  
Daily exposure (mg/kg-day) 2.4E+00 max

### Hazard Quotients

BTAG Low HQ: 4.4E-01 mean  
BTAG High HQ: 1.1E-01 mean

BTAG Low HQ: 4.5E-01 max  
BTAG High HQ: 1.1E-01 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Cadmium  
**Location:** NAO6

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.277926  
Maximum detected value (mg/kg, dry weight): 0.4375

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.28  
Maximum detected value (mg/kg, dry weight): 0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.5E-02 mean  
Daily exposure (mg/kg-day) 5.4E-02 max

### Hazard Quotients

BTAG Low HQ: 4.4E-01 mean  
BTAG High HQ: 3.3E-03 mean

BTAG Low HQ: 6.8E-01 max  
BTAG High HQ: 5.2E-03 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Chromium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.114362
Maximum detected value (mg/kg, dry weight):	2.389937

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	67
Maximum detected value (mg/kg, dry weight):	67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.6E-01	mean
Daily exposure (mg/kg-day)	5.0E-01	max

### Hazard Quotients

NOAEL HQ:	5.4E-01	mean
LOAEL HQ:	1.1E-01	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.8E-01	max
LOAEL HQ:	1.2E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Copper  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 15.15957  
Maximum detected value (mg/kg, dry weight): 15.09434

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 410  
Maximum detected value (mg/kg, dry weight): 410

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.1E+00 mean  
Daily exposure (mg/kg-day) 3.1E+00 max

### Hazard Quotients

BTAG Low HQ: 1.4E+00 mean  
BTAG High HQ: 5.9E-02 mean

BTAG Low HQ: 1.3E+00 max  
BTAG High HQ: 5.9E-02 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Lead  
**Location:** NAO6

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 4.082447  
Maximum detected value (mg/kg, dry weight): 5.430464

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 130  
Maximum detected value (mg/kg, dry weight): 130

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.0E-01 mean  
Daily exposure (mg/kg-day) 1.1E+00 max

### Hazard Quotients

BTAG Low HQ: 6.4E+01 mean  
BTAG High HQ: 1.0E-01 mean

BTAG Low HQ: 7.6E+01 max  
BTAG High HQ: 1.2E-01 max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total Mercury  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.119681
Maximum detected value (mg/kg, dry weight):	0.163522

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.2
Maximum detected value (mg/kg, dry weight):	3.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-02	mean
Daily exposure (mg/kg-day)	3.0E-02	max

### Hazard Quotients

BTAG HQ:	6.3E-01	mean
BTAG HQ:	1.4E-01	mean
BTAG Low HQ:	7.6E-01	max
BTAG High HQ:	1.7E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Nickel  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.566489
Maximum detected value (mg/kg, dry weight):	2.955975

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	17
Maximum detected value (mg/kg, dry weight):	17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.7E-01	mean
Daily exposure (mg/kg-day)	4.1E-01	max

### Hazard Quotients

BTAG Low HQ:	2.6E-01	mean
BTAG High HQ:	6.5E-03	mean
BTAG Low HQ:	3.0E-01	max
BTAG High HQ:	7.3E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Selenium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.994681
Maximum detected value (mg/kg, dry weight):	2.721088

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.5E-01	mean
Daily exposure (mg/kg-day)	3.4E-01	max

### Hazard Quotients

BTAG Low HQ:	1.1E+00	mean
BTAG High HQ:	2.7E-01	mean
BTAG Low HQ:	1.5E+00	max
BTAG High HQ:	3.6E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Zinc  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.3191
Maximum detected value (mg/kg, dry weight):	143.7126

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E+01	mean
Daily exposure (mg/kg-day)	1.9E+01	max

### Hazard Quotients

BTAG Low HQ:	9.8E-01	mean
BTAG High HQ:	9.8E-02	mean
BTAG Low HQ:	1.1E+00	max
BTAG High HQ:	1.1E-01	max

## Tier I - Summary of Hazard Quotients

**Receptor:** Green Turtle  
**Location:** NA06

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	5.0E-03	--	--	--	2.3E-02	--	--	--	--	--	--
LOAEL HQ:	5.0E-04	--	--	--	4.7E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.3E-02	9.9E-04	1.2E-02	#VALUE!	5.6E-02	<b>2.8E+00</b>	2.6E-02	8.5E-03	2.9E-02	2.8E-02
BTAG High HQ:	#VALUE!	9.3E-04	1.6E-05	3.0E-03	#VALUE!	2.5E-03	4.4E-03	5.7E-03	2.1E-04	7.2E-03	2.8E-03
<b>MAXIMUM</b>											
NOAEL HQ:	5.3E-03	--	--	--	2.4E-02	--	--	--	--	--	--
LOAEL HQ:	5.3E-04	--	--	--	4.9E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.7E-02	1.1E-03	1.2E-02	#VALUE!	5.6E-02	<b>3.1E+00</b>	3.0E-02	9.4E-03	3.9E-02	3.1E-02
BTAG High HQ:	#VALUE!	1.2E-03	1.8E-05	3.0E-03	#VALUE!	2.5E-03	4.9E-03	6.4E-03	2.3E-04	9.8E-03	3.1E-03

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Benzo[a]pyrene  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.179521
Maximum detected value (mg/kg, dry weight):	0.191617

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.61
Maximum detected value (mg/kg, dry weight):	0.61

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.1E-04	mean
Daily exposure (mg/kg-day)	7.4E-04	max

### Hazard Quotients

NOAEL HQ:	5.0E-03	mean
LOAEL HQ:	5.0E-04	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.3E-03	max
LOAEL HQ:	5.3E-04	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total PCB Congeners  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.322207
Maximum detected value (mg/kg, dry weight):	0.43522

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.64
Maximum detected value (mg/kg, dry weight):	0.64

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-03	mean
Daily exposure (mg/kg-day)	1.5E-03	max

### Hazard Quotients

BTAG Low HQ:	1.3E-02	mean
BTAG High HQ:	9.3E-04	mean
BTAG Low HQ:	1.7E-02	max
BTAG High HQ:	1.2E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Tributyltin  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.210106
Maximum detected value (mg/kg, dry weight):	0.245509

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.2E-04	mean
Daily exposure (mg/kg-day)	8.4E-04	max

### Hazard Quotients

BTAG Low HQ:	9.9E-04	mean
BTAG High HQ:	1.6E-05	mean
BTAG Low HQ:	1.1E-03	max
BTAG High HQ:	1.8E-05	max



## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Arsenic

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.41489
Maximum detected value (mg/kg, dry weight):	19.76048

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	11
Maximum detected value (mg/kg, dry weight):	11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.6E-02	mean
Daily exposure (mg/kg-day)	6.7E-02	max

### Hazard Quotients

BTAG Low HQ:	1.2E-02	mean
BTAG High HQ:	3.0E-03	mean

BTAG Low HQ:	1.2E-02	max
BTAG High HQ:	3.0E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Cadmium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.277926  
Maximum detected value (mg/kg, dry weight): 0.4375

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.28  
Maximum detected value (mg/kg, dry weight): 0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.6E-04 mean  
Daily exposure (mg/kg-day) 1.5E-03 max

### Hazard Quotients

BTAG Low HQ: 1.2E-02 mean  
BTAG High HQ: 9.2E-05 mean

BTAG Low HQ: 1.9E-02 max  
BTAG High HQ: 1.4E-04 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Chromium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.114362  
Maximum detected value (mg/kg, dry weight): 2.389937

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 67  
Maximum detected value (mg/kg, dry weight): 67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.0E-02 mean  
Daily exposure (mg/kg-day) 2.1E-02 max

### Hazard Quotients

NOAEL HQ: 2.3E-02 mean  
LOAEL HQ: 4.7E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 2.4E-02 max  
LOAEL HQ: 4.9E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Copper  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	15.15957
Maximum detected value (mg/kg, dry weight):	15.09434

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	410
Maximum detected value (mg/kg, dry weight):	410

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-01	mean
Daily exposure (mg/kg-day)	1.3E-01	max

### Hazard Quotients

BTAG Low HQ:	5.6E-02	mean
BTAG High HQ:	2.5E-03	mean
BTAG Low HQ:	5.6E-02	max
BTAG High HQ:	2.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Lead  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	4.082447
Maximum detected value (mg/kg, dry weight):	5.430464

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	130
Maximum detected value (mg/kg, dry weight):	130

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.9E-02	mean
Daily exposure (mg/kg-day)	4.3E-02	max

### Hazard Quotients

BTAG Low HQ:	2.8E+00	mean
BTAG High HQ:	4.4E-03	mean
BTAG Low HQ:	3.1E+00	max
BTAG High HQ:	4.9E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total Mercury  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.119681
Maximum detected value (mg/kg, dry weight):	0.163522

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.2
Maximum detected value (mg/kg, dry weight):	3.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E-03	mean
Daily exposure (mg/kg-day)	1.2E-03	max

### Hazard Quotients

BTAG HQ:	2.6E-02	mean
BTAG HQ:	5.7E-03	mean
BTAG Low HQ:	3.0E-02	max
BTAG High HQ:	6.4E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Nickel

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.566489
Maximum detected value (mg/kg, dry weight):	2.955975

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	17
Maximum detected value (mg/kg, dry weight):	17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-02	mean
Daily exposure (mg/kg-day)	1.3E-02	max

### Hazard Quotients

BTAG Low HQ:	8.5E-03	mean
BTAG High HQ:	2.1E-04	mean
BTAG Low HQ:	9.4E-03	max
BTAG High HQ:	2.3E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Selenium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.994681
Maximum detected value (mg/kg, dry weight):	2.721088

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.7E-03	mean
Daily exposure (mg/kg-day)	9.1E-03	max

### Hazard Quotients

BTAG Low HQ:	2.9E-02	mean
BTAG High HQ:	7.2E-03	mean

BTAG Low HQ:	3.9E-02	max
BTAG High HQ:	9.8E-03	max



## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Zinc  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 130.3191  
Maximum detected value (mg/kg, dry weight): 143.7126

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 330  
Maximum detected value (mg/kg, dry weight): 330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.9E-01 mean  
Daily exposure (mg/kg-day) 5.3E-01 max

### Hazard Quotients

BTAG Low HQ: 2.8E-02 mean  
BTAG High HQ: 2.8E-03 mean

BTAG Low HQ: 3.1E-02 max  
BTAG High HQ: 3.1E-03 max

## Tier I - Summary of Hazard Quotients

**Receptor: Brown Pelican**  
**Location: NA06**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	1.1E-01	--	--	--	3.4E-01	--	--	--	--	--	--
LOAEL HQ:	1.1E-02	--	--	--	6.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	3.0E-01	2.4E-02	2.9E-01	#VALUE!	8.5E-01	<b>4.0E+01</b>	3.9E-01	1.7E-01	7.1E-01	6.5E-01
BTAG High HQ:	#VALUE!	2.1E-02	3.8E-04	7.2E-02	#VALUE!	3.7E-02	6.4E-02	8.5E-02	4.2E-03	1.8E-01	6.5E-02
<b>MAXIMUM</b>											
NOAEL HQ:	1.2E-01	--	--	--	3.6E-01	--	--	--	--	--	--
LOAEL HQ:	1.2E-02	--	--	--	7.2E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	4.0E-01	2.8E-02	2.9E-01	#VALUE!	8.4E-01	<b>4.8E+01</b>	4.8E-01	1.9E-01	9.6E-01	7.1E-01
BTAG High HQ:	#VALUE!	2.9E-02	4.4E-04	7.3E-02	#VALUE!	3.7E-02	7.6E-02	1.0E-01	4.8E-03	2.4E-01	7.1E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Benzo[a]pyrene  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.179521  
 Maximum detected value (mg/kg, dry weight): 0.191617

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.61  
 Maximum detected value (mg/kg, dry weight): 0.61

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
 LOAEL (mg/kg-day): 1.4  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

Total PAHs	Total Solids		
250	14.7	100	0.147
270	15.1	100	0.151
190	12.8	100	0.128
320	15.9	100	0.159
320	16.7	100	0.167
<b>270</b>			<b>0.1504</b> 1795.213

BAP			
27	14.7	100	0.147
26	15.1	100	0.151
20	12.8	100	0.128
30	15.9	100	0.159
32	16.7	100	0.167
<b>27</b>			<b>0.1504</b> 179.5213

191.6167665

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.6E-02 mean  
 Daily exposure (mg/kg-day) 1.7E-02 max

### Hazard Quotients

NOAEL HQ: 1.1E-01 mean  
 LOAEL HQ: 1.1E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 1.2E-01 max  
 LOAEL HQ: 1.2E-02 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total PCB Congeners  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.322207
Maximum detected value (mg/kg, dry weight):	0.43522

PCB Cong	Total Solids		
55	14.7	100	0.147
40.1	15.1	100	0.151
20.1	12.8	100	0.128
69.2	15.9	100	0.159
57.9	16.7	100	0.167
<b>48.46</b>			<b>0.1504 322.2074</b>

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.64
Maximum detected value (mg/kg, dry weight):	0.64

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

435.22013

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.7E-02	mean
Daily exposure (mg/kg-day)	3.6E-02	max

### Hazard Quotients

BTAG Low HQ:	3.0E-01	mean
BTAG High HQ:	2.1E-02	mean

BTAG Low HQ:	4.0E-01	max
BTAG High HQ:	2.9E-02	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Tributyltin

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.210106
Maximum detected value (mg/kg, dry weight):	0.245509

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

TBT	Total Solids		
16	14.7	100	0.147
32	15.1	100	0.151
31	12.8	100	0.128
38	15.9	100	0.159
41	16.7	100	0.167
<b>31.6</b>			<b>0.1504 210.1064</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

245.509

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	2.4E-02	mean
BTAG High HQ:	3.8E-04	mean

BTAG Low HQ:	2.8E-02	max
BTAG High HQ:	4.4E-04	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Arsenic  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.41489  
 Maximum detected value (mg/kg, dry weight): 19.76048

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 11  
 Maximum detected value (mg/kg, dry weight): 11

Arsenic	Total Solids			
3	14.7	100	0.147	
2.6	15.1	100	0.151	
2.7	12.8	100	0.128	
3	15.9	100	0.159	
3.3	16.7	100	0.167	
<b>2.92</b>			<b>0.1504</b>	<b>19.41489</b>
19.76048				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
 BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.6E+00 mean  
 Daily exposure (mg/kg-day) 1.6E+00 max

### Hazard Quotients

BTAG Low HQ: 2.9E-01 mean  
 BTAG High HQ: 7.2E-02 mean

BTAG Low HQ: 2.9E-01 max  
 BTAG High HQ: 7.3E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Cadmium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.277926  
 Maximum detected value (mg/kg, dry weight): 0.4375

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.28  
 Maximum detected value (mg/kg, dry weight): 0.28

Cadmium	Total Solids			
0.032	14.7	100	0.147	
0.033	15.1	100	0.151	
0.056	12.8	100	0.128	
0.037	15.9	100	0.159	
0.051	16.7	100	0.167	
<b>0.0418</b>			<b>0.1504</b>	<b>0.277926</b>
0.4375				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
 BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.3E-02 mean  
 Daily exposure (mg/kg-day) 3.6E-02 max

### Hazard Quotients

BTAG Low HQ: 2.9E-01 mean  
 BTAG High HQ: 2.2E-03 mean

BTAG Low HQ: 4.5E-01 max  
 BTAG High HQ: 3.4E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Chromium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.114362  
 Maximum detected value (mg/kg, dry weight): 2.389937

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 67  
 Maximum detected value (mg/kg, dry weight): 67

Chromium	Total Solids		
0.33	14.7	100	0.147
0.34	15.1	100	0.151
0.29	12.8	100	0.128
0.38	15.9	100	0.159
0.25	16.7	100	0.167
<b>0.318</b>			<b>0.1504 2.114362</b>
2.389937			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
 LOAEL (mg/kg-day): 4.3  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.9E-01 mean  
 Daily exposure (mg/kg-day) 3.1E-01 max

### Hazard Quotients

NOAEL HQ: 3.4E-01 mean  
 LOAEL HQ: 6.7E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 3.6E-01 max  
 LOAEL HQ: 7.2E-02 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Copper  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 15.15957  
 Maximum detected value (mg/kg, dry weight): 15.09434

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 410  
 Maximum detected value (mg/kg, dry weight): 410

Copper	Total Solids		
2.3	14.7	100	0.147
2.1	15.1	100	0.151
2.3	12.8	100	0.128
2.4	15.9	100	0.159
2.3	16.7	100	0.167
<b>2.28</b>			<b>0.1504 15.15957</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
 BTAG High (mg/kg-day): 52.3

15.09434

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.9E+00 mean  
 Daily exposure (mg/kg-day) 1.9E+00 max

### Hazard Quotients

BTAG Low HQ: 8.5E-01 mean  
 BTAG High HQ: 3.7E-02 mean

BTAG Low HQ: 8.4E-01 max  
 BTAG High HQ: 3.7E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Lead  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
Food ingestion rate (kg/day dry wt): 0.23  
Sediment ingestion rate (kg/day dry wt): 0.005  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 4.082447  
Maximum detected value (mg/kg, dry weight): 5.430464

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 130  
Maximum detected value (mg/kg, dry weight): 130

Lead	Total Solids			
0.64	14.7	100	0.147	
0.82	15.1	100	0.151	
0.5	12.8	100	0.128	
0.53	15.9	100	0.159	
0.58	16.7	100	0.167	
<b>0.614</b>			<b>0.1504</b>	<b>4.082447</b>
				5.430464

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.6E-01 mean  
Daily exposure (mg/kg-day) 6.7E-01 max

### Hazard Quotients

BTAG Low HQ: 4.0E+01 mean  
BTAG High HQ: 6.4E-02 mean

BTAG Low HQ: 4.8E+01 max  
BTAG High HQ: 7.6E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total Mercury  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.119681  
 Maximum detected value (mg/kg, dry weight): 0.163522

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 3.2  
 Maximum detected value (mg/kg, dry weight): 3.2

Mercury	Total Solids			
0.016	14.7	100	0.147	
0.014	15.1	100	0.151	
0.016	12.8	100	0.128	
0.026	15.9	100	0.159	
0.018	16.7	100	0.167	
<b>0.018</b>			<b>0.1504</b>	<b>0.119681</b>
				0.163522

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
 BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.5E-02 mean  
 Daily exposure (mg/kg-day) 1.9E-02 max

### Hazard Quotients

BTAG HQ: 3.9E-01 mean  
 BTAG HQ: 8.5E-02 mean

BTAG Low HQ: 4.8E-01 max  
 BTAG High HQ: 1.0E-01 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Nickel  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.566489  
 Maximum detected value (mg/kg, dry weight): 2.955975

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 17  
 Maximum detected value (mg/kg, dry weight): 17

	Nickel	Total Solids		
	0.38	14.7	100	0.147
	0.37	15.1	100	0.151
	0.34	12.8	100	0.128
	0.47	15.9	100	0.159
	0.37	16.7	100	0.167
	<b>0.386</b>			<b>0.1504 2.566489</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
 BTAG High (mg/kg-day): 56.3

2.955975

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.4E-01 mean  
 Daily exposure (mg/kg-day) 2.7E-01 max

### Hazard Quotients

BTAG Low HQ: 1.7E-01 mean  
 BTAG High HQ: 4.2E-03 mean

BTAG Low HQ: 1.9E-01 max  
 BTAG High HQ: 4.8E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Selenium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.994681  
 Maximum detected value (mg/kg, dry weight): 2.721088

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1  
 Maximum detected value (mg/kg, dry weight): 1

Selenium	Total Solids			
0.4	14.7	100	0.147	
0.2	15.1	100	0.151	
0.3	12.8	100	0.128	
0.3	15.9	100	0.159	
0.3	16.7	100	0.167	
<b>0.3</b>			<b>0.1504</b>	<b>1.994681</b>
2.721088				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
 BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.6E-01 mean  
 Daily exposure (mg/kg-day) 2.2E-01 max

### Hazard Quotients

BTAG Low HQ: 7.1E-01 mean  
 BTAG High HQ: 1.8E-01 mean

BTAG Low HQ: 9.6E-01 max  
 BTAG High HQ: 2.4E-01 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Zinc  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.3191
Maximum detected value (mg/kg, dry weight):	143.7126

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

Zinc	Total Solids		
17	14.7	100	0.147
18	15.1	100	0.151
21	12.8	100	0.128
18	15.9	100	0.159
24	16.7	100	0.167
<b>19.6</b>			<b>0.1504 130.3191</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

143.7126

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E+01	mean
Daily exposure (mg/kg-day)	1.2E+01	max

### Hazard Quotients

BTAG Low HQ:	6.5E-01	mean
BTAG High HQ:	6.5E-02	mean

BTAG Low HQ:	7.1E-01	max
BTAG High HQ:	7.1E-02	max

## Tier I - Summary of Hazard Quotients

**Receptor: Western Grebe**  
**Location: NA06**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	9.0E-02	--	--	--	4.4E-01	--	--	--	--	--	--
LOAEL HQ:	9.0E-03	--	--	--	8.8E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.3E-01	1.7E-02	2.1E-01	#VALUE!	<b>1.1E+00</b>	<b>5.2E+01</b>	4.9E-01	1.5E-01	5.1E-01	5.0E-01
BTAG High HQ:	#VALUE!	1.6E-02	2.8E-04	5.2E-02	#VALUE!	4.7E-02	8.4E-02	1.1E-01	3.8E-03	1.3E-01	5.0E-02
<b>MAXIMUM</b>											
NOAEL HQ:	9.5E-02	--	--	--	4.6E-01	--	--	--	--	--	--
LOAEL HQ:	9.5E-03	--	--	--	9.1E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	3.0E-01	2.0E-02	2.1E-01	#VALUE!	<b>1.1E+00</b>	<b>5.8E+01</b>	5.5E-01	1.7E-01	6.9E-01	5.5E-01
BTAG High HQ:	#VALUE!	2.1E-02	3.2E-04	5.3E-02	#VALUE!	4.7E-02	9.2E-02	1.2E-01	4.1E-03	1.7E-01	5.5E-02

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Benzo[a]pyrene  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.179521
Maximum detected value (mg/kg, dry weight):	0.191617

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.61
Maximum detected value (mg/kg, dry weight):	0.61

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-02	mean
Daily exposure (mg/kg-day)	1.3E-02	max

### Hazard Quotients

NOAEL HQ:	9.0E-02	mean
LOAEL HQ:	9.0E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	9.5E-02	max
LOAEL HQ:	9.5E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total PCB Congeners  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.322207
Maximum detected value (mg/kg, dry weight):	0.43522

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.64
Maximum detected value (mg/kg, dry weight):	0.64

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.1E-02	mean
Daily exposure (mg/kg-day)	2.7E-02	max

### Hazard Quotients

BTAG Low HQ:	2.3E-01	mean
BTAG High HQ:	1.6E-02	mean
BTAG Low HQ:	3.0E-01	max
BTAG High HQ:	2.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Tributyltin

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.210106
Maximum detected value (mg/kg, dry weight):	0.245509

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-02	mean
Daily exposure (mg/kg-day)	1.5E-02	max

### Hazard Quotients

BTAG Low HQ:	1.7E-02	mean
BTAG High HQ:	2.8E-04	mean
BTAG Low HQ:	2.0E-02	max
BTAG High HQ:	3.2E-04	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Arsenic

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.41489
Maximum detected value (mg/kg, dry weight):	19.76048

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	11
Maximum detected value (mg/kg, dry weight):	11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E+00	mean
Daily exposure (mg/kg-day)	1.2E+00	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	5.2E-02	mean

BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	5.3E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Cadmium

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.277926
Maximum detected value (mg/kg, dry weight):	0.4375

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E-02	mean
Daily exposure (mg/kg-day)	2.6E-02	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	1.6E-03	mean

BTAG Low HQ:	3.2E-01	max
BTAG High HQ:	2.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Chromium  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.114362
Maximum detected value (mg/kg, dry weight):	2.389937

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	67
Maximum detected value (mg/kg, dry weight):	67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.8E-01	mean
Daily exposure (mg/kg-day)	3.9E-01	max

### Hazard Quotients

NOAEL HQ:	4.4E-01	mean
LOAEL HQ:	8.8E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.6E-01	max
LOAEL HQ:	9.1E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Copper

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	15.15957
Maximum detected value (mg/kg, dry weight):	15.09434

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	410
Maximum detected value (mg/kg, dry weight):	410

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E+00	mean
Daily exposure (mg/kg-day)	2.4E+00	max

### Hazard Quotients

BTAG Low HQ:	1.1E+00	mean
BTAG High HQ:	4.7E-02	mean
BTAG Low HQ:	1.1E+00	max
BTAG High HQ:	4.7E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Lead

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	4.082447
Maximum detected value (mg/kg, dry weight):	5.430464

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	130
Maximum detected value (mg/kg, dry weight):	130

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.3E-01	mean
Daily exposure (mg/kg-day)	8.1E-01	max

### Hazard Quotients

BTAG Low HQ:	5.2E+01	mean
BTAG High HQ:	8.4E-02	mean

BTAG Low HQ:	5.8E+01	max
BTAG High HQ:	9.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total Mercury  
**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.119681
Maximum detected value (mg/kg, dry weight):	0.163522

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.2
Maximum detected value (mg/kg, dry weight):	3.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E-02	mean
Daily exposure (mg/kg-day)	2.2E-02	max

### Hazard Quotients

BTAG HQ:	4.9E-01	mean
BTAG HQ:	1.1E-01	mean
BTAG Low HQ:	5.5E-01	max
BTAG High HQ:	1.2E-01	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Nickel

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.566489
Maximum detected value (mg/kg, dry weight):	2.955975

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	17
Maximum detected value (mg/kg, dry weight):	17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.1E-01	mean
Daily exposure (mg/kg-day)	2.3E-01	max

### Hazard Quotients

BTAG Low HQ:	1.5E-01	mean
BTAG High HQ:	3.8E-03	mean
BTAG Low HQ:	1.7E-01	max
BTAG High HQ:	4.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Selenium

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.994681
Maximum detected value (mg/kg, dry weight):	2.721088

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-01	mean
Daily exposure (mg/kg-day)	1.6E-01	max

### Hazard Quotients

BTAG Low HQ:	5.1E-01	mean
BTAG High HQ:	1.3E-01	mean

BTAG Low HQ:	6.9E-01	max
BTAG High HQ:	1.7E-01	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Zinc

**Location:** NA06

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.3191
Maximum detected value (mg/kg, dry weight):	143.7126

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.7E+00	mean
Daily exposure (mg/kg-day)	9.4E+00	max

### Hazard Quotients

BTAG Low HQ:	5.0E-01	mean
BTAG High HQ:	5.0E-02	mean
BTAG Low HQ:	5.5E-01	max
BTAG High HQ:	5.5E-02	max

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## Tier I - Summary of Hazard Quotients

**Receptor: Surf Scoter**  
**Location: NA11**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	7.2E-02	--	--	--	3.4E-01	--	--	--	--	--	--
LOAEL HQ:	7.2E-03	--	--	--	6.9E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.1E-01	7.3E-03	2.1E-01	#VALUE!	5.7E-01	<b>2.8E+01</b>	2.2E-01	1.3E-01	4.8E-01	4.1E-01
BTAG High HQ:	#VALUE!	8.1E-03	1.2E-04	5.3E-02	#VALUE!	2.5E-02	4.4E-02	4.8E-02	3.1E-03	1.2E-01	4.1E-02
<b>MAXIMUM</b>											
NOAEL HQ:	7.9E-02	--	--	--	3.8E-01	--	--	--	--	--	--
LOAEL HQ:	7.9E-03	--	--	--	7.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.2E-01	9.6E-03	2.5E-01	#VALUE!	6.6E-01	<b>3.1E+01</b>	2.4E-01	1.4E-01	6.4E-01	4.6E-01
BTAG High HQ:	#VALUE!	8.5E-03	1.5E-04	6.2E-02	#VALUE!	2.9E-02	4.9E-02	5.1E-02	3.4E-03	1.6E-01	4.6E-02

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Benzol[a]pyrene

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.15625  
Maximum detected value (mg/kg, dry weight): 0.174194

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.4  
Maximum detected value (mg/kg, dry weight): 0.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.0E-02 mean  
Daily exposure (mg/kg-day) 1.1E-02 max

### Hazard Quotients

NOAEL HQ: 7.2E-02 mean  
LOAEL HQ: 7.2E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 7.9E-02 max  
LOAEL HQ: 7.9E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total PCB Congeners  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.172418
Maximum detected value (mg/kg, dry weight):	0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.19
Maximum detected value (mg/kg, dry weight):	0.19

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E-02	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	1.1E-01	mean
BTAG High HQ:	8.1E-03	mean
BTAG Low HQ:	1.2E-01	max
BTAG High HQ:	8.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Tributyltin  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.09375
Maximum detected value (mg/kg, dry weight):	0.122581

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.038
Maximum detected value (mg/kg, dry weight):	0.038

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.4E-03	mean
Daily exposure (mg/kg-day)	7.0E-03	max

### Hazard Quotients

BTAG Low HQ:	7.3E-03	mean
BTAG High HQ:	1.2E-04	mean
BTAG Low HQ:	9.6E-03	max
BTAG High HQ:	1.5E-04	max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Arsenic

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	20.24457
Maximum detected value (mg/kg, dry weight):	23.87097

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	9.3
Maximum detected value (mg/kg, dry weight):	9.3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E+00	mean
Daily exposure (mg/kg-day)	1.4E+00	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	5.3E-02	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	6.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Cadmium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.264946
Maximum detected value (mg/kg, dry weight):	0.367347

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.6E-02	mean
Daily exposure (mg/kg-day)	2.1E-02	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	1.5E-03	mean
BTAG Low HQ:	2.7E-01	max
BTAG High HQ:	2.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Chromium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.861413
Maximum detected value (mg/kg, dry weight):	2.44898

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.0E-01	mean
Daily exposure (mg/kg-day)	3.3E-01	max

### Hazard Quotients

NOAEL HQ:	3.4E-01	mean
LOAEL HQ:	6.9E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.8E-01	max
LOAEL HQ:	7.7E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Copper

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 12.90761  
Maximum detected value (mg/kg, dry weight): 16.77419

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 180  
Maximum detected value (mg/kg, dry weight): 180

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.3E+00 mean  
Daily exposure (mg/kg-day) 1.5E+00 max

### Hazard Quotients

BTAG Low HQ: 5.7E-01 mean  
BTAG High HQ: 2.5E-02 mean

BTAG Low HQ: 6.6E-01 max  
BTAG High HQ: 2.9E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Lead

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.663043  
Maximum detected value (mg/kg, dry weight): 3.419355

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 73  
Maximum detected value (mg/kg, dry weight): 73

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.9E-01 mean  
Daily exposure (mg/kg-day) 4.3E-01 max

### Hazard Quotients

BTAG Low HQ: 2.8E+01 mean  
BTAG High HQ: 4.4E-02 mean

BTAG Low HQ: 3.1E+01 max  
BTAG High HQ: 4.9E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total Mercury  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.10462  
Maximum detected value (mg/kg, dry weight): 0.116129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.85  
Maximum detected value (mg/kg, dry weight): 0.85

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 8.6E-03 mean  
Daily exposure (mg/kg-day) 9.3E-03 max

### Hazard Quotients

BTAG Low HQ: 2.2E-01 mean  
BTAG High HQ: 4.8E-02 mean

BTAG Low HQ: 2.4E-01 max  
BTAG High HQ: 5.1E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Nickel

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.296196
Maximum detected value (mg/kg, dry weight):	2.516129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.8E-01	mean
Daily exposure (mg/kg-day)	1.9E-01	max

### Hazard Quotients

BTAG Low HQ:	1.3E-01	mean
BTAG High HQ:	3.1E-03	mean

BTAG Low HQ:	1.4E-01	max
BTAG High HQ:	3.4E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Selenium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.902174
Maximum detected value (mg/kg, dry weight):	2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-01	mean
Daily exposure (mg/kg-day)	1.5E-01	max

### Hazard Quotients

BTAG Low HQ:	4.8E-01	mean
BTAG High HQ:	1.2E-01	mean
BTAG Low HQ:	6.4E-01	max
BTAG High HQ:	1.6E-01	max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Zinc  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	112.7717
Maximum detected value (mg/kg, dry weight):	129.0323

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	230
Maximum detected value (mg/kg, dry weight):	230

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.1E+00	mean
Daily exposure (mg/kg-day)	8.0E+00	max

### Hazard Quotients

BTAG Low HQ:	4.1E-01	mean
BTAG High HQ:	4.1E-02	mean
BTAG Low HQ:	4.6E-01	max
BTAG High HQ:	4.6E-02	max

## Tier I - Summary of Hazard Quotients

**Receptor:** Sea Lion  
**Location:** NA11

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	--	--	--	--	2.5E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.2E-03	--	--	--	--	--	--
BTAG Low HQ:	2.8E-03	1.1E-02	8.4E-03	<b>1.4E+00</b>	#VALUE!	1.5E-01	1.1E-01	1.1E-01	4.6E-01	8.5E-01	2.7E-01
BTAG High HQ:	1.1E-04	3.1E-03	1.4E-04	9.6E-02	#VALUE!	6.4E-04	4.5E-04	1.1E-02	1.9E-03	3.5E-02	6.4E-03
<b>MAXIMUM</b>											
NOAEL HQ:	--	--	--	--	2.9E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.4E-03	--	--	--	--	--	--
BTAG Low HQ:	3.1E-03	1.1E-02	1.1E-02	<b>1.7E+00</b>	#VALUE!	1.8E-01	1.3E-01	1.2E-01	4.9E-01	<b>1.1E+00</b>	3.1E-01
BTAG High HQ:	1.3E-04	3.2E-03	1.8E-04	1.1E-01	#VALUE!	7.8E-04	5.2E-04	1.2E-02	2.1E-03	4.7E-02	7.3E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Benzol[a]pyrene  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.15625  
Maximum detected value (mg/kg, dry weight): 0.174194

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.4  
Maximum detected value (mg/kg, dry weight): 0.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.31  
BTAG High (mg/kg-day): 32.8

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.7E-03 mean  
Daily exposure (mg/kg-day) 4.1E-03 max

### Hazard Quotients

BTAG Low HQ: 2.8E-03 mean  
BTAG High HQ: 1.1E-04 mean

BTAG Low HQ: 3.1E-03 max  
BTAG High HQ: 1.3E-04 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total PCB Congeners  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.172418
Maximum detected value (mg/kg, dry weight):	0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.19
Maximum detected value (mg/kg, dry weight):	0.19

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.36
BTAG High (mg/kg-day):	1.28

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.9E-03	mean
Daily exposure (mg/kg-day)	4.1E-03	max

### Hazard Quotients

BTAG Low HQ:	1.1E-02	mean
BTAG High HQ:	3.1E-03	mean
BTAG Low HQ:	1.1E-02	max
BTAG High HQ:	3.2E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Tributyltin  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.09375  
Maximum detected value (mg/kg, dry weight): 0.122581

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.038  
Maximum detected value (mg/kg, dry weight): 0.038

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.25  
BTAG High (mg/kg-day): 15

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.1E-03 mean  
Daily exposure (mg/kg-day) 2.7E-03 max

### Hazard Quotients

BTAG Low HQ: 8.4E-03 mean  
BTAG High HQ: 1.4E-04 mean

BTAG Low HQ: 1.1E-02 max  
BTAG High HQ: 1.8E-04 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Arsenic  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 20.24457  
Maximum detected value (mg/kg, dry weight): 23.87097

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 9.3  
Maximum detected value (mg/kg, dry weight): 9.3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.32  
BTAG High (mg/kg-day): 4.7

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.5E-01 mean  
Daily exposure (mg/kg-day) 5.3E-01 max

### Hazard Quotients

BTAG Low HQ: 1.4E+00 mean  
BTAG High HQ: 9.6E-02 mean

BTAG Low HQ: 1.7E+00 max  
BTAG High HQ: 1.1E-01 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Cadmium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.264946
Maximum detected value (mg/kg, dry weight):	0.367347

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.06
BTAG High (mg/kg-day):	2.64

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.0E-03	mean
Daily exposure (mg/kg-day)	8.3E-03	max

### Hazard Quotients

BTAG Low HQ:	1.0E-01	mean
BTAG High HQ:	2.3E-03	mean
BTAG Low HQ:	1.4E-01	max
BTAG High HQ:	3.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Chromium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.861413
Maximum detected value (mg/kg, dry weight):	2.44898

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	3.3
LOAEL (mg/kg-day):	69
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.1E-02	mean
Daily exposure (mg/kg-day)	9.4E-02	max

### Hazard Quotients

NOAEL HQ:	2.5E-02	mean
LOAEL HQ:	1.2E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	2.9E-02	max
LOAEL HQ:	1.4E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Copper  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 12.90761  
Maximum detected value (mg/kg, dry weight): 16.77419

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 180  
Maximum detected value (mg/kg, dry weight): 180

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.67  
BTAG High (mg/kg-day): 632

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.1E-01 mean  
Daily exposure (mg/kg-day) 4.9E-01 max

### Hazard Quotients

BTAG Low HQ: 1.5E-01 mean  
BTAG High HQ: 6.4E-04 mean

BTAG Low HQ: 1.8E-01 max  
BTAG High HQ: 7.8E-04 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Lead  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.663043
Maximum detected value (mg/kg, dry weight):	3.419355

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	73
Maximum detected value (mg/kg, dry weight):	73

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1
BTAG High (mg/kg-day):	241

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-01	mean
Daily exposure (mg/kg-day)	1.3E-01	max

### Hazard Quotients

BTAG Low HQ:	1.1E-01	mean
BTAG High HQ:	4.5E-04	mean
BTAG Low HQ:	1.3E-01	max
BTAG High HQ:	5.2E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total Mercury  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.10462
Maximum detected value (mg/kg, dry weight):	0.116129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.85
Maximum detected value (mg/kg, dry weight):	0.85

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.027
BTAG High (mg/kg-day):	0.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.9E-03	mean
Daily exposure (mg/kg-day)	3.1E-03	max

### Hazard Quotients

BTAG HQ:	1.1E-01	mean
BTAG HQ:	1.1E-02	mean
BTAG Low HQ:	1.2E-01	max
BTAG High HQ:	1.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Nickel  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.296196  
Maximum detected value (mg/kg, dry weight): 2.516129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 15  
Maximum detected value (mg/kg, dry weight): 15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.133  
BTAG High (mg/kg-day): 31.6

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.1E-02 mean  
Daily exposure (mg/kg-day) 6.6E-02 max

### Hazard Quotients

BTAG Low HQ: 4.6E-01 mean  
BTAG High HQ: 1.9E-03 mean

BTAG Low HQ: 4.9E-01 max  
BTAG High HQ: 2.1E-03 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Selenium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.902174
Maximum detected value (mg/kg, dry weight):	2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.05
BTAG High (mg/kg-day):	1.21

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.3E-02	mean
Daily exposure (mg/kg-day)	5.7E-02	max

### Hazard Quotients

BTAG Low HQ:	8.5E-01	mean
BTAG High HQ:	3.5E-02	mean
BTAG Low HQ:	1.1E+00	max
BTAG High HQ:	4.7E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Zinc  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	112.7717
Maximum detected value (mg/kg, dry weight):	129.0323

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	230
Maximum detected value (mg/kg, dry weight):	230

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	9.6
BTAG High (mg/kg-day):	411

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E+00	mean
Daily exposure (mg/kg-day)	3.0E+00	max

### Hazard Quotients

BTAG Low HQ:	2.7E-01	mean
BTAG High HQ:	6.4E-03	mean
BTAG Low HQ:	3.1E-01	max
BTAG High HQ:	7.3E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor: CA Least Tern**  
**Location: NA11**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	1.5E-01	--	--	--	4.7E-01	--	--	--	--	--	--
LOAEL HQ:	1.5E-02	--	--	--	9.5E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.4E-01	1.6E-02	4.6E-01	#VALUE!	9.3E-01	<b>3.9E+01</b>	3.9E-01	2.4E-01	<b>1.0E+00</b>	8.4E-01
BTAG High HQ:	#VALUE!	1.7E-02	2.5E-04	1.1E-01	#VALUE!	4.1E-02	6.3E-02	8.5E-02	5.8E-03	2.5E-01	8.4E-02
<b>MAXIMUM</b>											
NOAEL HQ:	1.6E-01	--	--	--	5.6E-01	--	--	--	--	--	--
LOAEL HQ:	1.6E-02	--	--	--	1.1E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.5E-01	2.1E-02	5.4E-01	#VALUE!	<b>1.1E+00</b>	<b>4.6E+01</b>	4.3E-01	2.6E-01	<b>1.4E+00</b>	9.6E-01
BTAG High HQ:	#VALUE!	1.8E-02	3.3E-04	1.3E-01	#VALUE!	5.0E-02	7.3E-02	9.3E-02	6.3E-03	3.4E-01	9.6E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Benzo[a]pyrene  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.15625
Maximum detected value (mg/kg, dry weight):	0.174194

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.4
Maximum detected value (mg/kg, dry weight):	0.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.0E-02	mean
Daily exposure (mg/kg-day)	2.3E-02	max

### Hazard Quotients

NOAEL HQ:	1.5E-01	mean
LOAEL HQ:	1.5E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	1.6E-01	max
LOAEL HQ:	1.6E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total PCB Congeners  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.172418
Maximum detected value (mg/kg, dry weight):	0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.19
Maximum detected value (mg/kg, dry weight):	0.19

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.2E-02	mean
Daily exposure (mg/kg-day)	2.3E-02	max

### Hazard Quotients

BTAG Low HQ:	2.4E-01	mean
BTAG High HQ:	1.7E-02	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	1.8E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Tributyltin  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.09375
Maximum detected value (mg/kg, dry weight):	0.122581

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.038
Maximum detected value (mg/kg, dry weight):	0.038

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-02	mean
Daily exposure (mg/kg-day)	1.5E-02	max

### Hazard Quotients

BTAG Low HQ:	1.6E-02	mean
BTAG High HQ:	2.5E-04	mean
BTAG Low HQ:	2.1E-02	max
BTAG High HQ:	3.3E-04	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Arsenic  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	20.24457
Maximum detected value (mg/kg, dry weight):	23.87097

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	9.3
Maximum detected value (mg/kg, dry weight):	9.3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.5E+00	mean
Daily exposure (mg/kg-day)	2.9E+00	max

### Hazard Quotients

BTAG Low HQ:	4.6E-01	mean
BTAG High HQ:	1.1E-01	mean
BTAG Low HQ:	5.4E-01	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Cadmium

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036	
Food ingestion rate (kg/day dry wt):	0.0044	
Sediment ingestion rate (kg/day dry wt):	0.00011	
Area Use Factor (unitless):	1	0.003
Time Use Factor (unitless):	1	

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.264946
Maximum detected value (mg/kg, dry weight):	0.367347

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.3E-02	mean
Daily exposure (mg/kg-day)	4.6E-02	max

### Hazard Quotients

BTAG Low HQ:	4.2E-01	mean
BTAG High HQ:	3.2E-03	mean
BTAG Low HQ:	5.7E-01	max
BTAG High HQ:	4.4E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Chromium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.861413
Maximum detected value (mg/kg, dry weight):	2.44898

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.1E-01	mean
Daily exposure (mg/kg-day)	4.8E-01	max

### Hazard Quotients

NOAEL HQ:	4.7E-01	mean
LOAEL HQ:	9.5E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.6E-01	max
LOAEL HQ:	1.1E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Copper  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 12.90761  
Maximum detected value (mg/kg, dry weight): 16.77419

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 180  
Maximum detected value (mg/kg, dry weight): 180

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.1E+00 mean  
Daily exposure (mg/kg-day) 2.6E+00 max

### Hazard Quotients

BTAG Low HQ: 9.3E-01 mean  
BTAG High HQ: 4.1E-02 mean

BTAG Low HQ: 1.1E+00 max  
BTAG High HQ: 5.0E-02 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Lead  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.663043  
Maximum detected value (mg/kg, dry weight): 3.419355

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 73  
Maximum detected value (mg/kg, dry weight): 73

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.5E-01 mean  
Daily exposure (mg/kg-day) 6.4E-01 max

### Hazard Quotients

BTAG Low HQ: 3.9E+01 mean  
BTAG High HQ: 6.3E-02 mean

BTAG Low HQ: 4.6E+01 max  
BTAG High HQ: 7.3E-02 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total Mercury  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.10462
Maximum detected value (mg/kg, dry weight):	0.116129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.85
Maximum detected value (mg/kg, dry weight):	0.85

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-02	mean
Daily exposure (mg/kg-day)	1.7E-02	max

### Hazard Quotients

BTAG HQ:	3.9E-01	mean
BTAG HQ:	8.5E-02	mean
BTAG Low HQ:	4.3E-01	max
BTAG High HQ:	9.3E-02	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Nickel

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.296196
Maximum detected value (mg/kg, dry weight):	2.516129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.3E-01	mean
Daily exposure (mg/kg-day)	3.5E-01	max

### Hazard Quotients

BTAG Low HQ:	2.4E-01	mean
BTAG High HQ:	5.8E-03	mean

BTAG Low HQ:	2.6E-01	max
BTAG High HQ:	6.3E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Selenium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.902174
Maximum detected value (mg/kg, dry weight):	2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-01	mean
Daily exposure (mg/kg-day)	3.2E-01	max

### Hazard Quotients

BTAG Low HQ:	1.0E+00	mean
BTAG High HQ:	2.5E-01	mean
BTAG Low HQ:	1.4E+00	max
BTAG High HQ:	3.4E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Zinc  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	112.7717
Maximum detected value (mg/kg, dry weight):	129.0323

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	230
Maximum detected value (mg/kg, dry weight):	230

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.4E+01	mean
Daily exposure (mg/kg-day)	1.6E+01	max

### Hazard Quotients

BTAG Low HQ:	8.4E-01	mean
BTAG High HQ:	8.4E-02	mean
BTAG Low HQ:	9.6E-01	max
BTAG High HQ:	9.6E-02	max

## Tier I - Summary of Hazard Quotients

**Receptor: Green Turtle**  
**Location: NA11**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	4.2E-03	--	--	--	2.0E-02	--	--	--	--	--	--
LOAEL HQ:	4.2E-04	--	--	--	4.1E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	6.7E-03	4.3E-04	1.2E-02	#VALUE!	3.4E-02	<b>1.6E+00</b>	1.3E-02	7.6E-03	2.8E-02	2.4E-02
BTAG High HQ:	#VALUE!	4.7E-04	6.8E-06	3.1E-03	#VALUE!	1.5E-03	2.6E-03	2.8E-03	1.9E-04	6.9E-03	2.4E-03
<b>MAXIMUM</b>											
NOAEL HQ:	4.6E-03	--	--	--	2.3E-02	--	--	--	--	--	--
LOAEL HQ:	4.6E-04	--	--	--	4.5E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	7.0E-03	5.6E-04	1.4E-02	#VALUE!	3.9E-02	<b>1.8E+00</b>	1.4E-02	8.1E-03	3.7E-02	2.7E-02
BTAG High HQ:	#VALUE!	5.0E-04	8.9E-06	3.6E-03	#VALUE!	1.7E-03	2.9E-03	3.0E-03	2.0E-04	9.3E-03	2.7E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Benzol[a]pyrene  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.15625  
Maximum detected value (mg/kg, dry weight): 0.174194

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.4  
Maximum detected value (mg/kg, dry weight): 0.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.9E-04 mean  
Daily exposure (mg/kg-day) 6.5E-04 max

### Hazard Quotients

NOAEL HQ: 4.2E-03 mean  
LOAEL HQ: 4.2E-04 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 4.6E-03 max  
LOAEL HQ: 4.6E-04 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total PCB Congeners  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.172418
Maximum detected value (mg/kg, dry weight):	0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.19
Maximum detected value (mg/kg, dry weight):	0.19

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.0E-04	mean
Daily exposure (mg/kg-day)	6.3E-04	max

### Hazard Quotients

BTAG Low HQ:	6.7E-03	mean
BTAG High HQ:	4.7E-04	mean
BTAG Low HQ:	7.0E-03	max
BTAG High HQ:	5.0E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Tributyltin  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.09375  
Maximum detected value (mg/kg, dry weight): 0.122581

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.038  
Maximum detected value (mg/kg, dry weight): 0.038

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.1E-04 mean  
Daily exposure (mg/kg-day) 4.1E-04 max

### Hazard Quotients

BTAG Low HQ: 4.3E-04 mean  
BTAG High HQ: 6.8E-06 mean

BTAG Low HQ: 5.6E-04 max  
BTAG High HQ: 8.9E-06 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Arsenic

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	20.24457
Maximum detected value (mg/kg, dry weight):	23.87097

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	9.3
Maximum detected value (mg/kg, dry weight):	9.3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.8E-02	mean
Daily exposure (mg/kg-day)	8.0E-02	max

### Hazard Quotients

BTAG Low HQ:	1.2E-02	mean
BTAG High HQ:	3.1E-03	mean
BTAG Low HQ:	1.4E-02	max
BTAG High HQ:	3.6E-03	max



## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Cadmium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.264946  
Maximum detected value (mg/kg, dry weight): 0.367347

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.28  
Maximum detected value (mg/kg, dry weight): 0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.2E-04 mean  
Daily exposure (mg/kg-day) 1.3E-03 max

### Hazard Quotients

BTAG Low HQ: 1.1E-02 mean  
BTAG High HQ: 8.8E-05 mean

BTAG Low HQ: 1.6E-02 max  
BTAG High HQ: 1.2E-04 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Chromium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.861413  
Maximum detected value (mg/kg, dry weight): 2.44898

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 59  
Maximum detected value (mg/kg, dry weight): 59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.8E-02 mean  
Daily exposure (mg/kg-day) 2.0E-02 max

### Hazard Quotients

NOAEL HQ: 2.0E-02 mean  
LOAEL HQ: 4.1E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 2.3E-02 max  
LOAEL HQ: 4.5E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Copper

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	12.90761
Maximum detected value (mg/kg, dry weight):	16.77419

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	180
Maximum detected value (mg/kg, dry weight):	180

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.7E-02	mean
Daily exposure (mg/kg-day)	9.0E-02	max

### Hazard Quotients

BTAG Low HQ:	3.4E-02	mean
BTAG High HQ:	1.5E-03	mean

BTAG Low HQ:	3.9E-02	max
BTAG High HQ:	1.7E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Lead

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.663043
Maximum detected value (mg/kg, dry weight):	3.419355

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	73
Maximum detected value (mg/kg, dry weight):	73

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.3E-02	mean
Daily exposure (mg/kg-day)	2.5E-02	max

### Hazard Quotients

BTAG Low HQ:	1.6E+00	mean
BTAG High HQ:	2.6E-03	mean
BTAG Low HQ:	1.8E+00	max
BTAG High HQ:	2.9E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total Mercury  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.10462
Maximum detected value (mg/kg, dry weight):	0.116129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.85
Maximum detected value (mg/kg, dry weight):	0.85

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.1E-04	mean
Daily exposure (mg/kg-day)	5.5E-04	max

### Hazard Quotients

BTAG HQ:	1.3E-02	mean
BTAG HQ:	2.8E-03	mean
BTAG Low HQ:	1.4E-02	max
BTAG High HQ:	3.0E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Nickel

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.296196
Maximum detected value (mg/kg, dry weight):	2.516129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E-02	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	7.6E-03	mean
BTAG High HQ:	1.9E-04	mean
BTAG Low HQ:	8.1E-03	max
BTAG High HQ:	2.0E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Selenium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.902174  
Maximum detected value (mg/kg, dry weight): 2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1  
Maximum detected value (mg/kg, dry weight): 1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.4E-03 mean  
Daily exposure (mg/kg-day) 8.6E-03 max

### Hazard Quotients

BTAG Low HQ: 2.8E-02 mean  
BTAG High HQ: 6.9E-03 mean

BTAG Low HQ: 3.7E-02 max  
BTAG High HQ: 9.3E-03 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Zinc

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	112.7717
Maximum detected value (mg/kg, dry weight):	129.0323

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	230
Maximum detected value (mg/kg, dry weight):	230

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.1E-01	mean
Daily exposure (mg/kg-day)	4.7E-01	max

### Hazard Quotients

BTAG Low HQ:	2.4E-02	mean
BTAG High HQ:	2.4E-03	mean
BTAG Low HQ:	2.7E-02	max
BTAG High HQ:	2.7E-03	max



## Tier I - Summary of Hazard Quotients

**Receptor: Brown Pelican**  
**Location: NA11**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	9.5E-02	--	--	--	3.0E-01	--	--	--	--	--	--
LOAEL HQ:	9.5E-03	--	--	--	5.9E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.6E-01	1.0E-02	3.0E-01	#VALUE!	5.9E-01	<b>2.5E+01</b>	2.6E-01	1.5E-01	6.8E-01	5.5E-01
BTAG High HQ:	#VALUE!	1.1E-02	1.7E-04	7.5E-02	#VALUE!	2.6E-02	3.9E-02	5.5E-02	3.8E-03	1.7E-01	5.5E-02
<b>MAXIMUM</b>											
NOAEL HQ:	1.1E-01	--	--	--	3.5E-01	--	--	--	--	--	--
LOAEL HQ:	1.1E-02	--	--	--	7.0E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.7E-01	1.4E-02	3.5E-01	#VALUE!	7.3E-01	<b>2.9E+01</b>	2.8E-01	1.7E-01	9.1E-01	6.3E-01
BTAG High HQ:	#VALUE!	1.2E-02	2.2E-04	8.8E-02	#VALUE!	3.2E-02	4.6E-02	6.0E-02	4.1E-03	2.3E-01	6.3E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Benzo[a]pyrene  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.15625
Maximum detected value (mg/kg, dry weight):	0.174194

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.4
Maximum detected value (mg/kg, dry weight):	0.4

BAP

23	15.5	100	0.155	
26	14.8	100	0.148	
19	13.1	100	0.131	
27	15.5	100	0.155	
20	14.7	100	0.147	
<b>23</b>			<b>0.1472</b>	156.25

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

174.1935484

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-02	mean
Daily exposure (mg/kg-day)	1.5E-02	max

### Hazard Quotients

NOAEL HQ:	9.5E-02	mean
LOAEL HQ:	9.5E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	1.1E-01	max
LOAEL HQ:	1.1E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total PCB Congeners  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.172418  
 Maximum detected value (mg/kg, dry weight): 0.18129

### PCB Cong Total Solids

26.9	15.5	100	0.155
23.8	14.8	100	0.148
21.6	13.1	100	0.131
28.1	15.5	100	0.155
26.5	14.7	100	0.147
<b>25.38</b>			<b>0.1472 172.4185</b>

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.19  
 Maximum detected value (mg/kg, dry weight): 0.19

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.09  
 BTAG High (mg/kg-day): 1.27

181.2903

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.4E-02 mean  
 Daily exposure (mg/kg-day) 1.5E-02 max

### Hazard Quotients

BTAG Low HQ: 1.6E-01 mean  
 BTAG High HQ: 1.1E-02 mean

BTAG Low HQ: 1.7E-01 max  
 BTAG High HQ: 1.2E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Tributyltin

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.09375
Maximum detected value (mg/kg, dry weight):	0.122581

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.038
Maximum detected value (mg/kg, dry weight):	0.038

TBT	Total Solids		
15	15.5	100	0.155
11	14.8	100	0.148
12	13.1	100	0.131
19	15.5	100	0.155
12	14.7	100	0.147
<b>13.8</b>			<b>0.1472</b>
122.5806			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.6E-03	mean
Daily exposure (mg/kg-day)	1.0E-02	max

### Hazard Quotients

BTAG Low HQ:	1.0E-02	mean
BTAG High HQ:	1.7E-04	mean

BTAG Low HQ:	1.4E-02	max
BTAG High HQ:	2.2E-04	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Arsenic  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 20.24457  
 Maximum detected value (mg/kg, dry weight): 23.87097

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 9.3  
 Maximum detected value (mg/kg, dry weight): 9.3

	Arsenic	Total Solids		
	3.2	15.5	100	0.155
	2.6	14.8	100	0.148
	2.8	13.1	100	0.131
	3.7	15.5	100	0.155
	2.6	14.7	100	0.147
	<b>2.98</b>			<b>0.1472 20.24457</b>
	23.87097			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
 BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.7E+00 mean  
 Daily exposure (mg/kg-day) 1.9E+00 max

### Hazard Quotients

BTAG Low HQ: 3.0E-01 mean  
 BTAG High HQ: 7.5E-02 mean

BTAG Low HQ: 3.5E-01 max  
 BTAG High HQ: 8.8E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Cadmium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.264946  
 Maximum detected value (mg/kg, dry weight): 0.367347

	Cadmium	Total Solids		
	0.036	15.5	100	0.155
	0.028	14.8	100	0.148
	0.025	13.1	100	0.131
	0.052	15.5	100	0.155
	0.054	14.7	100	0.147
	<b>0.039</b>			<b>0.1472 0.264946</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.28  
 Maximum detected value (mg/kg, dry weight): 0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
 BTAG High (mg/kg-day): 10.4

0.367347

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.2E-02 mean  
 Daily exposure (mg/kg-day) 3.0E-02 max

### Hazard Quotients

BTAG Low HQ: 2.7E-01 mean  
 BTAG High HQ: 2.1E-03 mean

BTAG Low HQ: 3.8E-01 max  
 BTAG High HQ: 2.9E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Chromium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.861413
Maximum detected value (mg/kg, dry weight):	2.44898

### Chromium Total Solids

0.26	15.5	100	0.155
0.23	14.8	100	0.148
0.18	13.1	100	0.131
0.34	15.5	100	0.155
0.36	14.7	100	0.147
<b>0.274</b>			<b>0.1472 1.861413</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

2.44898

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.5E-01	mean
Daily exposure (mg/kg-day)	3.0E-01	max

### Hazard Quotients

NOAEL HQ:	3.0E-01	mean
LOAEL HQ:	5.9E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.5E-01	max
LOAEL HQ:	7.0E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Copper  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	12.90761
Maximum detected value (mg/kg, dry weight):	16.77419

Copper	Total Solids		
1.6	15.5	100	0.155
1.8	14.8	100	0.148
1.6	13.1	100	0.131
2.6	15.5	100	0.155
1.9	14.7	100	0.147
<b>1.9</b>			<b>0.1472 12.90761</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	180
Maximum detected value (mg/kg, dry weight):	180

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

16.77419

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.4E+00	mean
Daily exposure (mg/kg-day)	1.7E+00	max

### Hazard Quotients

BTAG Low HQ:	5.9E-01	mean
BTAG High HQ:	2.6E-02	mean

BTAG Low HQ:	7.3E-01	max
BTAG High HQ:	3.2E-02	max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Lead

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.663043
Maximum detected value (mg/kg, dry weight):	3.419355

Lead	Total Solids		
0.37	15.5	100	0.155
0.28	14.8	100	0.148
0.3	13.1	100	0.131
0.53	15.5	100	0.155
0.48	14.7	100	0.147
<b>0.392</b>			<b>0.1472 2.663043</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	73
Maximum detected value (mg/kg, dry weight):	73

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

3.419355

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.4E-01	mean
Daily exposure (mg/kg-day)	4.0E-01	max

### Hazard Quotients

BTAG Low HQ:	2.5E+01	mean
BTAG High HQ:	3.9E-02	mean

BTAG Low HQ:	2.9E+01	max
BTAG High HQ:	4.6E-02	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total Mercury  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845	
Food ingestion rate (kg/day dry wt):	0.23	
Sediment ingestion rate (kg/day dry wt):	0.005	
Area Use Factor (unitless):	1	0.004
Time Use Factor (unitless):	1	

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.10462
Maximum detected value (mg/kg, dry weight):	0.116129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.85
Maximum detected value (mg/kg, dry weight):	0.85

Mercury	Total Solids		
0.012	15.5	100	0.155
0.014	14.8	100	0.148
0.017	13.1	100	0.131
0.018	15.5	100	0.155
0.016	14.7	100	0.147
<b>0.0154</b>			<b>0.1472</b>
			<b>0.10462</b>
			0.116129

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E-02	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG HQ:	2.6E-01	mean
BTAG HQ:	5.5E-02	mean

BTAG Low HQ:	2.8E-01	max
BTAG High HQ:	6.0E-02	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Nickel

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.296196
Maximum detected value (mg/kg, dry weight):	2.516129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

Nickel	Total Solids			
0.39	15.5	100	0.155	
0.27	14.8	100	0.148	
0.28	13.1	100	0.131	
0.39	15.5	100	0.155	
0.36	14.7	100	0.147	
<b>0.338</b>			<b>0.1472</b>	<b>2.296196</b>
2.516129				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.1E-01	mean
Daily exposure (mg/kg-day)	2.3E-01	max

### Hazard Quotients

BTAG Low HQ:	1.5E-01	mean
BTAG High HQ:	3.8E-03	mean

BTAG Low HQ:	1.7E-01	max
BTAG High HQ:	4.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Selenium

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.902174
Maximum detected value (mg/kg, dry weight):	2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

Selenium	Total Solids			
0.3	15.5	100	0.155	
0.2	14.8	100	0.148	
0.3	13.1	100	0.131	
0.4	15.5	100	0.155	
0.2	14.7	100	0.147	
<b>0.28</b>			<b>0.1472</b>	<b>1.902174</b>
2.580645				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.6E-01	mean
Daily exposure (mg/kg-day)	2.1E-01	max

### Hazard Quotients

BTAG Low HQ:	6.8E-01	mean
BTAG High HQ:	1.7E-01	mean

BTAG Low HQ:	9.1E-01	max
BTAG High HQ:	2.3E-01	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Zinc  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 112.7717  
 Maximum detected value (mg/kg, dry weight): 129.0323

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 230  
 Maximum detected value (mg/kg, dry weight): 230

	Zinc	Total Solids		
	15	15.5	100	0.155
	16	14.8	100	0.148
	14	13.1	100	0.131
	20	15.5	100	0.155
	18	14.7	100	0.147
	<b>16.6</b>			<b>0.1472 112.7717</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
 BTAG High (mg/kg-day): 172

129.0323

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.5E+00 mean  
 Daily exposure (mg/kg-day) 1.1E+01 max

### Hazard Quotients

BTAG Low HQ: 5.5E-01 mean  
 BTAG High HQ: 5.5E-02 mean

BTAG Low HQ: 6.3E-01 max  
 BTAG High HQ: 6.3E-02 max

## Tier I - Summary of Hazard Quotients

**Receptor: Western Grebe**  
**Location: NA11**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	7.5E-02	--	--	--	3.9E-01	--	--	--	--	--	--
LOAEL HQ:	7.5E-03	--	--	--	7.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.2E-01	7.5E-03	2.2E-01	#VALUE!	6.2E-01	<b>3.1E+01</b>	2.4E-01	1.4E-01	4.9E-01	4.2E-01
BTAG High HQ:	#VALUE!	8.3E-03	1.2E-04	5.4E-02	#VALUE!	2.7E-02	4.9E-02	5.1E-02	3.3E-03	1.2E-01	4.2E-02
<b>MAXIMUM</b>											
NOAEL HQ:	8.2E-02	--	--	--	4.3E-01	--	--	--	--	--	--
LOAEL HQ:	8.2E-03	--	--	--	8.5E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.2E-01	9.8E-03	2.5E-01	#VALUE!	7.2E-01	<b>3.4E+01</b>	2.5E-01	1.5E-01	6.6E-01	4.8E-01
BTAG High HQ:	#VALUE!	8.7E-03	1.6E-04	6.3E-02	#VALUE!	3.1E-02	5.4E-02	5.5E-02	3.6E-03	1.6E-01	4.8E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Benzol[a]pyrene  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.15625  
Maximum detected value (mg/kg, dry weight): 0.174194

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.4  
Maximum detected value (mg/kg, dry weight): 0.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.0E-02 mean  
Daily exposure (mg/kg-day) 1.1E-02 max

### Hazard Quotients

NOAEL HQ: 7.5E-02 mean  
LOAEL HQ: 7.5E-03 mean  
BTAG Low HQ: #VALUEI mean  
BTAG High HQ: #VALUEI mean

NOAEL HQ: 8.2E-02 max  
LOAEL HQ: 8.2E-03 max  
BTAG Low HQ: #VALUEI max  
BTAG High HQ: #VALUEI max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total PCB Congeners  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.172418
Maximum detected value (mg/kg, dry weight):	0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.19
Maximum detected value (mg/kg, dry weight):	0.19

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-02	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	1.2E-01	mean
BTAG High HQ:	8.3E-03	mean
BTAG Low HQ:	1.2E-01	max
BTAG High HQ:	8.7E-03	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Tributyltin

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.09375
Maximum detected value (mg/kg, dry weight):	0.122581

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.038
Maximum detected value (mg/kg, dry weight):	0.038

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.5E-03	mean
Daily exposure (mg/kg-day)	7.1E-03	max

### Hazard Quotients

BTAG Low HQ:	7.5E-03	mean
BTAG High HQ:	1.2E-04	mean
BTAG Low HQ:	9.8E-03	max
BTAG High HQ:	1.6E-04	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Arsenic

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	20.24457
Maximum detected value (mg/kg, dry weight):	23.87097

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	9.3
Maximum detected value (mg/kg, dry weight):	9.3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E+00	mean
Daily exposure (mg/kg-day)	1.4E+00	max

### Hazard Quotients

BTAG Low HQ:	2.2E-01	mean
BTAG High HQ:	5.4E-02	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	6.3E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Cadmium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.264946
Maximum detected value (mg/kg, dry weight):	0.367347

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.6E-02	mean
Daily exposure (mg/kg-day)	2.2E-02	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	1.6E-03	mean
BTAG Low HQ:	2.7E-01	max
BTAG High HQ:	2.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Chromium  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.861413
Maximum detected value (mg/kg, dry weight):	2.44898

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.3E-01	mean
Daily exposure (mg/kg-day)	3.7E-01	max

### Hazard Quotients

NOAEL HQ:	3.9E-01	mean
LOAEL HQ:	7.7E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.3E-01	max
LOAEL HQ:	8.5E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Copper

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	12.90761
Maximum detected value (mg/kg, dry weight):	16.77419

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	180
Maximum detected value (mg/kg, dry weight):	180

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.4E+00	mean
Daily exposure (mg/kg-day)	1.6E+00	max

### Hazard Quotients

BTAG Low HQ:	6.2E-01	mean
BTAG High HQ:	2.7E-02	mean
BTAG Low HQ:	7.2E-01	max
BTAG High HQ:	3.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Lead

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.663043
Maximum detected value (mg/kg, dry weight):	3.419355

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	73
Maximum detected value (mg/kg, dry weight):	73

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.3E-01	mean
Daily exposure (mg/kg-day)	4.7E-01	max

### Hazard Quotients

BTAG Low HQ:	3.1E+01	mean
BTAG High HQ:	4.9E-02	mean
BTAG Low HQ:	3.4E+01	max
BTAG High HQ:	5.4E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total Mercury  
**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.10462
Maximum detected value (mg/kg, dry weight):	0.116129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.85
Maximum detected value (mg/kg, dry weight):	0.85

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.2E-03	mean
Daily exposure (mg/kg-day)	9.9E-03	max

### Hazard Quotients

BTAG HQ:	2.4E-01	mean
BTAG HQ:	5.1E-02	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	5.5E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Nickel

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.296196
Maximum detected value (mg/kg, dry weight):	2.516129

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E-01	mean
Daily exposure (mg/kg-day)	2.0E-01	max

### Hazard Quotients

BTAG Low HQ:	1.4E-01	mean
BTAG High HQ:	3.3E-03	mean
BTAG Low HQ:	1.5E-01	max
BTAG High HQ:	3.6E-03	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Selenium

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.902174
Maximum detected value (mg/kg, dry weight):	2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-01	mean
Daily exposure (mg/kg-day)	1.5E-01	max

### Hazard Quotients

BTAG Low HQ:	4.9E-01	mean
BTAG High HQ:	1.2E-01	mean

BTAG Low HQ:	6.6E-01	max
BTAG High HQ:	1.6E-01	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Zinc

**Location:** NA11

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	112.7717
Maximum detected value (mg/kg, dry weight):	129.0323

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	230
Maximum detected value (mg/kg, dry weight):	230

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.3E+00	mean
Daily exposure (mg/kg-day)	8.2E+00	max

### Hazard Quotients

BTAG Low HQ:	4.2E-01	mean
BTAG High HQ:	4.2E-02	mean
BTAG Low HQ:	4.8E-01	max
BTAG High HQ:	4.8E-02	max

**[BLANK SHEET]**

## Tier I - Summary of Hazard Quotients

**Receptor:** Surf Scoter  
**Location:** NA12

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	8.6E-02	--	--	--	3.2E-01	--	--	--	--	--	--
LOAEL HQ:	8.6E-03	--	--	--	6.3E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	8.3E-02	8.3E-03	2.0E-01	#VALUE!	5.3E-01	<b>2.3E+01</b>	2.0E-01	1.3E-01	5.3E-01	4.1E-01
BTAG High HQ:	#VALUE!	5.9E-03	1.3E-04	4.9E-02	#VALUE!	2.3E-02	3.7E-02	4.4E-02	3.2E-03	1.3E-01	4.1E-02
<b>MAXIMUM</b>											
NOAEL HQ:	9.0E-02	--	--	--	3.5E-01	--	--	--	--	--	--
LOAEL HQ:	9.0E-03	--	--	--	6.9E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.0E-01	1.0E-02	2.1E-01	#VALUE!	6.2E-01	<b>2.4E+01</b>	2.6E-01	1.4E-01	7.1E-01	4.5E-01
BTAG High HQ:	#VALUE!	7.4E-03	1.6E-04	5.2E-02	#VALUE!	2.7E-02	3.9E-02	5.6E-02	3.4E-03	1.8E-01	4.5E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Benzol[a]pyrene

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.199158  
Maximum detected value (mg/kg, dry weight): 0.210884

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.26  
Maximum detected value (mg/kg, dry weight): 0.26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E-02 mean  
Daily exposure (mg/kg-day) 1.3E-02 max

### Hazard Quotients

NOAEL HQ: 8.6E-02 mean  
LOAEL HQ: 8.6E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 9.0E-02 max  
LOAEL HQ: 9.0E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total PCB Congeners  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.124965
Maximum detected value (mg/kg, dry weight):	0.159184

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.15
Maximum detected value (mg/kg, dry weight):	0.15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.5E-03	mean
Daily exposure (mg/kg-day)	9.4E-03	max

### Hazard Quotients

BTAG Low HQ:	8.3E-02	mean
BTAG High HQ:	5.9E-03	mean
BTAG Low HQ:	1.0E-01	max
BTAG High HQ:	7.4E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Tributyltin  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.103506
Maximum detected value (mg/kg, dry weight):	0.129252

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.08
Maximum detected value (mg/kg, dry weight):	0.08

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.0E-03	mean
Daily exposure (mg/kg-day)	7.5E-03	max

### Hazard Quotients

BTAG Low HQ:	8.3E-03	mean
BTAG High HQ:	1.3E-04	mean
BTAG Low HQ:	1.0E-02	max
BTAG High HQ:	1.6E-04	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Arsenic

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	18.93408
Maximum detected value (mg/kg, dry weight):	19.72789

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	9.5
Maximum detected value (mg/kg, dry weight):	9.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E+00	mean
Daily exposure (mg/kg-day)	1.1E+00	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	4.9E-02	mean
BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	5.2E-02	max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Cadmium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.210379
Maximum detected value (mg/kg, dry weight):	0.272727

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-02	mean
Daily exposure (mg/kg-day)	1.6E-02	max

### Hazard Quotients

BTAG Low HQ:	1.5E-01	mean
BTAG High HQ:	1.2E-03	mean
BTAG Low HQ:	2.0E-01	max
BTAG High HQ:	1.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Chromium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.725105
Maximum detected value (mg/kg, dry weight):	2.176871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	54
Maximum detected value (mg/kg, dry weight):	54

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.7E-01	mean
Daily exposure (mg/kg-day)	3.0E-01	max

### Hazard Quotients

NOAEL HQ:	3.2E-01	mean
LOAEL HQ:	6.3E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.5E-01	max
LOAEL HQ:	6.9E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Copper  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	13.04348
Maximum detected value (mg/kg, dry weight):	16.90141

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	150
Maximum detected value (mg/kg, dry weight):	150

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E+00	mean
Daily exposure (mg/kg-day)	1.4E+00	max

### Hazard Quotients

BTAG Low HQ:	5.3E-01	mean
BTAG High HQ:	2.3E-02	mean
BTAG Low HQ:	6.2E-01	max
BTAG High HQ:	2.7E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Lead

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.328191
Maximum detected value (mg/kg, dry weight):	2.676056

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.2E-01	mean
Daily exposure (mg/kg-day)	3.4E-01	max

### Hazard Quotients

BTAG Low HQ:	2.3E+01	mean
BTAG High HQ:	3.7E-02	mean

BTAG Low HQ:	2.4E+01	max
BTAG High HQ:	3.9E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total Mercury  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.106592
Maximum detected value (mg/kg, dry weight):	0.142857

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.62
Maximum detected value (mg/kg, dry weight):	0.62

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.0E-03	mean
Daily exposure (mg/kg-day)	1.0E-02	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	4.4E-02	mean
BTAG Low HQ:	2.6E-01	max
BTAG High HQ:	5.6E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Nickel

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.30014
Maximum detected value (mg/kg, dry weight):	2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.8E-01	mean
Daily exposure (mg/kg-day)	1.9E-01	max

### Hazard Quotients

BTAG Low HQ:	1.3E-01	mean
BTAG High HQ:	3.2E-03	mean

BTAG Low HQ:	1.4E-01	max
BTAG High HQ:	3.4E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Selenium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.103787
Maximum detected value (mg/kg, dry weight):	2.857143

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-01	mean
Daily exposure (mg/kg-day)	1.6E-01	max

### Hazard Quotients

BTAG Low HQ:	5.3E-01	mean
BTAG High HQ:	1.3E-01	mean
BTAG Low HQ:	7.1E-01	max
BTAG High HQ:	1.8E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Zinc  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	113.6045
Maximum detected value (mg/kg, dry weight):	126.7606

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	210
Maximum detected value (mg/kg, dry weight):	210

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.0E+00	mean
Daily exposure (mg/kg-day)	7.8E+00	max

### Hazard Quotients

BTAG Low HQ:	4.1E-01	mean
BTAG High HQ:	4.1E-02	mean
BTAG Low HQ:	4.5E-01	max
BTAG High HQ:	4.5E-02	max



## Tier I - Summary of Hazard Quotients

**Receptor:** Sea Lion  
**Location:** NA12

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	--	--	--	--	2.3E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.1E-03	--	--	--	--	--	--
BTAG Low HQ:	3.5E-03	7.9E-03	9.3E-03	<b>1.3E+00</b>	#VALUE!	1.5E-01	9.2E-02	1.0E-01	4.6E-01	9.4E-01	2.8E-01
BTAG High HQ:	1.4E-04	2.2E-03	1.6E-04	9.0E-02	#VALUE!	6.2E-04	3.8E-04	1.0E-02	1.9E-03	3.9E-02	6.4E-03
<b>MAXIMUM</b>											
NOAEL HQ:	--	--	--	--	2.6E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.2E-03	--	--	--	--	--	--
BTAG Low HQ:	3.7E-03	1.0E-02	1.2E-02	<b>1.4E+00</b>	#VALUE!	1.8E-01	9.9E-02	1.3E-01	4.9E-01	<b>1.3E+00</b>	3.1E-01
BTAG High HQ:	1.5E-04	2.8E-03	1.9E-04	9.4E-02	#VALUE!	7.5E-04	4.1E-04	1.3E-02	2.1E-03	5.3E-02	7.1E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Benzol[a]pyrene  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.199158  
Maximum detected value (mg/kg, dry weight): 0.210884

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.26  
Maximum detected value (mg/kg, dry weight): 0.26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.31  
BTAG High (mg/kg-day): 32.8

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.6E-03 mean  
Daily exposure (mg/kg-day) 4.8E-03 max

### Hazard Quotients

BTAG Low HQ: 3.5E-03 mean  
BTAG High HQ: 1.4E-04 mean

BTAG Low HQ: 3.7E-03 max  
BTAG High HQ: 1.5E-04 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total PCB Congeners  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.124965
Maximum detected value (mg/kg, dry weight):	0.159184

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.15
Maximum detected value (mg/kg, dry weight):	0.15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.36
BTAG High (mg/kg-day):	1.28

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.9E-03	mean
Daily exposure (mg/kg-day)	3.6E-03	max

### Hazard Quotients

BTAG Low HQ:	7.9E-03	mean
BTAG High HQ:	2.2E-03	mean
BTAG Low HQ:	1.0E-02	max
BTAG High HQ:	2.8E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Tributyltin  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.103506  
Maximum detected value (mg/kg, dry weight): 0.129252

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.08  
Maximum detected value (mg/kg, dry weight): 0.08

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.25  
BTAG High (mg/kg-day): 15

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.3E-03 mean  
Daily exposure (mg/kg-day) 2.9E-03 max

### Hazard Quotients

BTAG Low HQ: 9.3E-03 mean  
BTAG High HQ: 1.6E-04 mean

BTAG Low HQ: 1.2E-02 max  
BTAG High HQ: 1.9E-04 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Arsenic  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 18.93408  
Maximum detected value (mg/kg, dry weight): 19.72789

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 9.5  
Maximum detected value (mg/kg, dry weight): 9.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.32  
BTAG High (mg/kg-day): 4.7

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.2E-01 mean  
Daily exposure (mg/kg-day) 4.4E-01 max

### Hazard Quotients

BTAG Low HQ: 1.3E+00 mean  
BTAG High HQ: 9.0E-02 mean

BTAG Low HQ: 1.4E+00 max  
BTAG High HQ: 9.4E-02 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Cadmium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.210379
Maximum detected value (mg/kg, dry weight):	0.272727

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.06
BTAG High (mg/kg-day):	2.64

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.8E-03	mean
Daily exposure (mg/kg-day)	6.1E-03	max

### Hazard Quotients

BTAG Low HQ:	7.9E-02	mean
BTAG High HQ:	1.8E-03	mean
BTAG Low HQ:	1.0E-01	max
BTAG High HQ:	2.3E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Chromium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.725105
Maximum detected value (mg/kg, dry weight):	2.176871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	54
Maximum detected value (mg/kg, dry weight):	54

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	3.3
LOAEL (mg/kg-day):	69
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.5E-02	mean
Daily exposure (mg/kg-day)	8.5E-02	max

### Hazard Quotients

NOAEL HQ:	2.3E-02	mean
LOAEL HQ:	1.1E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	2.6E-02	max
LOAEL HQ:	1.2E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Copper  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	13.04348
Maximum detected value (mg/kg, dry weight):	16.90141

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	150
Maximum detected value (mg/kg, dry weight):	150

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.67
BTAG High (mg/kg-day):	632

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.9E-01	mean
Daily exposure (mg/kg-day)	4.7E-01	max

### Hazard Quotients

BTAG Low HQ:	1.5E-01	mean
BTAG High HQ:	6.2E-04	mean
BTAG Low HQ:	1.8E-01	max
BTAG High HQ:	7.5E-04	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Lead  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.328191
Maximum detected value (mg/kg, dry weight):	2.676056

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1
BTAG High (mg/kg-day):	241

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.2E-02	mean
Daily exposure (mg/kg-day)	9.9E-02	max

### Hazard Quotients

BTAG Low HQ:	9.2E-02	mean
BTAG High HQ:	3.8E-04	mean
BTAG Low HQ:	9.9E-02	max
BTAG High HQ:	4.1E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total Mercury  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.106592
Maximum detected value (mg/kg, dry weight):	0.142857

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.62
Maximum detected value (mg/kg, dry weight):	0.62

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.027
BTAG High (mg/kg-day):	0.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.8E-03	mean
Daily exposure (mg/kg-day)	3.6E-03	max

### Hazard Quotients

BTAG HQ:	1.0E-01	mean
BTAG HQ:	1.0E-02	mean
BTAG Low HQ:	1.3E-01	max
BTAG High HQ:	1.3E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Nickel  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.30014
Maximum detected value (mg/kg, dry weight):	2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.133
BTAG High (mg/kg-day):	31.6

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.1E-02	mean
Daily exposure (mg/kg-day)	6.6E-02	max

### Hazard Quotients

BTAG Low HQ:	4.6E-01	mean
BTAG High HQ:	1.9E-03	mean
BTAG Low HQ:	4.9E-01	max
BTAG High HQ:	2.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Selenium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.103787  
Maximum detected value (mg/kg, dry weight): 2.857143

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.1  
Maximum detected value (mg/kg, dry weight): 1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.05  
BTAG High (mg/kg-day): 1.21

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.7E-02 mean  
Daily exposure (mg/kg-day) 6.4E-02 max

### Hazard Quotients

BTAG Low HQ: 9.4E-01 mean  
BTAG High HQ: 3.9E-02 mean

BTAG Low HQ: 1.3E+00 max  
BTAG High HQ: 5.3E-02 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Zinc  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	113.6045
Maximum detected value (mg/kg, dry weight):	126.7606

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	210
Maximum detected value (mg/kg, dry weight):	210

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	9.6
BTAG High (mg/kg-day):	411

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E+00	mean
Daily exposure (mg/kg-day)	2.9E+00	max

### Hazard Quotients

BTAG Low HQ:	2.8E-01	mean
BTAG High HQ:	6.4E-03	mean
BTAG Low HQ:	3.1E-01	max
BTAG High HQ:	7.1E-03	max

## Tier I - Summary of Hazard Quotients

Receptor: CA Least Tern

Location: NA12

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	1.8E-01	--	--	--	4.4E-01	--	--	--	--	--	--
LOAEL HQ:	#VALUE!	--	--	--	8.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.7E-01	1.8E-02	4.3E-01	#VALUE!	8.9E-01	<b>3.3E+01</b>	3.8E-01	2.4E-01	<b>1.1E+00</b>	8.4E-01
BTAG High HQ:	#DIV/0!	1.2E-02	2.8E-04	1.1E-01	#VALUE!	3.9E-02	5.3E-02	8.3E-02	5.8E-03	2.8E-01	8.4E-02
<b>MAXIMUM</b>											
NOAEL HQ:	1.9E-01	--	--	--	5.0E-01	--	--	--	--	--	--
LOAEL HQ:	#VALUE!	--	--	--	1.0E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.2E-01	2.2E-02	4.4E-01	#VALUE!	<b>1.1E+00</b>	<b>3.6E+01</b>	5.0E-01	2.6E-01	<b>1.5E+00</b>	9.4E-01
BTAG High HQ:	#DIV/0!	1.6E-02	3.5E-04	1.1E-01	#VALUE!	4.8E-02	5.8E-02	1.1E-01	6.3E-03	3.8E-01	9.4E-02

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Benzo[a]pyrene  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.199158
Maximum detected value (mg/kg, dry weight):	0.210884

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.26
Maximum detected value (mg/kg, dry weight):	0.26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	Not Available
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.5E-02	mean
Daily exposure (mg/kg-day)	2.7E-02	max

### Hazard Quotients

NOAEL HQ:	1.8E-01	mean
LOAEL HQ:	#VALUE!	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#DIV/0!	mean

NOAEL HQ:	1.9E-01	max
LOAEL HQ:	#VALUE!	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#DIV/0!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total PCB Congeners  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.124965
Maximum detected value (mg/kg, dry weight):	0.159184

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.15
Maximum detected value (mg/kg, dry weight):	0.15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.6E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	1.7E-01	mean
BTAG High HQ:	1.2E-02	mean
BTAG Low HQ:	2.2E-01	max
BTAG High HQ:	1.6E-02	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Tributyltin  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.103506  
Maximum detected value (mg/kg, dry weight): 0.129252

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.08  
Maximum detected value (mg/kg, dry weight): 0.08

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.3E-02 mean  
Daily exposure (mg/kg-day) 1.6E-02 max

### Hazard Quotients

BTAG Low HQ: 1.8E-02 mean  
BTAG High HQ: 2.8E-04 mean

BTAG Low HQ: 2.2E-02 max  
BTAG High HQ: 3.5E-04 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Arsenic  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	18.93408
Maximum detected value (mg/kg, dry weight):	19.72789

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	9.5
Maximum detected value (mg/kg, dry weight):	9.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.3E+00	mean
Daily exposure (mg/kg-day)	2.4E+00	max

### Hazard Quotients

BTAG Low HQ:	4.3E-01	mean
BTAG High HQ:	1.1E-01	mean
BTAG Low HQ:	4.4E-01	max
BTAG High HQ:	1.1E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Cadmium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.210379
Maximum detected value (mg/kg, dry weight):	0.272727

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E-02	mean
Daily exposure (mg/kg-day)	3.4E-02	max

### Hazard Quotients

BTAG Low HQ:	3.3E-01	mean
BTAG High HQ:	2.5E-03	mean
BTAG Low HQ:	4.2E-01	max
BTAG High HQ:	3.3E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Chromium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.725105
Maximum detected value (mg/kg, dry weight):	2.176871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	54
Maximum detected value (mg/kg, dry weight):	54

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.8E-01	mean
Daily exposure (mg/kg-day)	4.3E-01	max

### Hazard Quotients

NOAEL HQ:	4.4E-01	mean
LOAEL HQ:	8.7E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.0E-01	max
LOAEL HQ:	1.0E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Copper  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	13.04348
Maximum detected value (mg/kg, dry weight):	16.90141

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	150
Maximum detected value (mg/kg, dry weight):	150

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.1E+00	mean
Daily exposure (mg/kg-day)	2.5E+00	max

### Hazard Quotients

BTAG Low HQ:	8.9E-01	mean
BTAG High HQ:	3.9E-02	mean
BTAG Low HQ:	1.1E+00	max
BTAG High HQ:	4.8E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Lead

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.328191
Maximum detected value (mg/kg, dry weight):	2.676056

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.6E-01	mean
Daily exposure (mg/kg-day)	5.1E-01	max

### Hazard Quotients

BTAG Low HQ:	3.3E+01	mean
BTAG High HQ:	5.3E-02	mean

BTAG Low HQ:	3.6E+01	max
BTAG High HQ:	5.8E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total Mercury  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.106592
Maximum detected value (mg/kg, dry weight):	0.142857

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.62
Maximum detected value (mg/kg, dry weight):	0.62

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-02	mean
Daily exposure (mg/kg-day)	1.9E-02	max

### Hazard Quotients

BTAG HQ:	3.8E-01	mean
BTAG HQ:	8.3E-02	mean
BTAG Low HQ:	5.0E-01	max
BTAG High HQ:	1.1E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Nickel  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.30014
Maximum detected value (mg/kg, dry weight):	2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.3E-01	mean
Daily exposure (mg/kg-day)	3.5E-01	max

### Hazard Quotients

BTAG Low HQ:	2.4E-01	mean
BTAG High HQ:	5.8E-03	mean
BTAG Low HQ:	2.6E-01	max
BTAG High HQ:	6.3E-03	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Selenium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.103787
Maximum detected value (mg/kg, dry weight):	2.857143

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E-01	mean
Daily exposure (mg/kg-day)	3.5E-01	max

### Hazard Quotients

BTAG Low HQ:	1.1E+00	mean
BTAG High HQ:	2.8E-01	mean
BTAG Low HQ:	1.5E+00	max
BTAG High HQ:	3.8E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Zinc

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 113.6045  
Maximum detected value (mg/kg, dry weight): 126.7606

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 210  
Maximum detected value (mg/kg, dry weight): 210

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.5E+01 mean  
Daily exposure (mg/kg-day) 1.6E+01 max

### Hazard Quotients

BTAG Low HQ: 8.4E-01 mean  
BTAG High HQ: 8.4E-02 mean

BTAG Low HQ: 9.4E-01 max  
BTAG High HQ: 9.4E-02 max

## Tier I - Summary of Hazard Quotients

**Receptor: Green Turtle**  
**Location: NA12**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	5.0E-03	--	--	--	1.9E-02	--	--	--	--	--	--
LOAEL HQ:	5.0E-04	--	--	--	3.8E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	4.9E-03	4.8E-04	1.2E-02	#VALUE!	3.1E-02	<b>1.4E+00</b>	1.2E-02	7.6E-03	3.1E-02	2.4E-02
BTAG High HQ:	#VALUE!	3.4E-04	7.7E-06	2.9E-03	#VALUE!	1.4E-03	2.2E-03	2.6E-03	1.9E-04	7.6E-03	2.4E-03
<b>MAXIMUM</b>											
NOAEL HQ:	5.3E-03	--	--	--	2.1E-02	--	--	--	--	--	--
LOAEL HQ:	5.3E-04	--	--	--	4.1E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	6.1E-03	6.0E-04	1.2E-02	#VALUE!	3.7E-02	<b>1.4E+00</b>	1.5E-02	8.1E-03	4.1E-02	2.6E-02
BTAG High HQ:	#VALUE!	4.3E-04	9.5E-06	3.0E-03	#VALUE!	1.6E-03	2.3E-03	3.3E-03	2.0E-04	1.0E-02	2.6E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Benzol[a]pyrene  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.199158  
Maximum detected value (mg/kg, dry weight): 0.210884

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.26  
Maximum detected value (mg/kg, dry weight): 0.26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.0E-04 mean  
Daily exposure (mg/kg-day) 7.4E-04 max

### Hazard Quotients

NOAEL HQ: 5.0E-03 mean  
LOAEL HQ: 5.0E-04 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 5.3E-03 max  
LOAEL HQ: 5.3E-04 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total PCB Congeners  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.124965
Maximum detected value (mg/kg, dry weight):	0.159184

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.15
Maximum detected value (mg/kg, dry weight):	0.15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.4E-04	mean
Daily exposure (mg/kg-day)	5.5E-04	max

### Hazard Quotients

BTAG Low HQ:	4.9E-03	mean
BTAG High HQ:	3.4E-04	mean
BTAG Low HQ:	6.1E-03	max
BTAG High HQ:	4.3E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Tributyltin  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.103506
Maximum detected value (mg/kg, dry weight):	0.129252

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.08
Maximum detected value (mg/kg, dry weight):	0.08

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.5E-04	mean
Daily exposure (mg/kg-day)	4.4E-04	max

### Hazard Quotients

BTAG Low HQ:	4.8E-04	mean
BTAG High HQ:	7.7E-06	mean
BTAG Low HQ:	6.0E-04	max
BTAG High HQ:	9.5E-06	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Arsenic

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	18.93408
Maximum detected value (mg/kg, dry weight):	19.72789

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	9.5
Maximum detected value (mg/kg, dry weight):	9.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.4E-02	mean
Daily exposure (mg/kg-day)	6.6E-02	max

### Hazard Quotients

BTAG Low HQ:	1.2E-02	mean
BTAG High HQ:	2.9E-03	mean

BTAG Low HQ:	1.2E-02	max
BTAG High HQ:	3.0E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Cadmium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.210379  
Maximum detected value (mg/kg, dry weight): 0.272727

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.18  
Maximum detected value (mg/kg, dry weight): 0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.2E-04 mean  
Daily exposure (mg/kg-day) 9.3E-04 max

### Hazard Quotients

BTAG Low HQ: 9.0E-03 mean  
BTAG High HQ: 6.9E-05 mean

BTAG Low HQ: 1.2E-02 max  
BTAG High HQ: 8.9E-05 max



## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Chromium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.725105  
Maximum detected value (mg/kg, dry weight): 2.176871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 54  
Maximum detected value (mg/kg, dry weight): 54

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.6E-02 mean  
Daily exposure (mg/kg-day) 1.8E-02 max

### Hazard Quotients

NOAEL HQ: 1.9E-02 mean  
LOAEL HQ: 3.8E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 2.1E-02 max  
LOAEL HQ: 4.1E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Copper

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	13.04348
Maximum detected value (mg/kg, dry weight):	16.90141

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	150
Maximum detected value (mg/kg, dry weight):	150

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.2E-02	mean
Daily exposure (mg/kg-day)	8.5E-02	max

### Hazard Quotients

BTAG Low HQ:	3.1E-02	mean
BTAG High HQ:	1.4E-03	mean
BTAG Low HQ:	3.7E-02	max
BTAG High HQ:	1.6E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Lead

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.328191
Maximum detected value (mg/kg, dry weight):	2.676056

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	1.4E+00	mean
BTAG High HQ:	2.2E-03	mean
BTAG Low HQ:	1.4E+00	max
BTAG High HQ:	2.3E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total Mercury  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.106592
Maximum detected value (mg/kg, dry weight):	0.142857

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.62
Maximum detected value (mg/kg, dry weight):	0.62

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.7E-04	mean
Daily exposure (mg/kg-day)	5.9E-04	max

### Hazard Quotients

BTAG Low HQ:	1.2E-02	mean
BTAG High HQ:	2.6E-03	mean
BTAG Low HQ:	1.5E-02	max
BTAG High HQ:	3.3E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Nickel

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.30014
Maximum detected value (mg/kg, dry weight):	2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E-02	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	7.6E-03	mean
BTAG High HQ:	1.9E-04	mean
BTAG Low HQ:	8.1E-03	max
BTAG High HQ:	2.0E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Selenium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.103787
Maximum detected value (mg/kg, dry weight):	2.857143

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.1E-03	mean
Daily exposure (mg/kg-day)	9.5E-03	max

### Hazard Quotients

BTAG Low HQ:	3.1E-02	mean
BTAG High HQ:	7.6E-03	mean
BTAG Low HQ:	4.1E-02	max
BTAG High HQ:	1.0E-02	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Zinc  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	113.6045
Maximum detected value (mg/kg, dry weight):	126.7606

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	210
Maximum detected value (mg/kg, dry weight):	210

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.1E-01	mean
Daily exposure (mg/kg-day)	4.5E-01	max

### Hazard Quotients

BTAG Low HQ:	2.4E-02	mean
BTAG High HQ:	2.4E-03	mean
BTAG Low HQ:	2.6E-02	max
BTAG High HQ:	2.6E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor: Brown Pelican**  
**Location: NA12**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	1.2E-01	--	--	--	2.7E-01	--	--	--	--	--	--
LOAEL HQ:	1.2E-02	--	--	--	5.5E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.2E-01	1.2E-02	2.8E-01	#VALUE!	5.7E-01	<b>2.1E+01</b>	2.5E-01	1.5E-01	7.5E-01	5.6E-01
BTAG High HQ:	#VALUE!	8.2E-03	1.9E-04	7.0E-02	#VALUE!	2.5E-02	3.3E-02	5.4E-02	3.8E-03	1.8E-01	5.6E-02
<b>MAXIMUM</b>											
NOAEL HQ:	1.3E-01	--	--	--	3.1E-01	--	--	--	--	--	--
LOAEL HQ:	1.3E-02	--	--	--	6.3E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.5E-01	1.5E-02	2.9E-01	#VALUE!	7.1E-01	<b>2.3E+01</b>	3.2E-01	1.7E-01	<b>1.0E+00</b>	6.2E-01
BTAG High HQ:	#VALUE!	1.0E-02	2.3E-04	7.3E-02	#VALUE!	3.1E-02	3.7E-02	7.0E-02	4.1E-03	2.5E-01	6.2E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.





## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total PCB Congeners  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.124965  
 Maximum detected value (mg/kg, dry weight): 0.159184

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.15  
 Maximum detected value (mg/kg, dry weight): 0.15

PCB Cong	Total Solids			
16.1	14	100	0.14	
15.2	13.2	100	0.132	
17.3	15.2	100	0.152	
23.4	14.7	100	0.147	
17.1	14.2	100	0.142	
<b>17.82</b>			<b>0.1426</b>	<b>124.9649</b>
				159.1837

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.09  
 BTAG High (mg/kg-day): 1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.0E-02 mean  
 Daily exposure (mg/kg-day) 1.3E-02 max

### Hazard Quotients

BTAG Low HQ: 1.2E-01 mean  
 BTAG High HQ: 8.2E-03 mean

BTAG Low HQ: 1.5E-01 max  
 BTAG High HQ: 1.0E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Tributyltin  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.103506  
 Maximum detected value (mg/kg, dry weight): 0.129252

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.08  
 Maximum detected value (mg/kg, dry weight): 0.08

TBT	Total Solids			
18	14	100	0.14	
15	13.2	100	0.132	
13	15.2	100	0.152	
19	14.7	100	0.147	
8.8	14.2	100	0.142	
<b>14.76</b>			<b>0.1426</b>	<b>103.5063</b>
129.2517				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
 BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 8.5E-03 mean  
 Daily exposure (mg/kg-day) 1.1E-02 max

### Hazard Quotients

BTAG Low HQ: 1.2E-02 mean  
 BTAG High HQ: 1.9E-04 mean

BTAG Low HQ: 1.5E-02 max  
 BTAG High HQ: 2.3E-04 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Arsenic  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 18.93408  
 Maximum detected value (mg/kg, dry weight): 19.72789

Arsenic	Total Solids		
2.8	14	100	0.14
2.6	13.2	100	0.132
2.6	15.2	100	0.152
2.9	14.7	100	0.147
2.6	14.2	100	0.142
<b>2.7</b>			<b>0.1426 18.93408</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 9.5  
 Maximum detected value (mg/kg, dry weight): 9.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
 BTAG High (mg/kg-day): 22

19.72789

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.5E+00 mean  
 Daily exposure (mg/kg-day) 1.6E+00 max

### Hazard Quotients

BTAG Low HQ: 2.8E-01 mean  
 BTAG High HQ: 7.0E-02 mean

BTAG Low HQ: 2.9E-01 max  
 BTAG High HQ: 7.3E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Cadmium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.210379  
 Maximum detected value (mg/kg, dry weight): 0.272727

	Cadmium	Total Solids			
	0.02	14	100	0.14	
	0.036	13.2	100	0.132	
	0.031	15.2	100	0.152	
	0.035	14.7	100	0.147	
	0.028	14.2	100	0.142	
	<b>0.03</b>				<b>0.1426 0.210379</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.18  
 Maximum detected value (mg/kg, dry weight): 0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
 BTAG High (mg/kg-day): 10.4

0.272727

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.7E-02 mean  
 Daily exposure (mg/kg-day) 2.2E-02 max

### Hazard Quotients

BTAG Low HQ: 2.2E-01 mean  
 BTAG High HQ: 1.7E-03 mean

BTAG Low HQ: 2.8E-01 max  
 BTAG High HQ: 2.2E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Chromium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.725105  
 Maximum detected value (mg/kg, dry weight): 2.176871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 54  
 Maximum detected value (mg/kg, dry weight): 54

Chromium		Total Solids			
0.2	14	100	0.14		
0.26	13.2	100	0.132		
0.26	15.2	100	0.152		
0.32	14.7	100	0.147		
0.19	14.2	100	0.142		
<b>0.246</b>			<b>0.1426</b>	<b>1.725105</b>	
2.176871					

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
 LOAEL (mg/kg-day): 4.3  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.3E-01 mean  
 Daily exposure (mg/kg-day) 2.7E-01 max

### Hazard Quotients

NOAEL HQ: 2.7E-01 mean  
 LOAEL HQ: 5.5E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 3.1E-01 max  
 LOAEL HQ: 6.3E-02 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Copper  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 13.04348  
 Maximum detected value (mg/kg, dry weight): 16.90141

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 150  
 Maximum detected value (mg/kg, dry weight): 150

Copper	Total Solids			
1.7	14	100	0.14	
2	13.2	100	0.132	
1.5	15.2	100	0.152	
1.7	14.7	100	0.147	
2.4	14.2	100	0.142	
<b>1.86</b>			<b>0.1426</b>	<b>13.04348</b>
16.90141				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
 BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.3E+00 mean  
 Daily exposure (mg/kg-day) 1.6E+00 max

### Hazard Quotients

BTAG Low HQ: 5.7E-01 mean  
 BTAG High HQ: 2.5E-02 mean

BTAG Low HQ: 7.1E-01 max  
 BTAG High HQ: 3.1E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Lead

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.328191
Maximum detected value (mg/kg, dry weight):	2.676056

Lead	Total Solids			
0.3	14	100	0.14	
0.31	13.2	100	0.132	
0.3	15.2	100	0.152	
0.37	14.7	100	0.147	
0.38	14.2	100	0.142	
<b>0.332</b>				<b>0.1426 2.328191</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

2.676056

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.9E-01	mean
Daily exposure (mg/kg-day)	3.2E-01	max

### Hazard Quotients

BTAG Low HQ:	2.1E+01	mean
BTAG High HQ:	3.3E-02	mean

BTAG Low HQ:	2.3E+01	max
BTAG High HQ:	3.7E-02	max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total Mercury  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.106592  
 Maximum detected value (mg/kg, dry weight): 0.142857

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.62  
 Maximum detected value (mg/kg, dry weight): 0.62

Mercury	Total Solids			
0.02	14	100		0.14
0.015	13.2	100		0.132
0.013	15.2	100		0.152
0.014	14.7	100		0.147
0.014	14.2	100		0.142
<b>0.0152</b>				<b>0.1426 0.106592</b>
				0.142857

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
 BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.7E-03 mean  
 Daily exposure (mg/kg-day) 1.3E-02 max

### Hazard Quotients

BTAG HQ: 2.5E-01 mean  
 BTAG HQ: 5.4E-02 mean

BTAG Low HQ: 3.2E-01 max  
 BTAG High HQ: 7.0E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Nickel

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.30014
Maximum detected value (mg/kg, dry weight):	2.517007

Nickel	Total Solids			
0.32	14	100	0.14	
0.36	13.2	100	0.132	
0.3	15.2	100	0.152	
0.37	14.7	100	0.147	
0.29	14.2	100	0.142	
<b>0.328</b>			<b>0.1426</b>	<b>2.30014</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

2.517007

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.1E-01	mean
Daily exposure (mg/kg-day)	2.3E-01	max

### Hazard Quotients

BTAG Low HQ:	1.5E-01	mean
BTAG High HQ:	3.8E-03	mean

BTAG Low HQ:	1.7E-01	max
BTAG High HQ:	4.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Selenium

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.103787
Maximum detected value (mg/kg, dry weight):	2.857143

Selenium	Total Solids		
0.4	14	100	0.14
0.3	13.2	100	0.132
0.2	15.2	100	0.152
0.4	14.7	100	0.147
0.2	14.2	100	0.142
<b>0.3</b>			<b>0.1426</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

2.857143

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E-01	mean
Daily exposure (mg/kg-day)	2.3E-01	max

### Hazard Quotients

BTAG Low HQ:	7.5E-01	mean
BTAG High HQ:	1.8E-01	mean

BTAG Low HQ:	1.0E+00	max
BTAG High HQ:	2.5E-01	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Zinc  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 113.6045  
 Maximum detected value (mg/kg, dry weight): 126.7606

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 210  
 Maximum detected value (mg/kg, dry weight): 210

Zinc	Total Solids			
12	14	100	0.14	
17	13.2	100	0.132	
17	15.2	100	0.152	
17	14.7	100	0.147	
18	14.2	100	0.142	
<b>16.2</b>			<b>0.1426</b>	<b>113.6045</b>
				126.7606

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
 BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.6E+00 mean  
 Daily exposure (mg/kg-day) 1.1E+01 max

### Hazard Quotients

BTAG Low HQ: 5.6E-01 mean  
 BTAG High HQ: 5.6E-02 mean

BTAG Low HQ: 6.2E-01 max  
 BTAG High HQ: 6.2E-02 max

## Tier I - Summary of Hazard Quotients

**Receptor: Western Grebe**  
**Location: NA12**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	8.8E-02	--	--	--	3.6E-01	--	--	--	--	--	--
LOAEL HQ:	8.8E-03	--	--	--	7.1E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	8.5E-02	8.5E-03	2.0E-01	#VALUE!	5.7E-01	<b>2.6E+01</b>	2.2E-01	1.4E-01	5.4E-01	4.2E-01
BTAG High HQ:	#VALUE!	6.1E-03	1.4E-04	5.1E-02	#VALUE!	2.5E-02	4.1E-02	4.7E-02	3.3E-03	1.3E-01	4.2E-02
<b>MAXIMUM</b>											
NOAEL HQ:	9.3E-02	--	--	--	3.9E-01	--	--	--	--	--	--
LOAEL HQ:	9.3E-03	--	--	--	7.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.1E-01	1.1E-02	2.1E-01	#VALUE!	6.7E-01	<b>2.7E+01</b>	2.7E-01	1.5E-01	7.3E-01	4.7E-01
BTAG High HQ:	#VALUE!	7.6E-03	1.7E-04	5.3E-02	#VALUE!	2.9E-02	4.3E-02	5.8E-02	3.6E-03	1.8E-01	4.7E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Benzol[a]pyrene  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.199158  
Maximum detected value (mg/kg, dry weight): 0.210884

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.26  
Maximum detected value (mg/kg, dry weight): 0.26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E-02 mean  
Daily exposure (mg/kg-day) 1.3E-02 max

### Hazard Quotients

NOAEL HQ: 8.8E-02 mean  
LOAEL HQ: 8.8E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 9.3E-02 max  
LOAEL HQ: 9.3E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total PCB Congeners  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.124965  
Maximum detected value (mg/kg, dry weight): 0.159184

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.15  
Maximum detected value (mg/kg, dry weight): 0.15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.09  
BTAG High (mg/kg-day): 1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.7E-03 mean  
Daily exposure (mg/kg-day) 9.6E-03 max

### Hazard Quotients

BTAG Low HQ: 8.5E-02 mean  
BTAG High HQ: 6.1E-03 mean

BTAG Low HQ: 1.1E-01 max  
BTAG High HQ: 7.6E-03 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Tributyltin

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.103506
Maximum detected value (mg/kg, dry weight):	0.129252

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.08
Maximum detected value (mg/kg, dry weight):	0.08

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.2E-03	mean
Daily exposure (mg/kg-day)	7.7E-03	max

### Hazard Quotients

BTAG Low HQ:	8.5E-03	mean
BTAG High HQ:	1.4E-04	mean
BTAG Low HQ:	1.1E-02	max
BTAG High HQ:	1.7E-04	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Arsenic

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	18.93408
Maximum detected value (mg/kg, dry weight):	19.72789

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	9.5
Maximum detected value (mg/kg, dry weight):	9.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E+00	mean
Daily exposure (mg/kg-day)	1.2E+00	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	5.1E-02	mean
BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	5.3E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Cadmium

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.210379
Maximum detected value (mg/kg, dry weight):	0.272727

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-02	mean
Daily exposure (mg/kg-day)	1.6E-02	max

### Hazard Quotients

BTAG Low HQ:	1.6E-01	mean
BTAG High HQ:	1.2E-03	mean
BTAG Low HQ:	2.0E-01	max
BTAG High HQ:	1.6E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Chromium  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.725105  
Maximum detected value (mg/kg, dry weight): 2.176871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 54  
Maximum detected value (mg/kg, dry weight): 54

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.1E-01 mean  
Daily exposure (mg/kg-day) 3.3E-01 max

### Hazard Quotients

NOAEL HQ: 3.6E-01 mean  
LOAEL HQ: 7.1E-02 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 3.9E-01 max  
LOAEL HQ: 7.7E-02 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Copper

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	13.04348
Maximum detected value (mg/kg, dry weight):	16.90141

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	150
Maximum detected value (mg/kg, dry weight):	150

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E+00	mean
Daily exposure (mg/kg-day)	1.5E+00	max

### Hazard Quotients

BTAG Low HQ:	5.7E-01	mean
BTAG High HQ:	2.5E-02	mean

BTAG Low HQ:	6.7E-01	max
BTAG High HQ:	2.9E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Lead

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.328191
Maximum detected value (mg/kg, dry weight):	2.676056

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	59
Maximum detected value (mg/kg, dry weight):	59

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.6E-01	mean
Daily exposure (mg/kg-day)	3.8E-01	max

### Hazard Quotients

BTAG Low HQ:	2.6E+01	mean
BTAG High HQ:	4.1E-02	mean

BTAG Low HQ:	2.7E+01	max
BTAG High HQ:	4.3E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total Mercury  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.106592
Maximum detected value (mg/kg, dry weight):	0.142857

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.62
Maximum detected value (mg/kg, dry weight):	0.62

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.4E-03	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	2.2E-01	mean
BTAG High HQ:	4.7E-02	mean
BTAG Low HQ:	2.7E-01	max
BTAG High HQ:	5.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Nickel  
**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.30014  
Maximum detected value (mg/kg, dry weight): 2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 15  
Maximum detected value (mg/kg, dry weight): 15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.9E-01 mean  
Daily exposure (mg/kg-day) 2.0E-01 max

### Hazard Quotients

BTAG Low HQ: 1.4E-01 mean  
BTAG High HQ: 3.3E-03 mean

BTAG Low HQ: 1.5E-01 max  
BTAG High HQ: 3.6E-03 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Selenium

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.103787  
Maximum detected value (mg/kg, dry weight): 2.857143

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.1  
Maximum detected value (mg/kg, dry weight): 1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E-01 mean  
Daily exposure (mg/kg-day) 1.7E-01 max

### Hazard Quotients

BTAG Low HQ: 5.4E-01 mean  
BTAG High HQ: 1.3E-01 mean

BTAG Low HQ: 7.3E-01 max  
BTAG High HQ: 1.8E-01 max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Zinc

**Location:** NA12

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	113.6045
Maximum detected value (mg/kg, dry weight):	126.7606

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	210
Maximum detected value (mg/kg, dry weight):	210

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.3E+00	mean
Daily exposure (mg/kg-day)	8.0E+00	max

### Hazard Quotients

BTAG Low HQ:	4.2E-01	mean
BTAG High HQ:	4.2E-02	mean

BTAG Low HQ:	4.7E-01	max
BTAG High HQ:	4.7E-02	max

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## Tier I - Summary of Hazard Quotients

**Receptor:** Surf Scoter  
**Location:** NA20

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	1.1E-01	--	--	--	2.3E-01	--	--	--	--	--	--
LOAEL HQ:	1.1E-02	--	--	--	4.6E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	8.0E-02	1.3E-02	1.9E-01	#VALUE!	4.1E-01	<b>2.4E+01</b>	2.0E-01	1.3E-01	3.7E-01	4.0E-01
BTAG High HQ:	#VALUE!	5.7E-03	2.1E-04	4.8E-02	#VALUE!	1.8E-02	3.9E-02	4.4E-02	3.3E-03	9.0E-02	4.0E-02
<b>MAXIMUM</b>											
NOAEL HQ:	1.2E-01	--	--	--	2.6E-01	--	--	--	--	--	--
LOAEL HQ:	1.2E-02	--	--	--	5.2E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.0E-01	1.4E-02	2.3E-01	#VALUE!	4.7E-01	<b>2.7E+01</b>	2.4E-01	1.6E-01	4.6E-01	4.2E-01
BTAG High HQ:	#VALUE!	7.2E-03	2.3E-04	5.6E-02	#VALUE!	2.1E-02	4.4E-02	5.3E-02	3.9E-03	1.1E-01	4.2E-02

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Benzol[a]pyrene  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.249671  
Maximum detected value (mg/kg, dry weight): 0.283951

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.39  
Maximum detected value (mg/kg, dry weight): 0.39

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.5E-02 mean  
Daily exposure (mg/kg-day) 1.7E-02 max

### Hazard Quotients

NOAEL HQ: 1.1E-01 mean  
LOAEL HQ: 1.1E-02 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 1.2E-01 max  
LOAEL HQ: 1.2E-02 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total PCB Congeners  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.117477
Maximum detected value (mg/kg, dry weight):	0.151235

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.2
Maximum detected value (mg/kg, dry weight):	0.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.2E-03	mean
Daily exposure (mg/kg-day)	9.1E-03	max

### Hazard Quotients

BTAG Low HQ:	8.0E-02	mean
BTAG High HQ:	5.7E-03	mean
BTAG Low HQ:	1.0E-01	max
BTAG High HQ:	7.2E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Tributyltin  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.155059
Maximum detected value (mg/kg, dry weight):	0.170886

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.6E-03	mean
Daily exposure (mg/kg-day)	1.0E-02	max

### Hazard Quotients

BTAG Low HQ:	1.3E-02	mean
BTAG High HQ:	2.1E-04	mean
BTAG Low HQ:	1.4E-02	max
BTAG High HQ:	2.3E-04	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Arsenic  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	18.52825
Maximum detected value (mg/kg, dry weight):	21.76871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	6.6
Maximum detected value (mg/kg, dry weight):	6.6

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E+00	mean
Daily exposure (mg/kg-day)	1.2E+00	max

### Hazard Quotients

BTAG Low HQ:	1.9E-01	mean
BTAG High HQ:	4.8E-02	mean
BTAG Low HQ:	2.3E-01	max
BTAG High HQ:	5.6E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Cadmium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.198423
Maximum detected value (mg/kg, dry weight):	0.238095

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.44
Maximum detected value (mg/kg, dry weight):	0.44

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-02	mean
Daily exposure (mg/kg-day)	1.5E-02	max

### Hazard Quotients

BTAG Low HQ:	1.6E-01	mean
BTAG High HQ:	1.2E-03	mean
BTAG Low HQ:	1.8E-01	max
BTAG High HQ:	1.4E-03	max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Chromium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.049934
Maximum detected value (mg/kg, dry weight):	2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	26
Maximum detected value (mg/kg, dry weight):	26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.0E-01	mean
Daily exposure (mg/kg-day)	2.3E-01	max

### Hazard Quotients

NOAEL HQ:	2.3E-01	mean
LOAEL HQ:	4.6E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	2.6E-01	max
LOAEL HQ:	5.2E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Copper  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	11.43233
Maximum detected value (mg/kg, dry weight):	13.60544

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.5E-01	mean
Daily exposure (mg/kg-day)	1.1E+00	max

### Hazard Quotients

BTAG Low HQ:	4.1E-01	mean
BTAG High HQ:	1.8E-02	mean
BTAG Low HQ:	4.7E-01	max
BTAG High HQ:	2.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Lead

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.969777  
Maximum detected value (mg/kg, dry weight): 3.741497

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 53  
Maximum detected value (mg/kg, dry weight): 53

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.4E-01 mean  
Daily exposure (mg/kg-day) 3.8E-01 max

### Hazard Quotients

BTAG Low HQ: 2.4E+01 mean  
BTAG High HQ: 3.9E-02 mean

BTAG Low HQ: 2.7E+01 max  
BTAG High HQ: 4.4E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total Mercury  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.127464  
Maximum detected value (mg/kg, dry weight): 0.156463

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.24  
Maximum detected value (mg/kg, dry weight): 0.24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.9E-03 mean  
Daily exposure (mg/kg-day) 9.5E-03 max

### Hazard Quotients

BTAG Low HQ: 2.0E-01 mean  
BTAG High HQ: 4.4E-02 mean

BTAG Low HQ: 2.4E-01 max  
BTAG High HQ: 5.3E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Nickel

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.812089
Maximum detected value (mg/kg, dry weight):	3.401361

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	8.4
Maximum detected value (mg/kg, dry weight):	8.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.8E-01	mean
Daily exposure (mg/kg-day)	2.2E-01	max

### Hazard Quotients

BTAG Low HQ:	1.3E-01	mean
BTAG High HQ:	3.3E-03	mean

BTAG Low HQ:	1.6E-01	max
BTAG High HQ:	3.9E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Selenium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.445466
Maximum detected value (mg/kg, dry weight):	1.851852

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.4E-02	mean
Daily exposure (mg/kg-day)	1.1E-01	max

### Hazard Quotients

BTAG Low HQ:	3.7E-01	mean
BTAG High HQ:	9.0E-02	mean
BTAG Low HQ:	4.6E-01	max
BTAG High HQ:	1.1E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Zinc  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	113.0092
Maximum detected value (mg/kg, dry weight):	117.284

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	190
Maximum detected value (mg/kg, dry weight):	190

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.9E+00	mean
Daily exposure (mg/kg-day)	7.2E+00	max

### Hazard Quotients

BTAG Low HQ:	4.0E-01	mean
BTAG High HQ:	4.0E-02	mean
BTAG Low HQ:	4.2E-01	max
BTAG High HQ:	4.2E-02	max

## Tier I - Summary of Hazard Quotients

**Receptor:** Sea Lion  
**Location:** NA20

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	--	--	--	--	1.9E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	9.1E-04	--	--	--	--	--	--
BTAG Low HQ:	4.4E-03	7.6E-03	1.4E-02	<b>1.3E+00</b>	#VALUE!	1.2E-01	1.0E-01	1.1E-01	5.1E-01	6.5E-01	2.7E-01
BTAG High HQ:	1.8E-04	2.1E-03	2.4E-04	8.8E-02	#VALUE!	5.0E-04	4.2E-04	1.1E-02	2.1E-03	2.7E-02	6.4E-03
<b>MAXIMUM</b>											
NOAEL HQ:	--	--	--	--	2.2E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.1E-03	--	--	--	--	--	--
BTAG Low HQ:	5.0E-03	9.6E-03	1.6E-02	<b>1.5E+00</b>	#VALUE!	1.4E-01	1.2E-01	1.3E-01	6.1E-01	8.3E-01	2.8E-01
BTAG High HQ:	2.0E-04	2.7E-03	2.6E-04	1.0E-01	#VALUE!	5.8E-04	4.9E-04	1.3E-02	2.5E-03	3.4E-02	6.6E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Benzo[a]pyrene  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.249671
Maximum detected value (mg/kg, dry weight):	0.283951

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.39
Maximum detected value (mg/kg, dry weight):	0.39

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.31
BTAG High (mg/kg-day):	32.8

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.8E-03	mean
Daily exposure (mg/kg-day)	6.5E-03	max

### Hazard Quotients

BTAG Low HQ:	4.4E-03	mean
BTAG High HQ:	1.8E-04	mean

BTAG Low HQ:	5.0E-03	max
BTAG High HQ:	2.0E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total PCB Congeners  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.117477
Maximum detected value (mg/kg, dry weight):	0.151235

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.2
Maximum detected value (mg/kg, dry weight):	0.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.36
BTAG High (mg/kg-day):	1.28

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.7E-03	mean
Daily exposure (mg/kg-day)	3.5E-03	max

### Hazard Quotients

BTAG Low HQ:	7.6E-03	mean
BTAG High HQ:	2.1E-03	mean
BTAG Low HQ:	9.6E-03	max
BTAG High HQ:	2.7E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Tributyltin  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.155059
Maximum detected value (mg/kg, dry weight):	0.170886

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.25
BTAG High (mg/kg-day):	15

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.6E-03	mean
Daily exposure (mg/kg-day)	4.0E-03	max

### Hazard Quotients

BTAG Low HQ:	1.4E-02	mean
BTAG High HQ:	2.4E-04	mean
BTAG Low HQ:	1.6E-02	max
BTAG High HQ:	2.6E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Arsenic  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	18.52825
Maximum detected value (mg/kg, dry weight):	21.76871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	6.6
Maximum detected value (mg/kg, dry weight):	6.6

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.32
BTAG High (mg/kg-day):	4.7

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.1E-01	mean
Daily exposure (mg/kg-day)	4.8E-01	max

### Hazard Quotients

BTAG Low HQ:	1.3E+00	mean
BTAG High HQ:	8.8E-02	mean
BTAG Low HQ:	1.5E+00	max
BTAG High HQ:	1.0E-01	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Cadmium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.198423  
Maximum detected value (mg/kg, dry weight): 0.238095

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.44  
Maximum detected value (mg/kg, dry weight): 0.44

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.06  
BTAG High (mg/kg-day): 2.64

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.7E-03 mean  
Daily exposure (mg/kg-day) 5.5E-03 max

### Hazard Quotients

BTAG Low HQ: 7.8E-02 mean  
BTAG High HQ: 1.8E-03 mean

BTAG Low HQ: 9.2E-02 max  
BTAG High HQ: 2.1E-03 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Chromium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.049934  
Maximum detected value (mg/kg, dry weight): 2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 26  
Maximum detected value (mg/kg, dry weight): 26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 3.3  
LOAEL (mg/kg-day): 69  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.3E-02 mean  
Daily exposure (mg/kg-day) 7.3E-02 max

### Hazard Quotients

NOAEL HQ: 1.9E-02 mean  
LOAEL HQ: 9.1E-04 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 2.2E-02 max  
LOAEL HQ: 1.1E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Copper  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	11.43233
Maximum detected value (mg/kg, dry weight):	13.60544

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.67
BTAG High (mg/kg-day):	632

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.2E-01	mean
Daily exposure (mg/kg-day)	3.7E-01	max

### Hazard Quotients

BTAG Low HQ:	1.2E-01	mean
BTAG High HQ:	5.0E-04	mean
BTAG Low HQ:	1.4E-01	max
BTAG High HQ:	5.8E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Lead  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.969777  
Maximum detected value (mg/kg, dry weight): 3.741497

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 53  
Maximum detected value (mg/kg, dry weight): 53

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1  
BTAG High (mg/kg-day): 241

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.0E-01 mean  
Daily exposure (mg/kg-day) 1.2E-01 max

### Hazard Quotients

BTAG Low HQ: 1.0E-01 mean  
BTAG High HQ: 4.2E-04 mean

BTAG Low HQ: 1.2E-01 max  
BTAG High HQ: 4.9E-04 max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total Mercury  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.127464
Maximum detected value (mg/kg, dry weight):	0.156463

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.24
Maximum detected value (mg/kg, dry weight):	0.24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.027
BTAG High (mg/kg-day):	0.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.0E-03	mean
Daily exposure (mg/kg-day)	3.6E-03	max

### Hazard Quotients

BTAG Low HQ:	1.1E-01	mean
BTAG High HQ:	1.1E-02	mean
BTAG Low HQ:	1.3E-01	max
BTAG High HQ:	1.3E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Nickel  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.812089
Maximum detected value (mg/kg, dry weight):	3.401361

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	8.4
Maximum detected value (mg/kg, dry weight):	8.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.133
BTAG High (mg/kg-day):	31.6

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.8E-02	mean
Daily exposure (mg/kg-day)	8.1E-02	max

### Hazard Quotients

BTAG Low HQ:	5.1E-01	mean
BTAG High HQ:	2.1E-03	mean
BTAG Low HQ:	6.1E-01	max
BTAG High HQ:	2.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Selenium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.445466
Maximum detected value (mg/kg, dry weight):	1.851852

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.05
BTAG High (mg/kg-day):	1.21

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.2E-02	mean
Daily exposure (mg/kg-day)	4.1E-02	max

### Hazard Quotients

BTAG Low HQ:	6.5E-01	mean
BTAG High HQ:	2.7E-02	mean
BTAG Low HQ:	8.3E-01	max
BTAG High HQ:	3.4E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Zinc  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	113.0092
Maximum detected value (mg/kg, dry weight):	117.284

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	190
Maximum detected value (mg/kg, dry weight):	190

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	9.6
BTAG High (mg/kg-day):	411

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E+00	mean
Daily exposure (mg/kg-day)	2.7E+00	max

### Hazard Quotients

BTAG Low HQ:	2.7E-01	mean
BTAG High HQ:	6.4E-03	mean
BTAG Low HQ:	2.8E-01	max
BTAG High HQ:	6.6E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor: CA Least Tern**  
**Location: NA20**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	2.3E-01	--	--	--	3.8E-01	--	--	--	--	--	--
LOAEL HQ:	2.3E-02	--	--	--	7.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.7E-01	2.7E-02	4.2E-01	#VALUE!	7.4E-01	<b>3.7E+01</b>	4.2E-01	2.7E-01	7.8E-01	8.4E-01
BTAG High HQ:	#VALUE!	1.2E-02	4.3E-04	1.0E-01	#VALUE!	3.2E-02	6.0E-02	9.1E-02	6.6E-03	1.9E-01	8.4E-02
<b>MAXIMUM</b>											
NOAEL HQ:	2.6E-01	--	--	--	4.5E-01	--	--	--	--	--	--
LOAEL HQ:	2.6E-02	--	--	--	9.0E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.1E-01	3.0E-02	4.9E-01	#VALUE!	8.5E-01	<b>4.4E+01</b>	5.1E-01	3.2E-01	<b>1.0E+00</b>	8.7E-01
BTAG High HQ:	#VALUE!	1.5E-02	4.7E-04	1.2E-01	#VALUE!	3.7E-02	7.1E-02	1.1E-01	7.8E-03	2.5E-01	8.7E-02

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Benzo[a]pyrene  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.249671
Maximum detected value (mg/kg, dry weight):	0.283951

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.39
Maximum detected value (mg/kg, dry weight):	0.39

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.2E-02	mean
Daily exposure (mg/kg-day)	3.6E-02	max

### Hazard Quotients

NOAEL HQ:	2.3E-01	mean
LOAEL HQ:	2.3E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	2.6E-01	max
LOAEL HQ:	2.6E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total PCB Congeners  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.117477
Maximum detected value (mg/kg, dry weight):	0.151235

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.2
Maximum detected value (mg/kg, dry weight):	0.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-02	mean
Daily exposure (mg/kg-day)	1.9E-02	max

### Hazard Quotients

BTAG Low HQ:	1.7E-01	mean
BTAG High HQ:	1.2E-02	mean
BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	1.5E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Tributyltin  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.155059
Maximum detected value (mg/kg, dry weight):	0.170886

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.0E-02	mean
Daily exposure (mg/kg-day)	2.2E-02	max

### Hazard Quotients

BTAG Low HQ:	2.7E-02	mean
BTAG High HQ:	4.3E-04	mean
BTAG Low HQ:	3.0E-02	max
BTAG High HQ:	4.7E-04	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Arsenic  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	18.52825
Maximum detected value (mg/kg, dry weight):	21.76871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	6.6
Maximum detected value (mg/kg, dry weight):	6.6

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.3E+00	mean
Daily exposure (mg/kg-day)	2.7E+00	max

### Hazard Quotients

BTAG Low HQ:	4.2E-01	mean
BTAG High HQ:	1.0E-01	mean
BTAG Low HQ:	4.9E-01	max
BTAG High HQ:	1.2E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Cadmium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.198423
Maximum detected value (mg/kg, dry weight):	0.238095

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.44
Maximum detected value (mg/kg, dry weight):	0.44

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E-02	mean
Daily exposure (mg/kg-day)	3.0E-02	max

### Hazard Quotients

BTAG Low HQ:	3.2E-01	mean
BTAG High HQ:	2.5E-03	mean
BTAG Low HQ:	3.8E-01	max
BTAG High HQ:	2.9E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Chromium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.049934
Maximum detected value (mg/kg, dry weight):	2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	26
Maximum detected value (mg/kg, dry weight):	26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.3E-01	mean
Daily exposure (mg/kg-day)	3.9E-01	max

### Hazard Quotients

NOAEL HQ:	3.8E-01	mean
LOAEL HQ:	7.7E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.5E-01	max
LOAEL HQ:	9.0E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Copper  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	11.43233
Maximum detected value (mg/kg, dry weight):	13.60544

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E+00	mean
Daily exposure (mg/kg-day)	2.0E+00	max

### Hazard Quotients

BTAG Low HQ:	7.4E-01	mean
BTAG High HQ:	3.2E-02	mean
BTAG Low HQ:	8.5E-01	max
BTAG High HQ:	3.7E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Lead

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.969777
Maximum detected value (mg/kg, dry weight):	3.741497

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	53
Maximum detected value (mg/kg, dry weight):	53

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.2E-01	mean
Daily exposure (mg/kg-day)	6.2E-01	max

### Hazard Quotients

BTAG Low HQ:	3.7E+01	mean
BTAG High HQ:	6.0E-02	mean

BTAG Low HQ:	4.4E+01	max
BTAG High HQ:	7.1E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total Mercury  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.127464
Maximum detected value (mg/kg, dry weight):	0.156463

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.24
Maximum detected value (mg/kg, dry weight):	0.24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.6E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	4.2E-01	mean
BTAG High HQ:	9.1E-02	mean
BTAG Low HQ:	5.1E-01	max
BTAG High HQ:	1.1E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Nickel

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.812089
Maximum detected value (mg/kg, dry weight):	3.401361

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	8.4
Maximum detected value (mg/kg, dry weight):	8.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.7E-01	mean
Daily exposure (mg/kg-day)	4.4E-01	max

### Hazard Quotients

BTAG Low HQ:	2.7E-01	mean
BTAG High HQ:	6.6E-03	mean

BTAG Low HQ:	3.2E-01	max
BTAG High HQ:	7.8E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Selenium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.445466
Maximum detected value (mg/kg, dry weight):	1.851852

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.8E-01	mean
Daily exposure (mg/kg-day)	2.3E-01	max

### Hazard Quotients

BTAG Low HQ:	7.8E-01	mean
BTAG High HQ:	1.9E-01	mean
BTAG Low HQ:	1.0E+00	max
BTAG High HQ:	2.5E-01	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Zinc  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	113.0092
Maximum detected value (mg/kg, dry weight):	117.284

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	190
Maximum detected value (mg/kg, dry weight):	190

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.4E+01	mean
Daily exposure (mg/kg-day)	1.5E+01	max

### Hazard Quotients

BTAG Low HQ:	8.4E-01	mean
BTAG High HQ:	8.4E-02	mean
BTAG Low HQ:	8.7E-01	max
BTAG High HQ:	8.7E-02	max

## Tier I - Summary of Hazard Quotients

**Receptor:** Green Turtle  
**Location:** NA20

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	6.4E-03	--	--	--	1.4E-02	--	--	--	--	--	--
LOAEL HQ:	6.4E-04	--	--	--	2.7E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	4.7E-03	7.7E-04	1.1E-02	#VALUE!	2.4E-02	<b>1.4E+00</b>	1.2E-02	7.8E-03	2.1E-02	2.4E-02
BTAG High HQ:	#VALUE!	3.3E-04	1.2E-05	2.8E-03	#VALUE!	1.1E-03	2.3E-03	2.6E-03	1.9E-04	5.3E-03	2.4E-03
<b>MAXIMUM</b>											
NOAEL HQ:	7.2E-03	--	--	--	1.5E-02	--	--	--	--	--	--
LOAEL HQ:	7.2E-04	--	--	--	3.1E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	5.9E-03	8.4E-04	1.3E-02	#VALUE!	2.7E-02	<b>1.6E+00</b>	1.4E-02	9.2E-03	2.7E-02	2.4E-02
BTAG High HQ:	#VALUE!	4.2E-04	1.3E-05	3.3E-03	#VALUE!	1.2E-03	2.6E-03	3.1E-03	2.3E-04	6.7E-03	2.4E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Benzol[a]pyrene  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.249671  
Maximum detected value (mg/kg, dry weight): 0.283951

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.39  
Maximum detected value (mg/kg, dry weight): 0.39

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 8.9E-04 mean  
Daily exposure (mg/kg-day) 1.0E-03 max

### Hazard Quotients

NOAEL HQ: 6.4E-03 mean  
LOAEL HQ: 6.4E-04 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 7.2E-03 max  
LOAEL HQ: 7.2E-04 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total PCB Congeners  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.117477
Maximum detected value (mg/kg, dry weight):	0.151235

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.2
Maximum detected value (mg/kg, dry weight):	0.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.2E-04	mean
Daily exposure (mg/kg-day)	5.3E-04	max

### Hazard Quotients

BTAG Low HQ:	4.7E-03	mean
BTAG High HQ:	3.3E-04	mean
BTAG Low HQ:	5.9E-03	max
BTAG High HQ:	4.2E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Tributyltin  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.155059  
Maximum detected value (mg/kg, dry weight): 0.170886

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.28  
Maximum detected value (mg/kg, dry weight): 0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.6E-04 mean  
Daily exposure (mg/kg-day) 6.1E-04 max

### Hazard Quotients

BTAG Low HQ: 7.7E-04 mean  
BTAG High HQ: 1.2E-05 mean

BTAG Low HQ: 8.4E-04 max  
BTAG High HQ: 1.3E-05 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Arsenic  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	18.52825
Maximum detected value (mg/kg, dry weight):	21.76871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	6.6
Maximum detected value (mg/kg, dry weight):	6.6

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.2E-02	mean
Daily exposure (mg/kg-day)	7.2E-02	max

### Hazard Quotients

BTAG Low HQ:	1.1E-02	mean
BTAG High HQ:	2.8E-03	mean
BTAG Low HQ:	1.3E-02	max
BTAG High HQ:	3.3E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Cadmium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.198423  
Maximum detected value (mg/kg, dry weight): 0.238095

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.44  
Maximum detected value (mg/kg, dry weight): 0.44

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.3E-04 mean  
Daily exposure (mg/kg-day) 8.6E-04 max

### Hazard Quotients

BTAG Low HQ: 9.2E-03 mean  
BTAG High HQ: 7.1E-05 mean

BTAG Low HQ: 1.1E-02 max  
BTAG High HQ: 8.3E-05 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Chromium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.049934  
Maximum detected value (mg/kg, dry weight): 2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 26  
Maximum detected value (mg/kg, dry weight): 26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E-02 mean  
Daily exposure (mg/kg-day) 1.3E-02 max

### Hazard Quotients

NOAEL HQ: 1.4E-02 mean  
LOAEL HQ: 2.7E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 1.5E-02 max  
LOAEL HQ: 3.1E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max



## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Copper

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	11.43233
Maximum detected value (mg/kg, dry weight):	13.60544

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.6E-02	mean
Daily exposure (mg/kg-day)	6.3E-02	max

### Hazard Quotients

BTAG Low HQ:	2.4E-02	mean
BTAG High HQ:	1.1E-03	mean

BTAG Low HQ:	2.7E-02	max
BTAG High HQ:	1.2E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Lead

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.969777
Maximum detected value (mg/kg, dry weight):	3.741497

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	53
Maximum detected value (mg/kg, dry weight):	53

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.0E-02	mean
Daily exposure (mg/kg-day)	2.3E-02	max

### Hazard Quotients

BTAG Low HQ:	1.4E+00	mean
BTAG High HQ:	2.3E-03	mean
BTAG Low HQ:	1.6E+00	max
BTAG High HQ:	2.6E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total Mercury  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.127464
Maximum detected value (mg/kg, dry weight):	0.156463

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.24
Maximum detected value (mg/kg, dry weight):	0.24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.6E-04	mean
Daily exposure (mg/kg-day)	5.6E-04	max

### Hazard Quotients

BTAG Low HQ:	1.2E-02	mean
BTAG High HQ:	2.6E-03	mean
BTAG Low HQ:	1.4E-02	max
BTAG High HQ:	3.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Nickel

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.812089
Maximum detected value (mg/kg, dry weight):	3.401361

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	8.4
Maximum detected value (mg/kg, dry weight):	8.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-02	mean
Daily exposure (mg/kg-day)	1.3E-02	max

### Hazard Quotients

BTAG Low HQ:	7.8E-03	mean
BTAG High HQ:	1.9E-04	mean
BTAG Low HQ:	9.2E-03	max
BTAG High HQ:	2.3E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Selenium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.445466
Maximum detected value (mg/kg, dry weight):	1.851852

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.9E-03	mean
Daily exposure (mg/kg-day)	6.2E-03	max

### Hazard Quotients

BTAG Low HQ:	2.1E-02	mean
BTAG High HQ:	5.3E-03	mean

BTAG Low HQ:	2.7E-02	max
BTAG High HQ:	6.7E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Zinc

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	113.0092
Maximum detected value (mg/kg, dry weight):	117.284

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	190
Maximum detected value (mg/kg, dry weight):	190

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.1E-01	mean
Daily exposure (mg/kg-day)	4.2E-01	max

### Hazard Quotients

BTAG Low HQ:	2.4E-02	mean
BTAG High HQ:	2.4E-03	mean

BTAG Low HQ:	2.4E-02	max
BTAG High HQ:	2.4E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor: Brown Pelican**  
**Location: NA20**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	1.5E-01	--	--	--	2.5E-01	--	--	--	--	--	--
LOAEL HQ:	1.5E-02	--	--	--	4.9E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.1E-01	1.8E-02	2.7E-01	#VALUE!	4.8E-01	<b>2.4E+01</b>	2.8E-01	1.8E-01	5.2E-01	5.5E-01
BTAG High HQ:	#VALUE!	7.8E-03	2.8E-04	6.9E-02	#VALUE!	2.1E-02	3.8E-02	6.0E-02	4.3E-03	1.3E-01	5.5E-02
<b>MAXIMUM</b>											
NOAEL HQ:	1.7E-01	--	--	--	2.9E-01	--	--	--	--	--	--
LOAEL HQ:	1.7E-02	--	--	--	5.8E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.4E-01	2.0E-02	3.2E-01	#VALUE!	5.5E-01	<b>2.8E+01</b>	3.4E-01	2.1E-01	6.6E-01	5.7E-01
BTAG High HQ:	#VALUE!	9.9E-03	3.1E-04	8.1E-02	#VALUE!	2.4E-02	4.5E-02	7.3E-02	5.1E-03	1.6E-01	5.7E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Benzo[a]pyrene  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.249671  
 Maximum detected value (mg/kg, dry weight): 0.283951

BAP

46	16.2	100	0.162
23	13.6	100	0.136
35	14.7	100	0.147
43	15.8	100	0.158

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.39  
 Maximum detected value (mg/kg, dry weight): 0.39

43	15.8	100	0.158
<b>38</b>			

**0.1522** 249.6715

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
 LOAEL (mg/kg-day): 1.4  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

283.9506

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.1E-02 mean  
 Daily exposure (mg/kg-day) 2.4E-02 max

### Hazard Quotients

NOAEL HQ: 1.5E-01 mean  
 LOAEL HQ: 1.5E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 1.7E-01 max  
 LOAEL HQ: 1.7E-02 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total PCB Congeners  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.117477
Maximum detected value (mg/kg, dry weight):	0.151235

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.2
Maximum detected value (mg/kg, dry weight):	0.2

PCB Cong		Total Solids			
24.5	16.2	100	0.162		
16.9	13.6	100	0.136		
13.2	14.7	100	0.147		
13.2	15.8	100	0.158		
21.6	15.8	100	0.158		
<b>17.88</b>			<b>0.1522</b>	<b>117.477</b>	

151.2346

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.8E-03	mean
Daily exposure (mg/kg-day)	1.3E-02	max

### Hazard Quotients

BTAG Low HQ:	1.1E-01	mean
BTAG High HQ:	7.8E-03	mean

BTAG Low HQ:	1.4E-01	max
BTAG High HQ:	9.9E-03	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Tributyltin  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.155059  
 Maximum detected value (mg/kg, dry weight): 0.170886

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.28  
 Maximum detected value (mg/kg, dry weight): 0.28

TBT	Total Solids			
22	16.2	100	0.162	
26	13.6	100	0.136	
27	14.7	100	0.147	
27	15.8	100	0.158	
16	15.8	100	0.158	
<b>23.6</b>			<b>0.1522</b>	<b>155.0591</b>
				170.8861

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
 BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.3E-02 mean  
 Daily exposure (mg/kg-day) 1.4E-02 max

### Hazard Quotients

BTAG Low HQ: 1.8E-02 mean  
 BTAG High HQ: 2.8E-04 mean

BTAG Low HQ: 2.0E-02 max  
 BTAG High HQ: 3.1E-04 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Arsenic  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 18.52825  
 Maximum detected value (mg/kg, dry weight): 21.76871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 6.6  
 Maximum detected value (mg/kg, dry weight): 6.6

Arsenic	Total Solids			
3	16.2	100	0.162	
2.2	13.6	100	0.136	
3.2	14.7	100	0.147	
3.2	15.8	100	0.158	
2.5	15.8	100	0.158	
<b>2.82</b>			<b>0.1522</b>	<b>18.52825</b>
21.76871				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
 BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.5E+00 mean  
 Daily exposure (mg/kg-day) 1.8E+00 max

### Hazard Quotients

BTAG Low HQ: 2.7E-01 mean  
 BTAG High HQ: 6.9E-02 mean

BTAG Low HQ: 3.2E-01 max  
 BTAG High HQ: 8.1E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Cadmium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.198423  
 Maximum detected value (mg/kg, dry weight): 0.238095

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.44  
 Maximum detected value (mg/kg, dry weight): 0.44

	Cadmium	Total Solids		
	0.029	16.2	100	0.162
	0.023	13.6	100	0.136
	0.035	14.7	100	0.147
	0.035	15.8	100	0.158
	0.029	15.8	100	0.158
	<b>0.0302</b>			<b>0.1522 0.198423</b>
	0.238095			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
 BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.7E-02 mean  
 Daily exposure (mg/kg-day) 2.0E-02 max

### Hazard Quotients

BTAG Low HQ: 2.1E-01 mean  
 BTAG High HQ: 1.6E-03 mean

BTAG Low HQ: 2.5E-01 max  
 BTAG High HQ: 1.9E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Chromium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.049934  
 Maximum detected value (mg/kg, dry weight): 2.517007

### Chromium Total Solids

0.25	16.2	100	0.162
0.27	13.6	100	0.136
0.37	14.7	100	0.147
0.37	15.8	100	0.158
0.3	15.8	100	0.158
<b>0.312</b>			<b>0.1522 2.049934</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 26  
 Maximum detected value (mg/kg, dry weight): 26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
 LOAEL (mg/kg-day): 4.3  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

2.517007

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.1E-01 mean  
 Daily exposure (mg/kg-day) 2.5E-01 max

### Hazard Quotients

NOAEL HQ: 2.5E-01 mean  
 LOAEL HQ: 4.9E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 2.9E-01 max  
 LOAEL HQ: 5.8E-02 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Copper  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 11.43233  
 Maximum detected value (mg/kg, dry weight): 13.60544

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 96  
 Maximum detected value (mg/kg, dry weight): 96

	Copper	Total Solids		
	1.7	16.2	100	0.162
	1.6	13.6	100	0.136
	2	14.7	100	0.147
	2	15.8	100	0.158
	1.4	15.8	100	0.158
	<b>1.74</b>			<b>0.1522 11.43233</b>
				13.60544

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
 BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E+00 mean  
 Daily exposure (mg/kg-day) 1.3E+00 max

### Hazard Quotients

BTAG Low HQ: 4.8E-01 mean  
 BTAG High HQ: 2.1E-02 mean

BTAG Low HQ: 5.5E-01 max  
 BTAG High HQ: 2.4E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Lead

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.969777
Maximum detected value (mg/kg, dry weight):	3.741497

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	53
Maximum detected value (mg/kg, dry weight):	53

Lead	Total Solids		
0.41	16.2	100	0.162
0.38	13.6	100	0.136
0.55	14.7	100	0.147
0.55	15.8	100	0.158
0.37	15.8	100	0.158
<b>0.452</b>			<b>0.1522</b>
3.741497			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.3E-01	mean
Daily exposure (mg/kg-day)	4.0E-01	max

### Hazard Quotients

BTAG Low HQ:	2.4E+01	mean
BTAG High HQ:	3.8E-02	mean

BTAG Low HQ:	2.8E+01	max
BTAG High HQ:	4.5E-02	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total Mercury  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.127464
Maximum detected value (mg/kg, dry weight):	0.156463

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.24
Maximum detected value (mg/kg, dry weight):	0.24

Mercury	Total Solids		
0.017	16.2	100	0.162
0.017	13.6	100	0.136
0.023	14.7	100	0.147
0.023	15.8	100	0.158
0.017	15.8	100	0.158
<b>0.0194</b>			<b>0.1522</b>
			0.156463

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-02	mean
Daily exposure (mg/kg-day)	1.3E-02	max

### Hazard Quotients

BTAG HQ:	2.8E-01	mean
BTAG HQ:	6.0E-02	mean

BTAG Low HQ:	3.4E-01	max
BTAG High HQ:	7.3E-02	max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Nickel  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.812089  
 Maximum detected value (mg/kg, dry weight): 3.401361

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 8.4  
 Maximum detected value (mg/kg, dry weight): 8.4

Nickel	Total Solids		
0.42	16.2	100	0.162
0.34	13.6	100	0.136
0.5	14.7	100	0.147
0.5	15.8	100	0.158
0.38	15.8	100	0.158
<b>0.428</b>			<b>0.1522 2.812089</b>
3.401361			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
 BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.4E-01 mean  
 Daily exposure (mg/kg-day) 2.9E-01 max

### Hazard Quotients

BTAG Low HQ: 1.8E-01 mean  
 BTAG High HQ: 4.3E-03 mean

BTAG Low HQ: 2.1E-01 max  
 BTAG High HQ: 5.1E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Selenium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.445466  
 Maximum detected value (mg/kg, dry weight): 1.851852

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1  
 Maximum detected value (mg/kg, dry weight): 1

Selenium	Total Solids			
0.3	16.2	100	0.162	
0.2	13.6	100	0.136	
0.2	14.7	100	0.147	
0.2	15.8	100	0.158	
0.2	15.8	100	0.158	
<b>0.22</b>			<b>0.1522</b>	<b>1.445466</b>
				1.851852

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
 BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E-01 mean  
 Daily exposure (mg/kg-day) 1.5E-01 max

### Hazard Quotients

BTAG Low HQ: 5.2E-01 mean  
 BTAG High HQ: 1.3E-01 mean

BTAG Low HQ: 6.6E-01 max  
 BTAG High HQ: 1.6E-01 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Zinc  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 113.0092  
 Maximum detected value (mg/kg, dry weight): 117.284

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 190  
 Maximum detected value (mg/kg, dry weight): 190

Zinc	Total Solids			
19	16.2	100	0.162	
15	13.6	100	0.136	
18	14.7	100	0.147	
18	15.8	100	0.158	
16	15.8	100	0.158	
<b>17.2</b>			<b>0.1522</b>	<b>113.0092</b>
				117.284

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
 BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.5E+00 mean  
 Daily exposure (mg/kg-day) 9.8E+00 max

### Hazard Quotients

BTAG Low HQ: 5.5E-01 mean  
 BTAG High HQ: 5.5E-02 mean

BTAG Low HQ: 5.7E-01 max  
 BTAG High HQ: 5.7E-02 max

## Tier I - Summary of Hazard Quotients

**Receptor:** Western Grebe  
**Location:** NA20

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	1.1E-01	--	--	--	2.5E-01	--	--	--	--	--	--
LOAEL HQ:	1.1E-02	--	--	--	5.0E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	8.3E-02	1.4E-02	2.0E-01	#VALUE!	4.4E-01	<b>2.7E+01</b>	2.1E-01	1.4E-01	3.7E-01	4.2E-01
BTAG High HQ:	#VALUE!	5.9E-03	2.2E-04	4.9E-02	#VALUE!	1.9E-02	4.3E-02	4.5E-02	3.4E-03	9.3E-02	4.2E-02
<b>MAXIMUM</b>											
NOAEL HQ:	1.3E-01	--	--	--	2.8E-01	--	--	--	--	--	--
LOAEL HQ:	1.3E-02	--	--	--	5.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.0E-01	1.5E-02	2.3E-01	#VALUE!	5.0E-01	<b>3.0E+01</b>	2.5E-01	1.6E-01	4.8E-01	4.3E-01
BTAG High HQ:	#VALUE!	7.4E-03	2.4E-04	5.7E-02	#VALUE!	2.2E-02	4.8E-02	5.5E-02	4.0E-03	1.2E-01	4.3E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Benzol[a]pyrene  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.249671  
Maximum detected value (mg/kg, dry weight): 0.283951

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.39  
Maximum detected value (mg/kg, dry weight): 0.39

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.6E-02 mean  
Daily exposure (mg/kg-day) 1.8E-02 max

### Hazard Quotients

NOAEL HQ: 1.1E-01 mean  
LOAEL HQ: 1.1E-02 mean  
BTAG Low HQ: #VALUEI mean  
BTAG High HQ: #VALUEI mean

NOAEL HQ: 1.3E-01 max  
LOAEL HQ: 1.3E-02 max  
BTAG Low HQ: #VALUEI max  
BTAG High HQ: #VALUEI max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total PCB Congeners  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.117477  
Maximum detected value (mg/kg, dry weight): 0.151235

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.2  
Maximum detected value (mg/kg, dry weight): 0.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.09  
BTAG High (mg/kg-day): 1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.5E-03 mean  
Daily exposure (mg/kg-day) 9.4E-03 max

### Hazard Quotients

BTAG Low HQ: 8.3E-02 mean  
BTAG High HQ: 5.9E-03 mean

BTAG Low HQ: 1.0E-01 max  
BTAG High HQ: 7.4E-03 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Tributyltin

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.155059
Maximum detected value (mg/kg, dry weight):	0.170886

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.28
Maximum detected value (mg/kg, dry weight):	0.28

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.9E-03	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	1.4E-02	mean
BTAG High HQ:	2.2E-04	mean

BTAG Low HQ:	1.5E-02	max
BTAG High HQ:	2.4E-04	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Arsenic

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	18.52825
Maximum detected value (mg/kg, dry weight):	21.76871

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	6.6
Maximum detected value (mg/kg, dry weight):	6.6

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E+00	mean
Daily exposure (mg/kg-day)	1.3E+00	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	4.9E-02	mean
BTAG Low HQ:	2.3E-01	max
BTAG High HQ:	5.7E-02	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Cadmium

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.198423
Maximum detected value (mg/kg, dry weight):	0.238095

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.44
Maximum detected value (mg/kg, dry weight):	0.44

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-02	mean
Daily exposure (mg/kg-day)	1.5E-02	max

### Hazard Quotients

BTAG Low HQ:	1.6E-01	mean
BTAG High HQ:	1.2E-03	mean
BTAG Low HQ:	1.9E-01	max
BTAG High HQ:	1.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Chromium  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.049934
Maximum detected value (mg/kg, dry weight):	2.517007

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	26
Maximum detected value (mg/kg, dry weight):	26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.2E-01	mean
Daily exposure (mg/kg-day)	2.4E-01	max

### Hazard Quotients

NOAEL HQ:	2.5E-01	mean
LOAEL HQ:	5.0E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	2.8E-01	max
LOAEL HQ:	5.7E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Copper

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	11.43233
Maximum detected value (mg/kg, dry weight):	13.60544

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E+00	mean
Daily exposure (mg/kg-day)	1.1E+00	max

### Hazard Quotients

BTAG Low HQ:	4.4E-01	mean
BTAG High HQ:	1.9E-02	mean
BTAG Low HQ:	5.0E-01	max
BTAG High HQ:	2.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Lead

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.969777
Maximum detected value (mg/kg, dry weight):	3.741497

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	53
Maximum detected value (mg/kg, dry weight):	53

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.7E-01	mean
Daily exposure (mg/kg-day)	4.2E-01	max

### Hazard Quotients

BTAG Low HQ:	2.7E+01	mean
BTAG High HQ:	4.3E-02	mean
BTAG Low HQ:	3.0E+01	max
BTAG High HQ:	4.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total Mercury  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.127464
Maximum detected value (mg/kg, dry weight):	0.156463

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.24
Maximum detected value (mg/kg, dry weight):	0.24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.2E-03	mean
Daily exposure (mg/kg-day)	9.8E-03	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	4.5E-02	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	5.5E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Nickel  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.812089  
Maximum detected value (mg/kg, dry weight): 3.401361

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 8.4  
Maximum detected value (mg/kg, dry weight): 8.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.9E-01 mean  
Daily exposure (mg/kg-day) 2.3E-01 max

### Hazard Quotients

BTAG Low HQ: 1.4E-01 mean  
BTAG High HQ: 3.4E-03 mean

BTAG Low HQ: 1.6E-01 max  
BTAG High HQ: 4.0E-03 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Selenium

**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.445466  
Maximum detected value (mg/kg, dry weight): 1.851852

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1  
Maximum detected value (mg/kg, dry weight): 1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 8.6E-02 mean  
Daily exposure (mg/kg-day) 1.1E-01 max

### Hazard Quotients

BTAG Low HQ: 3.7E-01 mean  
BTAG High HQ: 9.3E-02 mean

BTAG Low HQ: 4.8E-01 max  
BTAG High HQ: 1.2E-01 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Zinc  
**Location:** NA20

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 113.0092  
Maximum detected value (mg/kg, dry weight): 117.284

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 190  
Maximum detected value (mg/kg, dry weight): 190

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.2E+00 mean  
Daily exposure (mg/kg-day) 7.4E+00 max

### Hazard Quotients

BTAG Low HQ: 4.2E-01 mean  
BTAG High HQ: 4.2E-02 mean

BTAG Low HQ: 4.3E-01 max  
BTAG High HQ: 4.3E-02 max



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## Tier I - Summary of Hazard Quotients

**Receptor:** Surf Scoter  
**Location:** SW04

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	5.0E-01	--	--	--	4.5E-01	--	--	--	--	--	--
LOAEL HQ:	5.0E-02	--	--	--	9.1E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.2E-01	1.8E-01	3.0E-01	#VALUE!	<b>3.5E+00</b>	<b>1.5E+02</b>	3.0E-01	1.7E-01	4.1E-01	<b>1.5E+00</b>
BTAG High HQ:	#VALUE!	1.5E-02	2.9E-03	7.5E-02	#VALUE!	1.5E-01	2.4E-01	6.4E-02	4.1E-03	1.0E-01	1.5E-01
<b>MAXIMUM</b>											
NOAEL HQ:	5.7E-01	--	--	--	5.8E-01	--	--	--	--	--	--
LOAEL HQ:	5.7E-02	--	--	--	1.2E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.2E-01	4.1E-01	3.2E-01	#VALUE!	<b>4.0E+00</b>	<b>1.6E+02</b>	3.3E-01	2.3E-01	5.2E-01	<b>1.9E+00</b>
BTAG High HQ:	#VALUE!	1.6E-02	6.5E-03	8.0E-02	#VALUE!	1.8E-01	2.6E-01	7.1E-02	5.6E-03	1.3E-01	1.9E-01

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Benzol[a]pyrene  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.172507  
Maximum detected value (mg/kg, dry weight): 1.342282

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.5  
Maximum detected value (mg/kg, dry weight): 1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.0E-02 mean  
Daily exposure (mg/kg-day) 8.0E-02 max

### Hazard Quotients

NOAEL HQ: 5.0E-01 mean  
LOAEL HQ: 5.0E-02 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 5.7E-01 max  
LOAEL HQ: 5.7E-02 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total PCB Congeners  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.172418
Maximum detected value (mg/kg, dry weight):	0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3
Maximum detected value (mg/kg, dry weight):	3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	2.2E-01	mean
BTAG High HQ:	1.5E-02	mean

BTAG Low HQ:	2.2E-01	max
BTAG High HQ:	1.6E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Tributyltin  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.230458  
Maximum detected value (mg/kg, dry weight): 5.211268

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.8  
Maximum detected value (mg/kg, dry weight): 2.8

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.3E-01 mean  
Daily exposure (mg/kg-day) 3.0E-01 max

### Hazard Quotients

BTAG Low HQ: 1.8E-01 mean  
BTAG High HQ: 2.9E-03 mean

BTAG Low HQ: 4.1E-01 max  
BTAG High HQ: 6.5E-03 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Arsenic  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	24.12399
Maximum detected value (mg/kg, dry weight):	26.0274

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E+00	mean
Daily exposure (mg/kg-day)	1.8E+00	max

### Hazard Quotients

BTAG Low HQ:	3.0E-01	mean
BTAG High HQ:	7.5E-02	mean
BTAG Low HQ:	3.2E-01	max
BTAG High HQ:	8.0E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Cadmium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.260108  
Maximum detected value (mg/kg, dry weight): 0.387324

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.4  
Maximum detected value (mg/kg, dry weight): 2.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.2E-02 mean  
Daily exposure (mg/kg-day) 2.9E-02 max

### Hazard Quotients

BTAG Low HQ: 2.8E-01 mean  
BTAG High HQ: 2.1E-03 mean

BTAG Low HQ: 3.7E-01 max  
BTAG High HQ: 2.8E-03 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Chromium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 3.207547  
Maximum detected value (mg/kg, dry weight): 5.205479

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 65  
Maximum detected value (mg/kg, dry weight): 65

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.9E-01 mean  
Daily exposure (mg/kg-day) 5.0E-01 max

### Hazard Quotients

NOAEL HQ: 4.5E-01 mean  
LOAEL HQ: 9.1E-02 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 5.8E-01 max  
LOAEL HQ: 1.2E-01 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Copper  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	32.61456
Maximum detected value (mg/kg, dry weight):	55.47945

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1900
Maximum detected value (mg/kg, dry weight):	1900

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.0E+00	mean
Daily exposure (mg/kg-day)	9.3E+00	max

### Hazard Quotients

BTAG Low HQ:	3.5E+00	mean
BTAG High HQ:	1.5E-01	mean
BTAG Low HQ:	4.0E+00	max
BTAG High HQ:	1.8E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Lead  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	9.02965
Maximum detected value (mg/kg, dry weight):	13.0137

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	480
Maximum detected value (mg/kg, dry weight):	480

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.1E+00	mean
Daily exposure (mg/kg-day)	2.3E+00	max

### Hazard Quotients

BTAG Low HQ:	1.5E+02	mean
BTAG High HQ:	2.4E-01	mean
BTAG Low HQ:	1.6E+02	max
BTAG High HQ:	2.6E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total Mercury  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.136119
Maximum detected value (mg/kg, dry weight):	0.157534

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.2
Maximum detected value (mg/kg, dry weight):	1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-02	mean
Daily exposure (mg/kg-day)	1.3E-02	max

### Hazard Quotients

BTAG HQ:	3.0E-01	mean
BTAG HQ:	6.4E-02	mean
BTAG Low HQ:	3.3E-01	max
BTAG High HQ:	7.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Nickel  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.978437
Maximum detected value (mg/kg, dry weight):	4.43662

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	20
Maximum detected value (mg/kg, dry weight):	20

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.3E-01	mean
Daily exposure (mg/kg-day)	3.1E-01	max

### Hazard Quotients

BTAG Low HQ:	1.7E-01	mean
BTAG High HQ:	4.1E-03	mean
BTAG Low HQ:	2.3E-01	max
BTAG High HQ:	5.6E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Selenium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.617251
Maximum detected value (mg/kg, dry weight):	2.054795

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.2
Maximum detected value (mg/kg, dry weight):	1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.4E-02	mean
Daily exposure (mg/kg-day)	1.2E-01	max

### Hazard Quotients

BTAG Low HQ:	4.1E-01	mean
BTAG High HQ:	1.0E-01	mean
BTAG Low HQ:	5.2E-01	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Zinc  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	194.0701
Maximum detected value (mg/kg, dry weight):	315.0685

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	4600
Maximum detected value (mg/kg, dry weight):	4600

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E+01	mean
Daily exposure (mg/kg-day)	3.3E+01	max

### Hazard Quotients

BTAG Low HQ:	1.5E+00	mean
BTAG High HQ:	1.5E-01	mean
BTAG Low HQ:	1.9E+00	max
BTAG High HQ:	1.9E-01	max

## Tier I - Summary of Hazard Quotients

**Receptor:** Sea Lion  
**Location:** SW04

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	--	--	--	--	3.5E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.7E-03	--	--	--	--	--	--
BTAG Low HQ:	2.0E-02	1.6E-02	2.0E-01	<b>1.9E+00</b>	#VALUE!	7.6E-01	5.3E-01	1.4E-01	6.0E-01	7.3E-01	7.7E-01
BTAG High HQ:	8.2E-04	4.6E-03	3.4E-03	1.3E-01	#VALUE!	3.2E-03	2.2E-03	1.4E-02	2.5E-03	3.0E-02	1.8E-02
<b>MAXIMUM</b>											
NOAEL HQ:	--	--	--	--	4.8E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	2.3E-03	--	--	--	--	--	--
BTAG Low HQ:	2.3E-02	1.7E-02	4.7E-01	<b>2.0E+00</b>	#VALUE!	9.4E-01	6.1E-01	1.6E-01	8.4E-01	9.2E-01	<b>1.0E+00</b>
BTAG High HQ:	9.3E-04	4.7E-03	7.8E-03	1.4E-01	#VALUE!	4.0E-03	2.6E-03	1.6E-02	3.5E-03	3.8E-02	2.5E-02

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Benzol[a]pyrene  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.172507  
Maximum detected value (mg/kg, dry weight): 1.342282

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.5  
Maximum detected value (mg/kg, dry weight): 1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.31  
BTAG High (mg/kg-day): 32.8

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.7E-02 mean  
Daily exposure (mg/kg-day) 3.1E-02 max

### Hazard Quotients

BTAG Low HQ: 2.0E-02 mean  
BTAG High HQ: 8.2E-04 mean

BTAG Low HQ: 2.3E-02 max  
BTAG High HQ: 9.3E-04 max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total PCB Congeners  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.172418
Maximum detected value (mg/kg, dry weight):	0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3
Maximum detected value (mg/kg, dry weight):	3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.36
BTAG High (mg/kg-day):	1.28

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.8E-03	mean
Daily exposure (mg/kg-day)	6.0E-03	max

### Hazard Quotients

BTAG Low HQ:	1.6E-02	mean
BTAG High HQ:	4.6E-03	mean
BTAG Low HQ:	1.7E-02	max
BTAG High HQ:	4.7E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Tributyltin  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.230458
Maximum detected value (mg/kg, dry weight):	5.211268

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.8
Maximum detected value (mg/kg, dry weight):	2.8

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.25
BTAG High (mg/kg-day):	15

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.1E-02	mean
Daily exposure (mg/kg-day)	1.2E-01	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	3.4E-03	mean
BTAG Low HQ:	4.7E-01	max
BTAG High HQ:	7.8E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Arsenic  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	24.12399
Maximum detected value (mg/kg, dry weight):	26.0274

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.32
BTAG High (mg/kg-day):	4.7

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.0E-01	mean
Daily exposure (mg/kg-day)	6.4E-01	max

### Hazard Quotients

BTAG Low HQ:	1.9E+00	mean
BTAG High HQ:	1.3E-01	mean
BTAG Low HQ:	2.0E+00	max
BTAG High HQ:	1.4E-01	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Cadmium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.260108
Maximum detected value (mg/kg, dry weight):	0.387324

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.4
Maximum detected value (mg/kg, dry weight):	2.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.06
BTAG High (mg/kg-day):	2.64

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.4E-03	mean
Daily exposure (mg/kg-day)	1.0E-02	max

### Hazard Quotients

BTAG Low HQ:	1.2E-01	mean
BTAG High HQ:	2.8E-03	mean
BTAG Low HQ:	1.7E-01	max
BTAG High HQ:	3.8E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Chromium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	3.207547
Maximum detected value (mg/kg, dry weight):	5.205479

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	65
Maximum detected value (mg/kg, dry weight):	65

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	3.3
LOAEL (mg/kg-day):	69
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-01	mean
Daily exposure (mg/kg-day)	1.6E-01	max

### Hazard Quotients

NOAEL HQ:	3.5E-02	mean
LOAEL HQ:	1.7E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.8E-02	max
LOAEL HQ:	2.3E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Copper  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	32.61456
Maximum detected value (mg/kg, dry weight):	55.47945

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1900
Maximum detected value (mg/kg, dry weight):	1900

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.67
BTAG High (mg/kg-day):	632

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.0E+00	mean
Daily exposure (mg/kg-day)	2.5E+00	max

### Hazard Quotients

BTAG Low HQ:	7.6E-01	mean
BTAG High HQ:	3.2E-03	mean
BTAG Low HQ:	9.4E-01	max
BTAG High HQ:	4.0E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Lead  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	9.02965
Maximum detected value (mg/kg, dry weight):	13.0137

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	480
Maximum detected value (mg/kg, dry weight):	480

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

LOAEL (mg/kg-day):	90
BTAG Low (mg/kg-day):	1
BTAG High (mg/kg-day):	241

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.3E-01	mean
Daily exposure (mg/kg-day)	6.1E-01	max

### Hazard Quotients

BTAG Low HQ:	5.3E-01	mean
BTAG High HQ:	2.2E-03	mean
BTAG Low HQ:	6.1E-01	max
BTAG High HQ:	2.6E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total Mercury  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.136119
Maximum detected value (mg/kg, dry weight):	0.157534

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.2
Maximum detected value (mg/kg, dry weight):	1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.027
BTAG High (mg/kg-day):	0.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.8E-03	mean
Daily exposure (mg/kg-day)	4.3E-03	max

### Hazard Quotients

BTAG Low HQ:	1.4E-01	mean
BTAG High HQ:	1.4E-02	mean
BTAG Low HQ:	1.6E-01	max
BTAG High HQ:	1.6E-02	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Nickel  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.978437
Maximum detected value (mg/kg, dry weight):	4.43662

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	20
Maximum detected value (mg/kg, dry weight):	20

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.133
BTAG High (mg/kg-day):	31.6

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.9E-02	mean
Daily exposure (mg/kg-day)	1.1E-01	max

### Hazard Quotients

BTAG Low HQ:	6.0E-01	mean
BTAG High HQ:	2.5E-03	mean
BTAG Low HQ:	8.4E-01	max
BTAG High HQ:	3.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Selenium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.617251
Maximum detected value (mg/kg, dry weight):	2.054795

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.2
Maximum detected value (mg/kg, dry weight):	1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.05
BTAG High (mg/kg-day):	1.21

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.6E-02	mean
Daily exposure (mg/kg-day)	4.6E-02	max

### Hazard Quotients

BTAG Low HQ:	7.3E-01	mean
BTAG High HQ:	3.0E-02	mean
BTAG Low HQ:	9.2E-01	max
BTAG High HQ:	3.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Zinc  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	194.0701
Maximum detected value (mg/kg, dry weight):	315.0685

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	4600
Maximum detected value (mg/kg, dry weight):	4600

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	9.6
BTAG High (mg/kg-day):	411

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.4E+00	mean
Daily exposure (mg/kg-day)	1.0E+01	max

### Hazard Quotients

BTAG Low HQ:	7.7E-01	mean
BTAG High HQ:	1.8E-02	mean
BTAG Low HQ:	1.0E+00	max
BTAG High HQ:	2.5E-02	max

## Tier I - Summary of Hazard Quotients

Receptor: CA Least Tern  
 Location: SW04

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	<b>1.1E+00</b>	--	--	--	6.9E-01	--	--	--	--	--	--
LOAEL HQ:	1.1E-01	--	--	--	1.4E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	3.4E-01	3.9E-01	5.9E-01	#VALUE!	<b>4.3E+00</b>	<b>1.8E+02</b>	5.2E-01	3.1E-01	8.8E-01	<b>2.2E+00</b>
BTAG High HQ:	#VALUE!	2.4E-02	6.1E-03	1.5E-01	#VALUE!	1.9E-01	2.9E-01	1.1E-01	7.6E-03	2.2E-01	2.2E-01
<b>MAXIMUM</b>											
NOAEL HQ:	<b>1.2E+00</b>	--	--	--	9.7E-01	--	--	--	--	--	--
LOAEL HQ:	1.2E-01	--	--	--	1.9E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	3.5E-01	8.8E-01	6.3E-01	#VALUE!	<b>5.5E+00</b>	<b>2.2E+02</b>	5.9E-01	4.4E-01	<b>1.1E+00</b>	<b>3.1E+00</b>
BTAG High HQ:	#VALUE!	2.5E-02	1.4E-02	1.6E-01	#VALUE!	2.4E-01	3.5E-01	1.3E-01	1.1E-02	2.7E-01	3.1E-01

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Benzol[a]pyrene  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.172507  
Maximum detected value (mg/kg, dry weight): 1.342282

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.5  
Maximum detected value (mg/kg, dry weight): 1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.5E-01 mean  
Daily exposure (mg/kg-day) 1.7E-01 max

### Hazard Quotients

NOAEL HQ: 1.1E+00 mean  
LOAEL HQ: 1.1E-01 mean  
BTAG Low HQ: #VALUEI mean  
BTAG High HQ: #VALUEI mean

NOAEL HQ: 1.2E+00 max  
LOAEL HQ: 1.2E-01 max  
BTAG Low HQ: #VALUEI max  
BTAG High HQ: #VALUEI max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total PCB Congeners  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.172418
Maximum detected value (mg/kg, dry weight):	0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3
Maximum detected value (mg/kg, dry weight):	3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.0E-02	mean
Daily exposure (mg/kg-day)	3.1E-02	max

### Hazard Quotients

BTAG Low HQ:	3.4E-01	mean
BTAG High HQ:	2.4E-02	mean
BTAG Low HQ:	3.5E-01	max
BTAG High HQ:	2.5E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Tributyltin  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.230458  
Maximum detected value (mg/kg, dry weight): 5.211268

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.8  
Maximum detected value (mg/kg, dry weight): 2.8

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.8E-01 mean  
Daily exposure (mg/kg-day) 6.5E-01 max

### Hazard Quotients

BTAG Low HQ: 3.9E-01 mean  
BTAG High HQ: 6.1E-03 mean

BTAG Low HQ: 8.8E-01 max  
BTAG High HQ: 1.4E-02 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Arsenic  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	24.12399
Maximum detected value (mg/kg, dry weight):	26.0274

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.2E+00	mean
Daily exposure (mg/kg-day)	3.5E+00	max

### Hazard Quotients

BTAG Low HQ:	5.9E-01	mean
BTAG High HQ:	1.5E-01	mean
BTAG Low HQ:	6.3E-01	max
BTAG High HQ:	1.6E-01	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Cadmium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.260108
Maximum detected value (mg/kg, dry weight):	0.387324

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.4
Maximum detected value (mg/kg, dry weight):	2.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.9E-02	mean
Daily exposure (mg/kg-day)	5.5E-02	max

### Hazard Quotients

BTAG Low HQ:	4.9E-01	mean
BTAG High HQ:	3.8E-03	mean
BTAG Low HQ:	6.8E-01	max
BTAG High HQ:	5.3E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Chromium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	3.207547
Maximum detected value (mg/kg, dry weight):	5.205479

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	65
Maximum detected value (mg/kg, dry weight):	65

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.9E-01	mean
Daily exposure (mg/kg-day)	8.3E-01	max

### Hazard Quotients

NOAEL HQ:	6.9E-01	mean
LOAEL HQ:	1.4E-01	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	9.7E-01	max
LOAEL HQ:	1.9E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Copper  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	32.61456
Maximum detected value (mg/kg, dry weight):	55.47945

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1900
Maximum detected value (mg/kg, dry weight):	1900

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.8E+00	mean
Daily exposure (mg/kg-day)	1.3E+01	max

### Hazard Quotients

BTAG Low HQ:	4.3E+00	mean
BTAG High HQ:	1.9E-01	mean
BTAG Low HQ:	5.5E+00	max
BTAG High HQ:	2.4E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Lead  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	9.02965
Maximum detected value (mg/kg, dry weight):	13.0137

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	480
Maximum detected value (mg/kg, dry weight):	480

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E+00	mean
Daily exposure (mg/kg-day)	3.1E+00	max

### Hazard Quotients

BTAG Low HQ:	1.8E+02	mean
BTAG High HQ:	2.9E-01	mean
BTAG Low HQ:	2.2E+02	max
BTAG High HQ:	3.5E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total Mercury  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.136119
Maximum detected value (mg/kg, dry weight):	0.157534

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.2
Maximum detected value (mg/kg, dry weight):	1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.0E-02	mean
Daily exposure (mg/kg-day)	2.3E-02	max

### Hazard Quotients

BTAG Low HQ:	5.2E-01	mean
BTAG High HQ:	1.1E-01	mean
BTAG Low HQ:	5.9E-01	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Nickel  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.978437  
Maximum detected value (mg/kg, dry weight): 4.43662

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 20  
Maximum detected value (mg/kg, dry weight): 20

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.3E-01 mean  
Daily exposure (mg/kg-day) 6.0E-01 max

### Hazard Quotients

BTAG Low HQ: 3.1E-01 mean  
BTAG High HQ: 7.6E-03 mean

BTAG Low HQ: 4.4E-01 max  
BTAG High HQ: 1.1E-02 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Selenium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.617251  
Maximum detected value (mg/kg, dry weight): 2.054795

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.2  
Maximum detected value (mg/kg, dry weight): 1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.0E-01 mean  
Daily exposure (mg/kg-day) 2.5E-01 max

### Hazard Quotients

BTAG Low HQ: 8.8E-01 mean  
BTAG High HQ: 2.2E-01 mean

BTAG Low HQ: 1.1E+00 max  
BTAG High HQ: 2.7E-01 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Zinc  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	194.0701
Maximum detected value (mg/kg, dry weight):	315.0685

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	4600
Maximum detected value (mg/kg, dry weight):	4600

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.8E+01	mean
Daily exposure (mg/kg-day)	5.3E+01	max

### Hazard Quotients

BTAG Low HQ:	2.2E+00	mean
BTAG High HQ:	2.2E-01	mean
BTAG Low HQ:	3.1E+00	max
BTAG High HQ:	3.1E-01	max



## Tier I - Summary of Hazard Quotients

**Receptor: Green Turtle**  
**Location: SW04**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	2.9E-02	--	--	--	2.7E-02	--	--	--	--	--	--
LOAEL HQ:	2.9E-03	--	--	--	5.4E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.3E-02	1.1E-02	1.8E-02	#VALUE!	2.1E-01	<b>8.8E+00</b>	1.7E-02	9.9E-03	2.4E-02	8.9E-02
BTAG High HQ:	#VALUE!	9.1E-04	1.7E-04	4.4E-03	#VALUE!	9.1E-03	1.4E-02	3.8E-03	2.4E-04	5.9E-03	8.9E-03
<b>MAXIMUM</b>											
NOAEL HQ:	3.3E-02	--	--	--	3.5E-02	--	--	--	--	--	--
LOAEL HQ:	3.3E-03	--	--	--	6.9E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.3E-02	2.4E-02	1.9E-02	#VALUE!	2.4E-01	<b>9.7E+00</b>	1.9E-02	1.3E-02	3.0E-02	1.1E-01
BTAG High HQ:	#VALUE!	9.3E-04	3.8E-04	4.7E-03	#VALUE!	1.1E-02	1.6E-02	4.2E-03	3.3E-04	7.5E-03	1.1E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Benz[a]pyrene  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.172507  
Maximum detected value (mg/kg, dry weight): 1.342282

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.5  
Maximum detected value (mg/kg, dry weight): 1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.1E-03 mean  
Daily exposure (mg/kg-day) 4.7E-03 max

### Hazard Quotients

NOAEL HQ: 2.9E-02 mean  
LOAEL HQ: 2.9E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 3.3E-02 max  
LOAEL HQ: 3.3E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total PCB Congeners  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.172418
Maximum detected value (mg/kg, dry weight):	0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3
Maximum detected value (mg/kg, dry weight):	3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-03	mean
Daily exposure (mg/kg-day)	1.2E-03	max

### Hazard Quotients

BTAG Low HQ:	1.3E-02	mean
BTAG High HQ:	9.1E-04	mean
BTAG Low HQ:	1.3E-02	max
BTAG High HQ:	9.3E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Tributyltin  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.230458
Maximum detected value (mg/kg, dry weight):	5.211268

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.8
Maximum detected value (mg/kg, dry weight):	2.8

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.8E-03	mean
Daily exposure (mg/kg-day)	1.8E-02	max

### Hazard Quotients

BTAG Low HQ:	1.1E-02	mean
BTAG High HQ:	1.7E-04	mean
BTAG Low HQ:	2.4E-02	max
BTAG High HQ:	3.8E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Arsenic

**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	24.12399
Maximum detected value (mg/kg, dry weight):	26.0274

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.8E-02	mean
Daily exposure (mg/kg-day)	1.0E-01	max

### Hazard Quotients

BTAG Low HQ:	1.8E-02	mean
BTAG High HQ:	4.4E-03	mean

BTAG Low HQ:	1.9E-02	max
BTAG High HQ:	4.7E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Cadmium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.260108
Maximum detected value (mg/kg, dry weight):	0.387324

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.4
Maximum detected value (mg/kg, dry weight):	2.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-03	mean
Daily exposure (mg/kg-day)	1.7E-03	max

### Hazard Quotients

BTAG Low HQ:	1.6E-02	mean
BTAG High HQ:	1.3E-04	mean
BTAG Low HQ:	2.2E-02	max
BTAG High HQ:	1.7E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Chromium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	3.207547
Maximum detected value (mg/kg, dry weight):	5.205479

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	65
Maximum detected value (mg/kg, dry weight):	65

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.3E-02	mean
Daily exposure (mg/kg-day)	3.0E-02	max

### Hazard Quotients

NOAEL HQ:	2.7E-02	mean
LOAEL HQ:	5.4E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.5E-02	max
LOAEL HQ:	6.9E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Copper

**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	32.61456
Maximum detected value (mg/kg, dry weight):	55.47945

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1900
Maximum detected value (mg/kg, dry weight):	1900

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.8E-01	mean
Daily exposure (mg/kg-day)	5.5E-01	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	9.1E-03	mean

BTAG Low HQ:	2.4E-01	max
BTAG High HQ:	1.1E-02	max



## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Lead  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 9.02965  
Maximum detected value (mg/kg, dry weight): 13.0137

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 480  
Maximum detected value (mg/kg, dry weight): 480

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E-01 mean  
Daily exposure (mg/kg-day) 1.4E-01 max

### Hazard Quotients

BTAG Low HQ: 8.8E+00 mean  
BTAG High HQ: 1.4E-02 mean

BTAG Low HQ: 9.7E+00 max  
BTAG High HQ: 1.6E-02 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total Mercury  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.136119  
Maximum detected value (mg/kg, dry weight): 0.157534

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.2  
Maximum detected value (mg/kg, dry weight): 1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.8E-04 mean  
Daily exposure (mg/kg-day) 7.5E-04 max

### Hazard Quotients

BTAG Low HQ: 1.7E-02 mean  
BTAG High HQ: 3.8E-03 mean

BTAG Low HQ: 1.9E-02 max  
BTAG High HQ: 4.2E-03 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Nickel  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.978437  
Maximum detected value (mg/kg, dry weight): 4.43662

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 20  
Maximum detected value (mg/kg, dry weight): 20

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.4E-02 mean  
Daily exposure (mg/kg-day) 1.8E-02 max

### Hazard Quotients

BTAG Low HQ: 9.9E-03 mean  
BTAG High HQ: 2.4E-04 mean

BTAG Low HQ: 1.3E-02 max  
BTAG High HQ: 3.3E-04 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Selenium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.617251  
Maximum detected value (mg/kg, dry weight): 2.054795

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.2  
Maximum detected value (mg/kg, dry weight): 1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.5E-03 mean  
Daily exposure (mg/kg-day) 6.9E-03 max

### Hazard Quotients

BTAG Low HQ: 2.4E-02 mean  
BTAG High HQ: 5.9E-03 mean

BTAG Low HQ: 3.0E-02 max  
BTAG High HQ: 7.5E-03 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Zinc

**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 194.0701  
Maximum detected value (mg/kg, dry weight): 315.0685

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 4600  
Maximum detected value (mg/kg, dry weight): 4600

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.5E+00 mean  
Daily exposure (mg/kg-day) 1.9E+00 max

### Hazard Quotients

BTAG Low HQ: 8.9E-02 mean  
BTAG High HQ: 8.9E-03 mean

BTAG Low HQ: 1.1E-01 max  
BTAG High HQ: 1.1E-02 max

## Tier I - Summary of Hazard Quotients

**Receptor:** Brown Pelican  
**Location:** SW04

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	7.0E-01	--	--	--	4.3E-01	--	--	--	--	--	--
LOAEL HQ:	7.0E-02	--	--	--	8.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.1E-01	2.5E-01	3.9E-01	#VALUE!	<b>2.6E+00</b>	<b>1.1E+02</b>	3.4E-01	2.0E-01	5.8E-01	<b>1.4E+00</b>
BTAG High HQ:	#VALUE!	1.5E-02	4.0E-03	9.6E-02	#VALUE!	1.1E-01	1.8E-01	7.3E-02	4.9E-03	1.4E-01	1.4E-01
<b>MAXIMUM</b>											
NOAEL HQ:	7.9E-01	--	--	--	6.2E-01	--	--	--	--	--	--
LOAEL HQ:	7.9E-02	--	--	--	1.2E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.2E-01	5.8E-01	4.1E-01	#VALUE!	<b>3.4E+00</b>	<b>1.4E+02</b>	3.8E-01	2.9E-01	7.3E-01	<b>2.0E+00</b>
BTAG High HQ:	#VALUE!	1.6E-02	9.3E-03	1.0E-01	#VALUE!	1.5E-01	2.2E-01	8.2E-02	7.0E-03	1.8E-01	2.0E-01

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Benzo[a]pyrene  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.172507  
 Maximum detected value (mg/kg, dry weight): 1.342282

BAP

170	14.6	100	0.146
170	14.2	100	0.142
150	15.2	100	0.152
180	15.3	100	0.153
200	14.9	100	0.149
<b>174</b>			<b>0.1484</b>

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.5  
 Maximum detected value (mg/kg, dry weight): 1.5

**1172.507**

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
 LOAEL (mg/kg-day): 1.4  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

1342.282

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.7E-02 mean  
 Daily exposure (mg/kg-day) 1.1E-01 max

### Hazard Quotients

NOAEL HQ: 7.0E-01 mean  
 LOAEL HQ: 7.0E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 7.9E-01 max  
 LOAEL HQ: 7.9E-02 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total PCB Congeners  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.172418  
 Maximum detected value (mg/kg, dry weight): 0.18129

### PCB Cong Total Solids

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 3  
 Maximum detected value (mg/kg, dry weight): 3

195	14.6	100	0.155
161	14.2	100	0.148
15	15.2	100	0.131
136	15.3	100	0.155
196	14.9	100	0.147
<b>25.38</b>			0.1472 <b>172.4185</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.09  
 BTAG High (mg/kg-day): 1.27

**181.2903**

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.9E-02 mean  
 Daily exposure (mg/kg-day) 2.0E-02 max

### Hazard Quotients

BTAG Low HQ: 2.1E-01 mean  
 BTAG High HQ: 1.5E-02 mean

BTAG Low HQ: 2.2E-01 max  
 BTAG High HQ: 1.6E-02 max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Tributyltin  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.230458  
 Maximum detected value (mg/kg, dry weight): 5.211268

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.8  
 Maximum detected value (mg/kg, dry weight): 2.8

TBT	Total Solids		
330	14.6	100	0.146
740	14.2	100	0.142
420	15.2	100	0.152
150	15.3	100	0.153
15	14.9	100	0.149
<b>331</b>			<b>0.1484 2230.458</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
 BTAG High (mg/kg-day): 45.9

5211.268

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.9E-01 mean  
 Daily exposure (mg/kg-day) 4.3E-01 max

### Hazard Quotients

BTAG Low HQ: 2.5E-01 mean  
 BTAG High HQ: 4.0E-03 mean

BTAG Low HQ: 5.8E-01 max  
 BTAG High HQ: 9.3E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Arsenic  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 24.12399  
 Maximum detected value (mg/kg, dry weight): 26.0274

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 96  
 Maximum detected value (mg/kg, dry weight): 96

	Arsenic	Total Solids		
	3.8	14.6	100	0.146
	3.8	14.2	100	0.142
	3.1	15.2	100	0.152
	3.6	15.3	100	0.153
	3.6	14.9	100	0.149
	<b>3.58</b>			<b>0.1484 24.12399</b>
				26.0274

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
 BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.1E+00 mean  
 Daily exposure (mg/kg-day) 2.3E+00 max

### Hazard Quotients

BTAG Low HQ: 3.9E-01 mean  
 BTAG High HQ: 9.6E-02 mean

BTAG Low HQ: 4.1E-01 max  
 BTAG High HQ: 1.0E-01 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Cadmium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.260108  
 Maximum detected value (mg/kg, dry weight): 0.387324

Cadmium	Total Solids		
0.043	14.6	100	0.146
0.055	14.2	100	0.142
0.037	15.2	100	0.152
0.031	15.3	100	0.153
0.027	14.9	100	0.149
<b>0.0386</b>			<b>0.1484 0.260108</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.4  
 Maximum detected value (mg/kg, dry weight): 2.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
 BTAG High (mg/kg-day): 10.4

0.387324

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.5E-02 mean  
 Daily exposure (mg/kg-day) 3.6E-02 max

### Hazard Quotients

BTAG Low HQ: 3.2E-01 mean  
 BTAG High HQ: 2.4E-03 mean

BTAG Low HQ: 4.4E-01 max  
 BTAG High HQ: 3.4E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Chromium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	3.207547
Maximum detected value (mg/kg, dry weight):	5.205479

Chromium	Total Solids		
0.76	14.6	100	0.146
0.49	14.2	100	0.142
0.53	15.2	100	0.152
0.18	15.3	100	0.153
0.42	14.9	100	0.149
<b>0.476</b>			<b>0.1484</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	65
Maximum detected value (mg/kg, dry weight):	65

5.205479

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.7E-01	mean
Daily exposure (mg/kg-day)	5.4E-01	max

### Hazard Quotients

NOAEL HQ:	4.3E-01	mean
LOAEL HQ:	8.7E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	6.2E-01	max
LOAEL HQ:	1.2E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Copper  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 32.61456  
 Maximum detected value (mg/kg, dry weight): 55.47945

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1900  
 Maximum detected value (mg/kg, dry weight): 1900

Copper	Total Solids			
8.1	14.6	100	0.146	
5	14.2	100	0.142	
4	15.2	100	0.152	
2.5	15.3	100	0.153	
4.6	14.9	100	0.149	
<b>4.84</b>			<b>0.1484</b>	<b>32.61456</b>
55.47945				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
 BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.0E+00 mean  
 Daily exposure (mg/kg-day) 7.8E+00 max

### Hazard Quotients

BTAG Low HQ: 2.6E+00 mean  
 BTAG High HQ: 1.1E-01 mean

BTAG Low HQ: 3.4E+00 max  
 BTAG High HQ: 1.5E-01 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Lead  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 9.02965  
 Maximum detected value (mg/kg, dry weight): 13.0137

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 480  
 Maximum detected value (mg/kg, dry weight): 480

	Lead	Total Solids		
	1.9	14.6	100	0.146
	1.7	14.2	100	0.142
	1.3	15.2	100	0.152
	0.7	15.3	100	0.153
	1.1	14.9	100	0.149
	<b>1.34</b>			<b>0.1484</b>
				<b>9.02965</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
 BTAG High (mg/kg-day): 8.75

13.0137

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.6E+00 mean  
 Daily exposure (mg/kg-day) 1.9E+00 max

### Hazard Quotients

BTAG Low HQ: 1.1E+02 mean  
 BTAG High HQ: 1.8E-01 mean

BTAG Low HQ: 1.4E+02 max  
 BTAG High HQ: 2.2E-01 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total Mercury  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.136119
Maximum detected value (mg/kg, dry weight):	0.157534

Mercury	Total Solids		
0.023	14.6	100	0.146
0.021	14.2	100	0.142
0.022	15.2	100	0.152
0.016	15.3	100	0.153
0.019	14.9	100	0.149
<b>0.0202</b>			<b>0.1484</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.2
Maximum detected value (mg/kg, dry weight):	1.2

0.157534

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-02	mean
Daily exposure (mg/kg-day)	1.5E-02	max

### Hazard Quotients

BTAG Low HQ:	3.4E-01	mean
BTAG High HQ:	7.3E-02	mean

BTAG Low HQ:	3.8E-01	max
BTAG High HQ:	8.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Nickel

**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.978437
Maximum detected value (mg/kg, dry weight):	4.43662

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	20
Maximum detected value (mg/kg, dry weight):	20

Nickel	Total Solids		
0.48	14.6	100	0.146
0.63	14.2	100	0.142
0.35	15.2	100	0.152
0.37	15.3	100	0.153
0.38	14.9	100	0.149
<b>0.442</b>			<b>0.1484 2.978437</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

4.43662

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.8E-01	mean
Daily exposure (mg/kg-day)	3.9E-01	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	4.9E-03	mean

BTAG Low HQ:	2.9E-01	max
BTAG High HQ:	7.0E-03	max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Selenium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.617251  
 Maximum detected value (mg/kg, dry weight): 2.054795

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.2  
 Maximum detected value (mg/kg, dry weight): 1.2

Selenium	Total Solids			
0.3	14.6	100	0.146	
0.2	14.2	100	0.142	
0.2	15.2	100	0.152	
0.2	15.3	100	0.153	
0.3	14.9	100	0.149	
<b>0.24</b>			<b>0.1484</b>	<b>1.617251</b>
2.054795				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
 BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.3E-01 mean  
 Daily exposure (mg/kg-day) 1.7E-01 max

### Hazard Quotients

BTAG Low HQ: 5.8E-01 mean  
 BTAG High HQ: 1.4E-01 mean

BTAG Low HQ: 7.3E-01 max  
 BTAG High HQ: 1.8E-01 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Zinc  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 194.0701  
 Maximum detected value (mg/kg, dry weight): 315.0685

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 4600  
 Maximum detected value (mg/kg, dry weight): 4600

Zinc	Total Solids		
46	14.6	100	0.146
31	14.2	100	0.142
27	15.2	100	0.152
19	15.3	100	0.153
21	14.9	100	0.149
<b>28.8</b>			<b>0.1484 194.0701</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
 BTAG High (mg/kg-day): 172

315.0685

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.4E+01 mean  
 Daily exposure (mg/kg-day) 3.4E+01 max

### Hazard Quotients

BTAG Low HQ: 1.4E+00 mean  
 BTAG High HQ: 1.4E-01 mean

BTAG Low HQ: 2.0E+00 max  
 BTAG High HQ: 2.0E-01 max

## Tier I - Summary of Hazard Quotients

**Receptor:** Western Grebe  
**Location:** SW04

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	5.2E-01	--	--	--	5.0E-01	--	--	--	--	--	--
LOAEL HQ:	5.2E-02	--	--	--	1.0E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.4E-01	1.9E-01	3.2E-01	#VALUE!	<b>4.0E+00</b>	<b>1.7E+02</b>	3.2E-01	1.8E-01	4.2E-01	<b>1.7E+00</b>
BTAG High HQ:	#VALUE!	1.7E-02	3.0E-03	7.9E-02	#VALUE!	1.7E-01	2.7E-01	6.9E-02	4.4E-03	1.0E-01	1.7E-01
<b>MAXIMUM</b>											
NOAEL HQ:	5.9E-01	--	--	--	6.3E-01	--	--	--	--	--	--
LOAEL HQ:	5.9E-02	--	--	--	1.3E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.4E-01	4.2E-01	3.4E-01	#VALUE!	<b>4.5E+00</b>	<b>1.8E+02</b>	3.5E-01	2.4E-01	5.3E-01	<b>2.1E+00</b>
BTAG High HQ:	#VALUE!	1.7E-02	6.7E-03	8.4E-02	#VALUE!	2.0E-01	3.0E-01	7.5E-02	5.8E-03	1.3E-01	2.1E-01

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Benzo[a]pyrene  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.172507
Maximum detected value (mg/kg, dry weight):	1.342282

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.5
Maximum detected value (mg/kg, dry weight):	1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.3E-02	mean
Daily exposure (mg/kg-day)	8.2E-02	max

### Hazard Quotients

NOAEL HQ:	5.2E-01	mean
LOAEL HQ:	5.2E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.9E-01	max
LOAEL HQ:	5.9E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total PCB Congeners  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.172418  
Maximum detected value (mg/kg, dry weight): 0.18129

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 3  
Maximum detected value (mg/kg, dry weight): 3

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.09  
BTAG High (mg/kg-day): 1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.1E-02 mean  
Daily exposure (mg/kg-day) 2.2E-02 max

### Hazard Quotients

BTAG Low HQ: 2.4E-01 mean  
BTAG High HQ: 1.7E-02 mean

BTAG Low HQ: 2.4E-01 max  
BTAG High HQ: 1.7E-02 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Tributyltin

**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.230458
Maximum detected value (mg/kg, dry weight):	5.211268

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.8
Maximum detected value (mg/kg, dry weight):	2.8

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.4E-01	mean
Daily exposure (mg/kg-day)	3.1E-01	max

### Hazard Quotients

BTAG Low HQ:	1.9E-01	mean
BTAG High HQ:	3.0E-03	mean
BTAG Low HQ:	4.2E-01	max
BTAG High HQ:	6.7E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Arsenic  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	24.12399
Maximum detected value (mg/kg, dry weight):	26.0274

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	96
Maximum detected value (mg/kg, dry weight):	96

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E+00	mean
Daily exposure (mg/kg-day)	1.9E+00	max

### Hazard Quotients

BTAG Low HQ:	3.2E-01	mean
BTAG High HQ:	7.9E-02	mean
BTAG Low HQ:	3.4E-01	max
BTAG High HQ:	8.4E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Cadmium

**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.260108
Maximum detected value (mg/kg, dry weight):	0.387324

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.4
Maximum detected value (mg/kg, dry weight):	2.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-02	mean
Daily exposure (mg/kg-day)	3.1E-02	max

### Hazard Quotients

BTAG Low HQ:	3.0E-01	mean
BTAG High HQ:	2.3E-03	mean
BTAG Low HQ:	3.9E-01	max
BTAG High HQ:	3.0E-03	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Chromium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	3.207547
Maximum detected value (mg/kg, dry weight):	5.205479

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	65
Maximum detected value (mg/kg, dry weight):	65

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.3E-01	mean
Daily exposure (mg/kg-day)	5.5E-01	max

### Hazard Quotients

NOAEL HQ:	5.0E-01	mean
LOAEL HQ:	1.0E-01	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	6.3E-01	max
LOAEL HQ:	1.3E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Copper

**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	32.61456
Maximum detected value (mg/kg, dry weight):	55.47945

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1900
Maximum detected value (mg/kg, dry weight):	1900

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.1E+00	mean
Daily exposure (mg/kg-day)	1.0E+01	max

### Hazard Quotients

BTAG Low HQ:	4.0E+00	mean
BTAG High HQ:	1.7E-01	mean

BTAG Low HQ:	4.5E+00	max
BTAG High HQ:	2.0E-01	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Lead

**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	9.02965
Maximum detected value (mg/kg, dry weight):	13.0137

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	480
Maximum detected value (mg/kg, dry weight):	480

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E+00	mean
Daily exposure (mg/kg-day)	2.6E+00	max

### Hazard Quotients

BTAG Low HQ:	1.7E+02	mean
BTAG High HQ:	2.7E-01	mean

BTAG Low HQ:	1.8E+02	max
BTAG High HQ:	3.0E-01	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total Mercury  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.136119
Maximum detected value (mg/kg, dry weight):	0.157534

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.2
Maximum detected value (mg/kg, dry weight):	1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-02	mean
Daily exposure (mg/kg-day)	1.4E-02	max

### Hazard Quotients

BTAG Low HQ:	3.2E-01	mean
BTAG High HQ:	6.9E-02	mean
BTAG Low HQ:	3.5E-01	max
BTAG High HQ:	7.5E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Nickel

**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.978437
Maximum detected value (mg/kg, dry weight):	4.43662

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	20
Maximum detected value (mg/kg, dry weight):	20

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.5E-01	mean
Daily exposure (mg/kg-day)	3.3E-01	max

### Hazard Quotients

BTAG Low HQ:	1.8E-01	mean
BTAG High HQ:	4.4E-03	mean
BTAG Low HQ:	2.4E-01	max
BTAG High HQ:	5.8E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Selenium  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.617251
Maximum detected value (mg/kg, dry weight):	2.054795

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.2
Maximum detected value (mg/kg, dry weight):	1.2

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.7E-02	mean
Daily exposure (mg/kg-day)	1.2E-01	max

### Hazard Quotients

BTAG Low HQ:	4.2E-01	mean
BTAG High HQ:	1.0E-01	mean
BTAG Low HQ:	5.3E-01	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Zinc  
**Location:** SW04

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	194.0701
Maximum detected value (mg/kg, dry weight):	315.0685

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	4600
Maximum detected value (mg/kg, dry weight):	4600

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.9E+01	mean
Daily exposure (mg/kg-day)	3.6E+01	max

### Hazard Quotients

BTAG Low HQ:	1.7E+00	mean
BTAG High HQ:	1.7E-01	mean
BTAG Low HQ:	2.1E+00	max
BTAG High HQ:	2.1E-01	max

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## Tier I - Summary of Hazard Quotients

**Receptor:** Surf Scoter  
**Location:** SW08

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	5.3E-01	--	--	--	4.6E-01	--	--	--	--	--	--
LOAEL HQ:	5.3E-02	--	--	--	9.2E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	5.9E-01	8.8E-02	2.1E-01	#VALUE!	<b>2.0E+00</b>	<b>8.2E+01</b>	4.0E-01	1.5E-01	3.9E-01	5.2E-01
BTAG High HQ:	#VALUE!	4.2E-02	1.4E-03	5.3E-02	#VALUE!	8.7E-02	1.3E-01	8.6E-02	3.7E-03	9.6E-02	5.2E-02
<b>MAXIMUM</b>											
NOAEL HQ:	5.5E-01	--	--	--	5.3E-01	--	--	--	--	--	--
LOAEL HQ:	5.5E-02	--	--	--	1.1E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	6.8E-01	1.4E-01	2.1E-01	#VALUE!	<b>2.2E+00</b>	<b>1.0E+02</b>	4.6E-01	1.7E-01	5.1E-01	5.6E-01
BTAG High HQ:	#VALUE!	4.8E-02	2.3E-03	5.2E-02	#VALUE!	9.6E-02	1.7E-01	1.0E-01	4.2E-03	1.3E-01	5.6E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Benzo[a]pyrene  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.16737
Maximum detected value (mg/kg, dry weight):	1.210191

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.9
Maximum detected value (mg/kg, dry weight):	2.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.5E-02	mean
Daily exposure (mg/kg-day)	7.7E-02	max

### Hazard Quotients

NOAEL HQ:	5.3E-01	mean
LOAEL HQ:	5.3E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.5E-01	max
LOAEL HQ:	5.5E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total PCB Congeners  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.720816
Maximum detected value (mg/kg, dry weight):	0.859873

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	4
Maximum detected value (mg/kg, dry weight):	4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.3E-02	mean
Daily exposure (mg/kg-day)	6.1E-02	max

### Hazard Quotients

BTAG Low HQ:	5.9E-01	mean
BTAG High HQ:	4.2E-02	mean
BTAG Low HQ:	6.8E-01	max
BTAG High HQ:	4.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Tributyltin  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.040788
Maximum detected value (mg/kg, dry weight):	1.75

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.9
Maximum detected value (mg/kg, dry weight):	1.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.4E-02	mean
Daily exposure (mg/kg-day)	1.0E-01	max

### Hazard Quotients

BTAG Low HQ:	8.8E-02	mean
BTAG High HQ:	1.4E-03	mean
BTAG Low HQ:	1.4E-01	max
BTAG High HQ:	2.3E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Arsenic  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.40928
Maximum detected value (mg/kg, dry weight):	19.10828

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	26
Maximum detected value (mg/kg, dry weight):	26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E+00	mean
Daily exposure (mg/kg-day)	1.2E+00	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	5.3E-02	mean
BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	5.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Cadmium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.21519
Maximum detected value (mg/kg, dry weight):	0.235669

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.67
Maximum detected value (mg/kg, dry weight):	0.67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.4E-02	mean
Daily exposure (mg/kg-day)	1.5E-02	max

### Hazard Quotients

BTAG Low HQ:	1.8E-01	mean
BTAG High HQ:	1.4E-03	mean
BTAG Low HQ:	1.9E-01	max
BTAG High HQ:	1.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Chromium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.559775
Maximum detected value (mg/kg, dry weight):	3.581081

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	78
Maximum detected value (mg/kg, dry weight):	78

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.0E-01	mean
Daily exposure (mg/kg-day)	4.5E-01	max

### Hazard Quotients

NOAEL HQ:	4.6E-01	mean
LOAEL HQ:	9.2E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.3E-01	max
LOAEL HQ:	1.1E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Copper  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	23.20675
Maximum detected value (mg/kg, dry weight):	31.15942

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1000
Maximum detected value (mg/kg, dry weight):	1000

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.6E+00	mean
Daily exposure (mg/kg-day)	5.0E+00	max

### Hazard Quotients

BTAG Low HQ:	2.0E+00	mean
BTAG High HQ:	8.7E-02	mean
BTAG Low HQ:	2.2E+00	max
BTAG High HQ:	9.6E-02	max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Lead  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	5.921238
Maximum detected value (mg/kg, dry weight):	11.66667

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	250
Maximum detected value (mg/kg, dry weight):	250

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E+00	mean
Daily exposure (mg/kg-day)	1.5E+00	max

### Hazard Quotients

BTAG Low HQ:	8.2E+01	mean
BTAG High HQ:	1.3E-01	mean
BTAG Low HQ:	1.0E+02	max
BTAG High HQ:	1.7E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total Mercury  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.130802
Maximum detected value (mg/kg, dry weight):	0.175676

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.5
Maximum detected value (mg/kg, dry weight):	2.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-02	mean
Daily exposure (mg/kg-day)	1.8E-02	max

### Hazard Quotients

BTAG Low HQ:	4.0E-01	mean
BTAG High HQ:	8.6E-02	mean
BTAG Low HQ:	4.6E-01	max
BTAG High HQ:	1.0E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Nickel

**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.362869
Maximum detected value (mg/kg, dry weight):	2.905405

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	23
Maximum detected value (mg/kg, dry weight):	23

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.1E-01	mean
Daily exposure (mg/kg-day)	2.4E-01	max

### Hazard Quotients

BTAG Low HQ:	1.5E-01	mean
BTAG High HQ:	3.7E-03	mean

BTAG Low HQ:	1.7E-01	max
BTAG High HQ:	4.2E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Selenium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.547117
Maximum detected value (mg/kg, dry weight):	2.027027

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.0E-02	mean
Daily exposure (mg/kg-day)	1.2E-01	max

### Hazard Quotients

BTAG Low HQ:	3.9E-01	mean
BTAG High HQ:	9.6E-02	mean
BTAG Low HQ:	5.1E-01	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Zinc  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	111.1111
Maximum detected value (mg/kg, dry weight):	121.0191

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	860
Maximum detected value (mg/kg, dry weight):	860

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.0E+00	mean
Daily exposure (mg/kg-day)	9.6E+00	max

### Hazard Quotients

BTAG Low HQ:	5.2E-01	mean
BTAG High HQ:	5.2E-02	mean
BTAG Low HQ:	5.6E-01	max
BTAG High HQ:	5.6E-02	max

## Tier I - Summary of Hazard Quotients

**Receptor:** Sea Lion  
**Location:** SW08

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	--	--	--	--	3.3E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.6E-03	--	--	--	--	--	--
BTAG Low HQ:	2.1E-02	5.2E-02	9.7E-02	<b>1.4E+00</b>	#VALUE!	4.5E-01	3.0E-01	1.7E-01	5.1E-01	6.9E-01	3.2E-01
BTAG High HQ:	8.4E-04	1.5E-02	1.6E-03	9.5E-02	#VALUE!	1.9E-03	1.3E-03	1.7E-02	2.1E-03	2.9E-02	7.4E-03
<b>MAXIMUM</b>											
NOAEL HQ:	--	--	--	--	4.0E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.9E-03	--	--	--	--	--	--
BTAG Low HQ:	2.2E-02	6.0E-02	1.6E-01	<b>1.4E+00</b>	#VALUE!	5.1E-01	4.3E-01	2.1E-01	6.0E-01	9.1E-01	3.4E-01
BTAG High HQ:	8.7E-04	1.7E-02	2.7E-03	9.3E-02	#VALUE!	2.2E-03	1.8E-03	2.1E-02	2.5E-03	3.7E-02	7.9E-03

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Benzo[a]pyrene  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45	
Food ingestion rate (kg/day dry wt):	0.99	
Sediment ingestion rate (kg/day dry wt):	0.0308	
Area Use Factor (unitless):	1	0.004
Time Use Factor (unitless):	1	

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.16737
Maximum detected value (mg/kg, dry weight):	1.210191

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.9
Maximum detected value (mg/kg, dry weight):	2.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.31
BTAG High (mg/kg-day):	32.8

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.8E-02	mean
Daily exposure (mg/kg-day)	2.9E-02	max

### Hazard Quotients

BTAG Low HQ:	2.1E-02	mean
BTAG High HQ:	8.4E-04	mean
BTAG Low HQ:	2.2E-02	max
BTAG High HQ:	8.7E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total PCB Congeners  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.720816
Maximum detected value (mg/kg, dry weight):	0.859873

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	4
Maximum detected value (mg/kg, dry weight):	4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.36
BTAG High (mg/kg-day):	1.28

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E-02	mean
Daily exposure (mg/kg-day)	2.2E-02	max

### Hazard Quotients

BTAG Low HQ:	5.2E-02	mean
BTAG High HQ:	1.5E-02	mean
BTAG Low HQ:	6.0E-02	max
BTAG High HQ:	1.7E-02	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Tributyltin  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.040788
Maximum detected value (mg/kg, dry weight):	1.75

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.9
Maximum detected value (mg/kg, dry weight):	1.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.25
BTAG High (mg/kg-day):	15

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-02	mean
Daily exposure (mg/kg-day)	4.0E-02	max

### Hazard Quotients

BTAG Low HQ:	9.7E-02	mean
BTAG High HQ:	1.6E-03	mean

BTAG Low HQ:	1.6E-01	max
BTAG High HQ:	2.7E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Arsenic  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.40928  
Maximum detected value (mg/kg, dry weight): 19.10828

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 26  
Maximum detected value (mg/kg, dry weight): 26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.32  
BTAG High (mg/kg-day): 4.7

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.4E-01 mean  
Daily exposure (mg/kg-day) 4.4E-01 max

### Hazard Quotients

BTAG Low HQ: 1.4E+00 mean  
BTAG High HQ: 9.5E-02 mean

BTAG Low HQ: 1.4E+00 max  
BTAG High HQ: 9.3E-02 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Cadmium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.21519
Maximum detected value (mg/kg, dry weight):	0.235669

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.67
Maximum detected value (mg/kg, dry weight):	0.67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.06
BTAG High (mg/kg-day):	2.64

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.2E-03	mean
Daily exposure (mg/kg-day)	5.6E-03	max

### Hazard Quotients

BTAG Low HQ:	8.7E-02	mean
BTAG High HQ:	2.0E-03	mean
BTAG Low HQ:	9.4E-02	max
BTAG High HQ:	2.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Chromium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.559775
Maximum detected value (mg/kg, dry weight):	3.581081

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	78
Maximum detected value (mg/kg, dry weight):	78

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	3.3
LOAEL (mg/kg-day):	69
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-01	mean
Daily exposure (mg/kg-day)	1.3E-01	max

### Hazard Quotients

NOAEL HQ:	3.3E-02	mean
LOAEL HQ:	1.6E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.0E-02	max
LOAEL HQ:	1.9E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Copper  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 23.20675  
Maximum detected value (mg/kg, dry weight): 31.15942

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1000  
Maximum detected value (mg/kg, dry weight): 1000

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.67  
BTAG High (mg/kg-day): 632

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E+00 mean  
Daily exposure (mg/kg-day) 1.4E+00 max

### Hazard Quotients

BTAG Low HQ: 4.5E-01 mean  
BTAG High HQ: 1.9E-03 mean

BTAG Low HQ: 5.1E-01 max  
BTAG High HQ: 2.2E-03 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Lead  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	5.921238
Maximum detected value (mg/kg, dry weight):	11.66667

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	250
Maximum detected value (mg/kg, dry weight):	250

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1
BTAG High (mg/kg-day):	241

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.0E-01	mean
Daily exposure (mg/kg-day)	4.3E-01	max

### Hazard Quotients

BTAG Low HQ:	3.0E-01	mean
BTAG High HQ:	1.3E-03	mean
BTAG Low HQ:	4.3E-01	max
BTAG High HQ:	1.8E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total Mercury  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.130802
Maximum detected value (mg/kg, dry weight):	0.175676

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.5
Maximum detected value (mg/kg, dry weight):	2.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.027
BTAG High (mg/kg-day):	0.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.6E-03	mean
Daily exposure (mg/kg-day)	5.6E-03	max

### Hazard Quotients

BTAG Low HQ:	1.7E-01	mean
BTAG High HQ:	1.7E-02	mean

BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	2.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Nickel  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.362869
Maximum detected value (mg/kg, dry weight):	2.905405

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	23
Maximum detected value (mg/kg, dry weight):	23

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.133
BTAG High (mg/kg-day):	31.6

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.8E-02	mean
Daily exposure (mg/kg-day)	8.0E-02	max

### Hazard Quotients

BTAG Low HQ:	5.1E-01	mean
BTAG High HQ:	2.1E-03	mean
BTAG Low HQ:	6.0E-01	max
BTAG High HQ:	2.5E-03	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Selenium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.547117
Maximum detected value (mg/kg, dry weight):	2.027027

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.05
BTAG High (mg/kg-day):	1.21

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.5E-02	mean
Daily exposure (mg/kg-day)	4.5E-02	max

### Hazard Quotients

BTAG Low HQ:	6.9E-01	mean
BTAG High HQ:	2.9E-02	mean
BTAG Low HQ:	9.1E-01	max
BTAG High HQ:	3.7E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Zinc  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 111.1111  
Maximum detected value (mg/kg, dry weight): 121.0191

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 860  
Maximum detected value (mg/kg, dry weight): 860

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 9.6  
BTAG High (mg/kg-day): 411

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.0E+00 mean  
Daily exposure (mg/kg-day) 3.3E+00 max

### Hazard Quotients

BTAG Low HQ: 3.2E-01 mean  
BTAG High HQ: 7.4E-03 mean

BTAG Low HQ: 3.4E-01 max  
BTAG High HQ: 7.9E-03 max

## Tier I - Summary of Hazard Quotients

**Receptor: CA Least Tern**  
**Location: SW08**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	<b>1.1E+00</b>	--	--	--	6.4E-01	--	--	--	--	--	--
LOAEL HQ:	1.1E-01	--	--	--	1.3E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	<b>1.1E+00</b>	1.8E-01	4.5E-01	#VALUE!	<b>2.6E+00</b>	<b>1.1E+02</b>	6.1E-01	2.6E-01	8.4E-01	9.4E-01
BTAG High HQ:	#VALUE!	7.9E-02	2.9E-03	1.1E-01	#VALUE!	1.1E-01	1.7E-01	1.3E-01	6.4E-03	2.1E-01	9.4E-02
<b>MAXIMUM</b>											
NOAEL HQ:	<b>1.1E+00</b>	--	--	--	7.9E-01	--	--	--	--	--	--
LOAEL HQ:	1.1E-01	--	--	--	1.6E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	<b>1.3E+00</b>	3.0E-01	4.4E-01	#VALUE!	<b>3.0E+00</b>	<b>1.6E+02</b>	7.5E-01	3.1E-01	<b>1.1E+00</b>	<b>1.0E+00</b>
BTAG High HQ:	#VALUE!	9.2E-02	4.8E-03	1.1E-01	#VALUE!	1.3E-01	2.5E-01	1.6E-01	7.6E-03	2.7E-01	1.0E-01

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Benzo[a]pyrene  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.16737
Maximum detected value (mg/kg, dry weight):	1.210191

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.9
Maximum detected value (mg/kg, dry weight):	2.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-01	mean
Daily exposure (mg/kg-day)	1.6E-01	max

### Hazard Quotients

NOAEL HQ:	1.1E+00	mean
LOAEL HQ:	1.1E-01	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	1.1E+00	max
LOAEL HQ:	1.1E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total PCB Congeners  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.720816
Maximum detected value (mg/kg, dry weight):	0.859873

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	4
Maximum detected value (mg/kg, dry weight):	4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E-01	mean
Daily exposure (mg/kg-day)	1.2E-01	max

### Hazard Quotients

BTAG Low HQ:	1.1E+00	mean
BTAG High HQ:	7.9E-02	mean
BTAG Low HQ:	1.3E+00	max
BTAG High HQ:	9.2E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Tributyltin  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.040788
Maximum detected value (mg/kg, dry weight):	1.75

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.9
Maximum detected value (mg/kg, dry weight):	1.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-01	mean
Daily exposure (mg/kg-day)	2.2E-01	max

### Hazard Quotients

BTAG Low HQ:	1.8E-01	mean
BTAG High HQ:	2.9E-03	mean
BTAG Low HQ:	3.0E-01	max
BTAG High HQ:	4.8E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Arsenic  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.40928  
Maximum detected value (mg/kg, dry weight): 19.10828

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 26  
Maximum detected value (mg/kg, dry weight): 26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.5E+00 mean  
Daily exposure (mg/kg-day) 2.4E+00 max

### Hazard Quotients

BTAG Low HQ: 4.5E-01 mean  
BTAG High HQ: 1.1E-01 mean

BTAG Low HQ: 4.4E-01 max  
BTAG High HQ: 1.1E-01 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Cadmium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.21519  
Maximum detected value (mg/kg, dry weight): 0.235669

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.67  
Maximum detected value (mg/kg, dry weight): 0.67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.8E-02 mean  
Daily exposure (mg/kg-day) 3.1E-02 max

### Hazard Quotients

BTAG Low HQ: 3.5E-01 mean  
BTAG High HQ: 2.7E-03 mean

BTAG Low HQ: 3.9E-01 max  
BTAG High HQ: 3.0E-03 max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Chromium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.559775
Maximum detected value (mg/kg, dry weight):	3.581081

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	78
Maximum detected value (mg/kg, dry weight):	78

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.5E-01	mean
Daily exposure (mg/kg-day)	6.8E-01	max

### Hazard Quotients

NOAEL HQ:	6.4E-01	mean
LOAEL HQ:	1.3E-01	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	7.9E-01	max
LOAEL HQ:	1.6E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Copper  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 23.20675  
Maximum detected value (mg/kg, dry weight): 31.15942

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1000  
Maximum detected value (mg/kg, dry weight): 1000

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.9E+00 mean  
Daily exposure (mg/kg-day) 6.9E+00 max

### Hazard Quotients

BTAG Low HQ: 2.6E+00 mean  
BTAG High HQ: 1.1E-01 mean

BTAG Low HQ: 3.0E+00 max  
BTAG High HQ: 1.3E-01 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Lead

**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 5.921238  
Maximum detected value (mg/kg, dry weight): 11.66667

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 250  
Maximum detected value (mg/kg, dry weight): 250

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.5E+00 mean  
Daily exposure (mg/kg-day) 2.2E+00 max

### Hazard Quotients

BTAG Low HQ: 1.1E+02 mean  
BTAG High HQ: 1.7E-01 mean

BTAG Low HQ: 1.6E+02 max  
BTAG High HQ: 2.5E-01 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total Mercury  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.130802
Maximum detected value (mg/kg, dry weight):	0.175676

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.5
Maximum detected value (mg/kg, dry weight):	2.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-02	mean
Daily exposure (mg/kg-day)	2.9E-02	max

### Hazard Quotients

BTAG Low HQ:	6.1E-01	mean
BTAG High HQ:	1.3E-01	mean
BTAG Low HQ:	7.5E-01	max
BTAG High HQ:	1.6E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Nickel  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.362869
Maximum detected value (mg/kg, dry weight):	2.905405

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	23
Maximum detected value (mg/kg, dry weight):	23

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.6E-01	mean
Daily exposure (mg/kg-day)	4.3E-01	max

### Hazard Quotients

BTAG Low HQ:	2.6E-01	mean
BTAG High HQ:	6.4E-03	mean
BTAG Low HQ:	3.1E-01	max
BTAG High HQ:	7.6E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Selenium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.547117
Maximum detected value (mg/kg, dry weight):	2.027027

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E-01	mean
Daily exposure (mg/kg-day)	2.5E-01	max

### Hazard Quotients

BTAG Low HQ:	8.4E-01	mean
BTAG High HQ:	2.1E-01	mean
BTAG Low HQ:	1.1E+00	max
BTAG High HQ:	2.7E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Zinc  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	111.1111
Maximum detected value (mg/kg, dry weight):	121.0191

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	860
Maximum detected value (mg/kg, dry weight):	860

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.6E+01	mean
Daily exposure (mg/kg-day)	1.7E+01	max

### Hazard Quotients

BTAG Low HQ:	9.4E-01	mean
BTAG High HQ:	9.4E-02	mean
BTAG Low HQ:	1.0E+00	max
BTAG High HQ:	1.0E-01	max

## Tier I - Summary of Hazard Quotients

**Receptor: Green Turtle**  
**Location: SW08**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	3.1E-02	--	--	--	2.7E-02	--	--	--	--	--	--
LOAEL HQ:	3.1E-03	--	--	--	5.5E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	3.5E-02	5.2E-03	1.2E-02	#VALUE!	1.2E-01	<b>4.9E+00</b>	2.3E-02	8.9E-03	2.3E-02	3.1E-02
BTAG High HQ:	#VALUE!	2.5E-03	8.2E-05	3.1E-03	#VALUE!	5.2E-03	7.8E-03	5.1E-03	2.2E-04	5.6E-03	3.1E-03
<b>MAXIMUM</b>											
NOAEL HQ:	3.2E-02	--	--	--	3.1E-02	--	--	--	--	--	--
LOAEL HQ:	3.2E-03	--	--	--	6.3E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	4.0E-02	8.3E-03	1.2E-02	#VALUE!	1.3E-01	<b>6.2E+00</b>	2.7E-02	1.0E-02	3.0E-02	3.3E-02
BTAG High HQ:	#VALUE!	2.8E-03	1.3E-04	3.1E-03	#VALUE!	5.7E-03	9.9E-03	5.9E-03	2.5E-04	7.3E-03	3.3E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.



## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Benz[a]pyrene  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.16737  
Maximum detected value (mg/kg, dry weight): 1.210191

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.9  
Maximum detected value (mg/kg, dry weight): 2.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.4E-03 mean  
Daily exposure (mg/kg-day) 4.5E-03 max

### Hazard Quotients

NOAEL HQ: 3.1E-02 mean  
LOAEL HQ: 3.1E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 3.2E-02 max  
LOAEL HQ: 3.2E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total PCB Congeners  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.720816
Maximum detected value (mg/kg, dry weight):	0.859873

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	4
Maximum detected value (mg/kg, dry weight):	4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.1E-03	mean
Daily exposure (mg/kg-day)	3.6E-03	max

### Hazard Quotients

BTAG Low HQ:	3.5E-02	mean
BTAG High HQ:	2.5E-03	mean
BTAG Low HQ:	4.0E-02	max
BTAG High HQ:	2.8E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Tributyltin  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.040788
Maximum detected value (mg/kg, dry weight):	1.75

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.9
Maximum detected value (mg/kg, dry weight):	1.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.8E-03	mean
Daily exposure (mg/kg-day)	6.1E-03	max

### Hazard Quotients

BTAG Low HQ:	5.2E-03	mean
BTAG High HQ:	8.2E-05	mean
BTAG Low HQ:	8.3E-03	max
BTAG High HQ:	1.3E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Arsenic

**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.40928
Maximum detected value (mg/kg, dry weight):	19.10828

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	26
Maximum detected value (mg/kg, dry weight):	26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.8E-02	mean
Daily exposure (mg/kg-day)	6.7E-02	max

### Hazard Quotients

BTAG Low HQ:	1.2E-02	mean
BTAG High HQ:	3.1E-03	mean

BTAG Low HQ:	1.2E-02	max
BTAG High HQ:	3.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Cadmium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.21519
Maximum detected value (mg/kg, dry weight):	0.235669

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.67
Maximum detected value (mg/kg, dry weight):	0.67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.3E-04	mean
Daily exposure (mg/kg-day)	9.0E-04	max

### Hazard Quotients

BTAG Low HQ:	1.0E-02	mean
BTAG High HQ:	8.0E-05	mean
BTAG Low HQ:	1.1E-02	max
BTAG High HQ:	8.7E-05	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Chromium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.559775
Maximum detected value (mg/kg, dry weight):	3.581081

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	78
Maximum detected value (mg/kg, dry weight):	78

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-02	mean
Daily exposure (mg/kg-day)	2.7E-02	max

### Hazard Quotients

NOAEL HQ:	2.7E-02	mean
LOAEL HQ:	5.5E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.1E-02	max
LOAEL HQ:	6.3E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Copper  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 23.20675  
Maximum detected value (mg/kg, dry weight): 31.15942

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1000  
Maximum detected value (mg/kg, dry weight): 1000

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.7E-01 mean  
Daily exposure (mg/kg-day) 3.0E-01 max

### Hazard Quotients

BTAG Low HQ: 1.2E-01 mean  
BTAG High HQ: 5.2E-03 mean

BTAG Low HQ: 1.3E-01 max  
BTAG High HQ: 5.7E-03 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Lead

**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 5.921238  
Maximum detected value (mg/kg, dry weight): 11.66667

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 250  
Maximum detected value (mg/kg, dry weight): 250

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.8E-02 mean  
Daily exposure (mg/kg-day) 8.7E-02 max

### Hazard Quotients

BTAG Low HQ: 4.9E+00 mean  
BTAG High HQ: 7.8E-03 mean

BTAG Low HQ: 6.2E+00 max  
BTAG High HQ: 9.9E-03 max



## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total Mercury  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.130802  
Maximum detected value (mg/kg, dry weight): 0.175676

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.5  
Maximum detected value (mg/kg, dry weight): 2.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.2E-04 mean  
Daily exposure (mg/kg-day) 1.1E-03 max

### Hazard Quotients

BTAG Low HQ: 2.3E-02 mean  
BTAG High HQ: 5.1E-03 mean

BTAG Low HQ: 2.7E-02 max  
BTAG High HQ: 5.9E-03 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Nickel  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.362869  
Maximum detected value (mg/kg, dry weight): 2.905405

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 23  
Maximum detected value (mg/kg, dry weight): 23

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E-02 mean  
Daily exposure (mg/kg-day) 1.4E-02 max

### Hazard Quotients

BTAG Low HQ: 8.9E-03 mean  
BTAG High HQ: 2.2E-04 mean

BTAG Low HQ: 1.0E-02 max  
BTAG High HQ: 2.5E-04 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Selenium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.547117  
Maximum detected value (mg/kg, dry weight): 2.027027

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1  
Maximum detected value (mg/kg, dry weight): 1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.2E-03 mean  
Daily exposure (mg/kg-day) 6.8E-03 max

### Hazard Quotients

BTAG Low HQ: 2.3E-02 mean  
BTAG High HQ: 5.6E-03 mean

BTAG Low HQ: 3.0E-02 max  
BTAG High HQ: 7.3E-03 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Zinc  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	111.1111
Maximum detected value (mg/kg, dry weight):	121.0191

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	860
Maximum detected value (mg/kg, dry weight):	860

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.3E-01	mean
Daily exposure (mg/kg-day)	5.6E-01	max

### Hazard Quotients

BTAG Low HQ:	3.1E-02	mean
BTAG High HQ:	3.1E-03	mean
BTAG Low HQ:	3.3E-02	max
BTAG High HQ:	3.3E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor: Brown Pelican**  
**Location: SW08**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	7.1E-01	--	--	--	4.0E-01	--	--	--	--	--	--
LOAEL HQ:	7.1E-02	--	--	--	8.0E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	7.3E-01	1.2E-01	2.9E-01	#VALUE!	<b>1.6E+00</b>	<b>6.6E+01</b>	3.8E-01	1.7E-01	5.5E-01	6.1E-01
BTAG High HQ:	#VALUE!	5.1E-02	1.9E-03	7.3E-02	#VALUE!	6.9E-02	1.0E-01	8.3E-02	4.1E-03	1.4E-01	6.1E-02
<b>MAXIMUM</b>											
NOAEL HQ:	7.4E-01	--	--	--	5.0E-01	--	--	--	--	--	--
LOAEL HQ:	7.4E-02	--	--	--	9.9E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	8.5E-01	2.0E-01	2.9E-01	#VALUE!	<b>1.9E+00</b>	<b>9.9E+01</b>	4.8E-01	2.0E-01	7.2E-01	6.6E-01
BTAG High HQ:	#VALUE!	6.0E-02	3.2E-03	7.2E-02	#VALUE!	8.2E-02	1.6E-01	1.0E-01	4.9E-03	1.8E-01	6.6E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Benzo[a]pyrene  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.16737  
 Maximum detected value (mg/kg, dry weight): 1.210191

BAP

170	14.8	100	0.148
140	12	100	0.12
180	14.8	100	0.148
190	15.7	100	0.157
150	13.8	100	0.138
<b>166</b>			<b>0.1422</b>

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.9  
 Maximum detected value (mg/kg, dry weight): 2.9

**1167.37**

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
 LOAEL (mg/kg-day): 1.4  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

1210.191

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.9E-02 mean  
 Daily exposure (mg/kg-day) 1.0E-01 max

### Hazard Quotients

NOAEL HQ: 7.1E-01 mean  
 LOAEL HQ: 7.1E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 7.4E-01 max  
 LOAEL HQ: 7.4E-02 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total PCB Congeners  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.720816  
 Maximum detected value (mg/kg, dry weight): 0.859873

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 4  
 Maximum detected value (mg/kg, dry weight): 4

PCB Cong	Total Solids			
103	14.8	100	0.148	
98.2	12	100	0.12	
86.2	14.8	100	0.148	
135	15.7	100	0.157	
90.1	13.8	100	0.138	
<b>102.5</b>			<b>0.1422</b>	<b>720.8158</b>
				<b>859.8726</b>

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.09  
 BTAG High (mg/kg-day): 1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.5E-02 mean  
 Daily exposure (mg/kg-day) 7.7E-02 max

### Hazard Quotients

BTAG Low HQ: 7.3E-01 mean  
 BTAG High HQ: 5.1E-02 mean

LOAEL HQ: 4.3E-02 max  
 BTAG Low HQ: 8.5E-01 max  
 BTAG High HQ: 6.0E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Tributyltin

**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.040788
Maximum detected value (mg/kg, dry weight):	1.75

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.9
Maximum detected value (mg/kg, dry weight):	1.9

	TBT	Total Solids		
	120	14.8	100	0.148
	210	12	100	0.12
	110	14.8	100	0.148
	180	15.7	100	0.157
	120	13.8	100	0.138
	<b>148</b>			<b>0.1422</b>
	1750			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.7E-02	mean
Daily exposure (mg/kg-day)	1.4E-01	max

### Hazard Quotients

BTAG Low HQ:	1.2E-01	mean
BTAG High HQ:	1.9E-03	mean

BTAG Low HQ:	2.0E-01	max
BTAG High HQ:	3.2E-03	max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Arsenic  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.40928  
 Maximum detected value (mg/kg, dry weight): 19.10828

Arsenic	Total Solids		
2.6	14.8	100	0.148
2.8	12	100	0.12
2.8	14.8	100	0.148
3	15.7	100	0.157
2.6	13.8	100	0.138
<b>2.76</b>			<b>0.1422 19.40928</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 26  
 Maximum detected value (mg/kg, dry weight): 26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
 BTAG High (mg/kg-day): 22

19.10828

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.6E+00 mean  
 Daily exposure (mg/kg-day) 1.6E+00 max

### Hazard Quotients

BTAG Low HQ: 2.9E-01 mean  
 BTAG High HQ: 7.3E-02 mean

BTAG Low HQ: 2.9E-01 max  
 BTAG High HQ: 7.2E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Cadmium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.21519
Maximum detected value (mg/kg, dry weight):	0.235669

Cadmium	Total Solids		
0.022	14.8	100	0.148
0.029	12	100	0.12
0.035	14.8	100	0.148
0.037	15.7	100	0.157
0.03	13.8	100	0.138
<b>0.0306</b>			<b>0.1422</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.67
Maximum detected value (mg/kg, dry weight):	0.67

0.235669

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	2.3E-01	mean
BTAG High HQ:	1.8E-03	mean

BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	1.9E-03	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Chromium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.559775  
 Maximum detected value (mg/kg, dry weight): 3.581081

### Chromium Total Solids

0.33	14.8	100	0.148
0.35	12	100	0.12
0.53	14.8	100	0.148
0.3	15.7	100	0.157
0.31	13.8	100	0.138
<b>0.364</b>			<b>0.1422 2.559775</b>

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 78  
 Maximum detected value (mg/kg, dry weight): 78

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
 LOAEL (mg/kg-day): 4.3  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

3.581081

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.4E-01 mean  
 Daily exposure (mg/kg-day) 4.3E-01 max

### Hazard Quotients

NOAEL HQ: 4.0E-01 mean  
 LOAEL HQ: 8.0E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 5.0E-01 max  
 LOAEL HQ: 9.9E-02 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Copper  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 23.20675  
 Maximum detected value (mg/kg, dry weight): 31.15942

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1000  
 Maximum detected value (mg/kg, dry weight): 1000

Copper	Total Solids			
3.2	14.8	100	0.148	
3.2	12	100	0.12	
2.6	14.8	100	0.148	
3.2	15.7	100	0.157	
4.3	13.8	100	0.138	
<b>3.3</b>			<b>0.1422</b>	<b>23.20675</b>
				31.15942

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
 BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.6E+00 mean  
 Daily exposure (mg/kg-day) 4.3E+00 max

### Hazard Quotients

BTAG Low HQ: 1.6E+00 mean  
 BTAG High HQ: 6.9E-02 mean

BTAG Low HQ: 1.9E+00 max  
 BTAG High HQ: 8.2E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Lead  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 5.921238  
 Maximum detected value (mg/kg, dry weight): 11.66667

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 250  
 Maximum detected value (mg/kg, dry weight): 250

Lead	Total Solids			
0.8	14.8	100	0.148	
1.4	12	100	0.12	
0.6	14.8	100	0.148	
0.66	15.7	100	0.157	
0.75	13.8	100	0.138	
<b>0.842</b>			<b>0.1422</b>	<b>5.921238</b>
11.66667				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
 BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.2E-01 mean  
 Daily exposure (mg/kg-day) 1.4E+00 max

### Hazard Quotients

BTAG Low HQ: 6.6E+01 mean  
 BTAG High HQ: 1.0E-01 mean

BTAG Low HQ: 9.9E+01 max  
 BTAG High HQ: 1.6E-01 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total Mercury  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.130802  
 Maximum detected value (mg/kg, dry weight): 0.175676

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.5  
 Maximum detected value (mg/kg, dry weight): 2.5

Mercury	Total Solids		
0.026	14.8	100	0.148
0.015	12	100	0.12
0.018	14.8	100	0.148
0.017	15.7	100	0.157
0.017	13.8	100	0.138
<b>0.0186</b>			<b>0.1422 0.130802</b>
0.175676			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
 BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.5E-02 mean  
 Daily exposure (mg/kg-day) 1.9E-02 max

### Hazard Quotients

BTAG HQ: 3.8E-01 mean  
 BTAG HQ: 8.3E-02 mean

BTAG Low HQ: 4.8E-01 max  
 BTAG High HQ: 1.0E-01 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Nickel  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.362869  
 Maximum detected value (mg/kg, dry weight): 2.905405

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 23  
 Maximum detected value (mg/kg, dry weight): 23

Nickel	Total Solids			
0.29	14.8	100	0.148	
0.29	12	100	0.12	
0.43	14.8	100	0.148	
0.37	15.7	100	0.157	
0.3	13.8	100	0.138	
<b>0.336</b>			<b>0.1422</b>	<b>2.362869</b>
2.905405				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
 BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.3E-01 mean  
 Daily exposure (mg/kg-day) 2.8E-01 max

### Hazard Quotients

BTAG Low HQ: 1.7E-01 mean  
 BTAG High HQ: 4.1E-03 mean

BTAG Low HQ: 2.0E-01 max  
 BTAG High HQ: 4.9E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Selenium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.547117  
 Maximum detected value (mg/kg, dry weight): 2.027027

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1  
 Maximum detected value (mg/kg, dry weight): 1

Selenium	Total Solids			
0.2	14.8	100	0.148	
0.2	12	100	0.12	
0.3	14.8	100	0.148	
0.2	15.7	100	0.157	
0.2	13.8	100	0.138	
<b>0.22</b>			<b>0.1422</b>	<b>1.547117</b>
				2.027027

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
 BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.3E-01 mean  
 Daily exposure (mg/kg-day) 1.7E-01 max

### Hazard Quotients

BTAG Low HQ: 5.5E-01 mean  
 BTAG High HQ: 1.4E-01 mean

BTAG Low HQ: 7.2E-01 max  
 BTAG High HQ: 1.8E-01 max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Zinc  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 111.1111  
 Maximum detected value (mg/kg, dry weight): 121.0191

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 860  
 Maximum detected value (mg/kg, dry weight): 860

Zinc	Total Solids		
15	14.8	100	0.148
14	12	100	0.12
17	14.8	100	0.148
19	15.7	100	0.157
14	13.8	100	0.138
<b>15.8</b>			<b>0.1422 111.1111</b>
121.0191			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
 BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.0E+01 mean  
 Daily exposure (mg/kg-day) 1.1E+01 max

### Hazard Quotients

BTAG Low HQ: 6.1E-01 mean  
 BTAG High HQ: 6.1E-02 mean

BTAG Low HQ: 6.6E-01 max  
 BTAG High HQ: 6.6E-02 max

## Tier I - Summary of Hazard Quotients

**Receptor:** Western Grebe  
**Location:** SW08

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	5.5E-01	--	--	--	5.2E-01	--	--	--	--	--	--
LOAEL HQ:	5.5E-02	--	--	--	1.0E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	6.3E-01	9.1E-02	2.2E-01	#VALUE!	<b>2.2E+00</b>	<b>9.3E+01</b>	4.4E-01	1.6E-01	4.0E-01	5.6E-01
BTAG High HQ:	#VALUE!	4.4E-02	1.4E-03	5.5E-02	#VALUE!	9.9E-02	1.5E-01	9.5E-02	4.0E-03	9.9E-02	5.6E-02
<b>MAXIMUM</b>											
NOAEL HQ:	5.7E-01	--	--	--	5.9E-01	--	--	--	--	--	--
LOAEL HQ:	5.7E-02	--	--	--	1.2E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	7.1E-01	1.5E-01	2.2E-01	#VALUE!	<b>2.4E+00</b>	<b>1.2E+02</b>	5.0E-01	1.8E-01	5.2E-01	5.9E-01
BTAG High HQ:	#VALUE!	5.1E-02	2.3E-03	5.4E-02	#VALUE!	1.1E-01	1.9E-01	1.1E-01	4.5E-03	1.3E-01	5.9E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Benzo[a]pyrene  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.16737
Maximum detected value (mg/kg, dry weight):	1.210191

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.9
Maximum detected value (mg/kg, dry weight):	2.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.8E-02	mean
Daily exposure (mg/kg-day)	8.0E-02	max

### Hazard Quotients

NOAEL HQ:	5.5E-01	mean
LOAEL HQ:	5.5E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.7E-01	max
LOAEL HQ:	5.7E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total PCB Congeners  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.720816
Maximum detected value (mg/kg, dry weight):	0.859873

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	4
Maximum detected value (mg/kg, dry weight):	4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.6E-02	mean
Daily exposure (mg/kg-day)	6.4E-02	max

### Hazard Quotients

BTAG Low HQ:	6.3E-01	mean
BTAG High HQ:	4.4E-02	mean
BTAG Low HQ:	7.1E-01	max
BTAG High HQ:	5.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Tributyltin

**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.040788
Maximum detected value (mg/kg, dry weight):	1.75

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.9
Maximum detected value (mg/kg, dry weight):	1.9

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.7E-02	mean
Daily exposure (mg/kg-day)	1.1E-01	max

### Hazard Quotients

BTAG Low HQ:	9.1E-02	mean
BTAG High HQ:	1.4E-03	mean
BTAG Low HQ:	1.5E-01	max
BTAG High HQ:	2.3E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Arsenic  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.40928  
Maximum detected value (mg/kg, dry weight): 19.10828

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 26  
Maximum detected value (mg/kg, dry weight): 26

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E+00 mean  
Daily exposure (mg/kg-day) 1.2E+00 max

### Hazard Quotients

BTAG Low HQ: 2.2E-01 mean  
BTAG High HQ: 5.5E-02 mean

BTAG Low HQ: 2.2E-01 max  
BTAG High HQ: 5.4E-02 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Cadmium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.21519
Maximum detected value (mg/kg, dry weight):	0.235669

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.67
Maximum detected value (mg/kg, dry weight):	0.67

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-02	mean
Daily exposure (mg/kg-day)	1.6E-02	max

### Hazard Quotients

BTAG Low HQ:	1.9E-01	mean
BTAG High HQ:	1.4E-03	mean
BTAG Low HQ:	2.0E-01	max
BTAG High HQ:	1.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Chromium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.559775  
Maximum detected value (mg/kg, dry weight): 3.581081

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 78  
Maximum detected value (mg/kg, dry weight): 78

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.4E-01 mean  
Daily exposure (mg/kg-day) 5.0E-01 max

### Hazard Quotients

NOAEL HQ: 5.2E-01 mean  
LOAEL HQ: 1.0E-01 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 5.9E-01 max  
LOAEL HQ: 1.2E-01 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Copper

**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	23.20675
Maximum detected value (mg/kg, dry weight):	31.15942

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1000
Maximum detected value (mg/kg, dry weight):	1000

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.2E+00	mean
Daily exposure (mg/kg-day)	5.6E+00	max

### Hazard Quotients

BTAG Low HQ:	2.2E+00	mean
BTAG High HQ:	9.9E-02	mean

BTAG Low HQ:	2.4E+00	max
BTAG High HQ:	1.1E-01	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Lead  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	5.921238
Maximum detected value (mg/kg, dry weight):	11.66667

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	250
Maximum detected value (mg/kg, dry weight):	250

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E+00	mean
Daily exposure (mg/kg-day)	1.6E+00	max

### Hazard Quotients

BTAG Low HQ:	9.3E+01	mean
BTAG High HQ:	1.5E-01	mean
BTAG Low HQ:	1.2E+02	max
BTAG High HQ:	1.9E-01	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total Mercury  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.130802
Maximum detected value (mg/kg, dry weight):	0.175676

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.5
Maximum detected value (mg/kg, dry weight):	2.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	4.4E-01	mean
BTAG High HQ:	9.5E-02	mean
BTAG Low HQ:	5.0E-01	max
BTAG High HQ:	1.1E-01	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Nickel

**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.362869
Maximum detected value (mg/kg, dry weight):	2.905405

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	23
Maximum detected value (mg/kg, dry weight):	23

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.2E-01	mean
Daily exposure (mg/kg-day)	2.5E-01	max

### Hazard Quotients

BTAG Low HQ:	1.6E-01	mean
BTAG High HQ:	4.0E-03	mean

BTAG Low HQ:	1.8E-01	max
BTAG High HQ:	4.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Selenium  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.547117
Maximum detected value (mg/kg, dry weight):	2.027027

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.2E-02	mean
Daily exposure (mg/kg-day)	1.2E-01	max

### Hazard Quotients

BTAG Low HQ:	4.0E-01	mean
BTAG High HQ:	9.9E-02	mean
BTAG Low HQ:	5.2E-01	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Zinc  
**Location:** SW08

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	111.1111
Maximum detected value (mg/kg, dry weight):	121.0191

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	860
Maximum detected value (mg/kg, dry weight):	860

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.6E+00	mean
Daily exposure (mg/kg-day)	1.0E+01	max

### Hazard Quotients

BTAG Low HQ:	5.6E-01	mean
BTAG High HQ:	5.6E-02	mean
BTAG Low HQ:	5.9E-01	max
BTAG High HQ:	5.9E-02	max

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## Tier I - Summary of Hazard Quotients

**Receptor:** Surf Scoter  
**Location:** SW13

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	3.2E-01	--	--	--	4.1E-01	--	--	--	--	--	--
LOAEL HQ:	3.2E-02	--	--	--	8.2E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.8E-01	6.9E-02	2.1E-01	#VALUE!	<b>1.7E+00</b>	<b>3.2E+01</b>	2.2E-01	1.6E-01	4.8E-01	5.4E-01
BTAG High HQ:	#VALUE!	2.0E-02	1.1E-03	5.1E-02	#VALUE!	7.7E-02	5.1E-02	4.7E-02	3.9E-03	1.2E-01	5.4E-02
<b>MAXIMUM</b>											
NOAEL HQ:	3.8E-01	--	--	--	4.6E-01	--	--	--	--	--	--
LOAEL HQ:	3.8E-02	--	--	--	9.3E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	8.2E-01	7.4E-02	2.4E-01	#VALUE!	<b>2.0E+00</b>	<b>3.2E+01</b>	2.3E-01	1.7E-01	7.8E-01	6.1E-01
BTAG High HQ:	#VALUE!	5.8E-02	1.2E-03	6.0E-02	#VALUE!	8.8E-02	5.1E-02	5.0E-02	4.2E-03	1.9E-01	6.1E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Benzo[a]pyrene  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.722678
Maximum detected value (mg/kg, dry weight):	0.860927

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.4
Maximum detected value (mg/kg, dry weight):	1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.5E-02	mean
Daily exposure (mg/kg-day)	5.3E-02	max

### Hazard Quotients

NOAEL HQ:	3.2E-01	mean
LOAEL HQ:	3.2E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.8E-01	max
LOAEL HQ:	3.8E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total PCB Congeners  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.423907
Maximum detected value (mg/kg, dry weight):	1.292857

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.52
Maximum detected value (mg/kg, dry weight):	0.52

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.5E-02	mean
Daily exposure (mg/kg-day)	7.4E-02	max

### Hazard Quotients

BTAG Low HQ:	2.8E-01	mean
BTAG High HQ:	2.0E-02	mean
BTAG Low HQ:	8.2E-01	max
BTAG High HQ:	5.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Tributyltin  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.851093  
Maximum detected value (mg/kg, dry weight): 0.920245

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.79  
Maximum detected value (mg/kg, dry weight): 0.79

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.0E-02 mean  
Daily exposure (mg/kg-day) 5.4E-02 max

### Hazard Quotients

BTAG Low HQ: 6.9E-02 mean  
BTAG High HQ: 1.1E-03 mean

BTAG Low HQ: 7.4E-02 max  
BTAG High HQ: 1.2E-03 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Arsenic  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.39891  
Maximum detected value (mg/kg, dry weight): 22.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 15  
Maximum detected value (mg/kg, dry weight): 15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E+00 mean  
Daily exposure (mg/kg-day) 1.3E+00 max

### Hazard Quotients

BTAG Low HQ: 2.1E-01 mean  
BTAG High HQ: 5.1E-02 mean

BTAG Low HQ: 2.4E-01 max  
BTAG High HQ: 6.0E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Cadmium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.218579  
Maximum detected value (mg/kg, dry weight): 0.28481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.42  
Maximum detected value (mg/kg, dry weight): 0.42

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.4E-02 mean  
Daily exposure (mg/kg-day) 1.7E-02 max

### Hazard Quotients

BTAG Low HQ: 1.7E-01 mean  
BTAG High HQ: 1.3E-03 mean

BTAG Low HQ: 2.2E-01 max  
BTAG High HQ: 1.7E-03 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Chromium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.144809  
Maximum detected value (mg/kg, dry weight): 2.928571

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 72  
Maximum detected value (mg/kg, dry weight): 72

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.5E-01 mean  
Daily exposure (mg/kg-day) 4.0E-01 max

### Hazard Quotients

NOAEL HQ: 4.1E-01 mean  
LOAEL HQ: 8.2E-02 mean  
BTAG Low HQ: #VALUEI mean  
BTAG High HQ: #VALUEI mean

NOAEL HQ: 4.6E-01 max  
LOAEL HQ: 9.3E-02 max  
BTAG Low HQ: #VALUEI max  
BTAG High HQ: #VALUEI max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Copper  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	25
Maximum detected value (mg/kg, dry weight):	35.44304

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	800
Maximum detected value (mg/kg, dry weight):	800

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.0E+00	mean
Daily exposure (mg/kg-day)	4.6E+00	max

### Hazard Quotients

BTAG Low HQ:	1.7E+00	mean
BTAG High HQ:	7.7E-02	mean
BTAG Low HQ:	2.0E+00	max
BTAG High HQ:	8.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Lead  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.540984
Maximum detected value (mg/kg, dry weight):	2.638037

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	93
Maximum detected value (mg/kg, dry weight):	93

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.5E-01	mean
Daily exposure (mg/kg-day)	4.5E-01	max

### Hazard Quotients

BTAG Low HQ:	3.2E+01	mean
BTAG High HQ:	5.1E-02	mean
BTAG Low HQ:	3.2E+01	max
BTAG High HQ:	5.1E-02	max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total Mercury  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.101093
Maximum detected value (mg/kg, dry weight):	0.110429

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.86
Maximum detected value (mg/kg, dry weight):	0.86

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.5E-03	mean
Daily exposure (mg/kg-day)	9.0E-03	max

### Hazard Quotients

BTAG Low HQ:	2.2E-01	mean
BTAG High HQ:	4.7E-02	mean
BTAG Low HQ:	2.3E-01	max
BTAG High HQ:	5.0E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Nickel

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.568306
Maximum detected value (mg/kg, dry weight):	2.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	24
Maximum detected value (mg/kg, dry weight):	24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.2E-01	mean
Daily exposure (mg/kg-day)	2.3E-01	max

### Hazard Quotients

BTAG Low HQ:	1.6E-01	mean
BTAG High HQ:	3.9E-03	mean

BTAG Low HQ:	1.7E-01	max
BTAG High HQ:	4.2E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Selenium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.912568
Maximum detected value (mg/kg, dry weight):	3.164557

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-01	mean
Daily exposure (mg/kg-day)	1.8E-01	max

### Hazard Quotients

BTAG Low HQ:	4.8E-01	mean
BTAG High HQ:	1.2E-01	mean
BTAG Low HQ:	7.8E-01	max
BTAG High HQ:	1.9E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Zinc  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	131.1475
Maximum detected value (mg/kg, dry weight):	153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	580
Maximum detected value (mg/kg, dry weight):	580

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.2E+00	mean
Daily exposure (mg/kg-day)	1.0E+01	max

### Hazard Quotients

BTAG Low HQ:	5.4E-01	mean
BTAG High HQ:	5.4E-02	mean
BTAG Low HQ:	6.1E-01	max
BTAG High HQ:	6.1E-02	max

## Hazard Quotient Calculations Using Macoma Tissue

Receptor: Sea Lion  
 Location: SW13

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	--	--	--	--	2.9E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.4E-03	--	--	--	--	--	--
BTAG Low HQ:	1.3E-02	2.7E-02	7.7E-02	<b>1.4E+00</b>	#VALUE!	4.1E-01	1.2E-01	1.0E-01	5.5E-01	8.6E-01	3.4E-01
BTAG High HQ:	5.1E-04	7.6E-03	1.3E-03	9.3E-02	#VALUE!	1.7E-03	5.0E-04	1.0E-02	2.3E-03	3.5E-02	8.0E-03
<b>MAXIMUM</b>											
NOAEL HQ:	--	--	--	--	3.4E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.6E-03	--	--	--	--	--	--
BTAG Low HQ:	1.5E-02	8.0E-02	8.3E-02	1.6E+00	#VALUE!	5.0E-01	1.2E-01	1.1E-01	5.8E-01	<b>1.4E+00</b>	3.9E-01
BTAG High HQ:	6.1E-04	2.2E-02	1.4E-03	1.1E-01	#VALUE!	2.1E-03	5.0E-04	1.1E-02	2.5E-03	5.8E-02	9.2E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Benz[a]pyrene  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.722678  
Maximum detected value (mg/kg, dry weight): 0.860927

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.4  
Maximum detected value (mg/kg, dry weight): 1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.31  
BTAG High (mg/kg-day): 32.8

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.7E-02 mean  
Daily exposure (mg/kg-day) 2.0E-02 max

### Hazard Quotients

BTAG Low HQ: 1.3E-02 mean  
BTAG High HQ: 5.1E-04 mean

BTAG Low HQ: 1.5E-02 max  
BTAG High HQ: 6.1E-04 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total PCB Congeners  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.423907
Maximum detected value (mg/kg, dry weight):	1.292857

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.52
Maximum detected value (mg/kg, dry weight):	0.52

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.36
BTAG High (mg/kg-day):	1.28

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.7E-03	mean
Daily exposure (mg/kg-day)	2.9E-02	max

### Hazard Quotients

BTAG Low HQ:	2.7E-02	mean
BTAG High HQ:	7.6E-03	mean
BTAG Low HQ:	8.0E-02	max
BTAG High HQ:	2.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Tributyltin  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.851093  
Maximum detected value (mg/kg, dry weight): 0.920245

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.79  
Maximum detected value (mg/kg, dry weight): 0.79

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.25  
BTAG High (mg/kg-day): 15

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.9E-02 mean  
Daily exposure (mg/kg-day) 2.1E-02 max

### Hazard Quotients

BTAG Low HQ: 7.7E-02 mean  
BTAG High HQ: 1.3E-03 mean

BTAG Low HQ: 8.3E-02 max  
BTAG High HQ: 1.4E-03 max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Arsenic  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.39891  
Maximum detected value (mg/kg, dry weight): 22.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 15  
Maximum detected value (mg/kg, dry weight): 15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.32  
BTAG High (mg/kg-day): 4.7

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.4E-01 mean  
Daily exposure (mg/kg-day) 5.1E-01 max

### Hazard Quotients

BTAG Low HQ: 1.4E+00 mean  
BTAG High HQ: 9.3E-02 mean

BTAG Low HQ: 1.6E+00 max  
BTAG High HQ: 1.1E-01 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Cadmium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.218579
Maximum detected value (mg/kg, dry weight):	0.28481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.42
Maximum detected value (mg/kg, dry weight):	0.42

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.06
BTAG High (mg/kg-day):	2.64

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.1E-03	mean
Daily exposure (mg/kg-day)	6.6E-03	max

### Hazard Quotients

BTAG Low HQ:	8.5E-02	mean
BTAG High HQ:	1.9E-03	mean
BTAG Low HQ:	1.1E-01	max
BTAG High HQ:	2.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Chromium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.144809
Maximum detected value (mg/kg, dry weight):	2.928571

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	72
Maximum detected value (mg/kg, dry weight):	72

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	3.3
LOAEL (mg/kg-day):	69
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.6E-02	mean
Daily exposure (mg/kg-day)	1.1E-01	max

### Hazard Quotients

NOAEL HQ:	2.9E-02	mean
LOAEL HQ:	1.4E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.4E-02	max
LOAEL HQ:	1.6E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Copper  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 25  
Maximum detected value (mg/kg, dry weight): 35.44304

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 800  
Maximum detected value (mg/kg, dry weight): 800

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.67  
BTAG High (mg/kg-day): 632

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E+00 mean  
Daily exposure (mg/kg-day) 1.3E+00 max

### Hazard Quotients

BTAG Low HQ: 4.1E-01 mean  
BTAG High HQ: 1.7E-03 mean

BTAG Low HQ: 5.0E-01 max  
BTAG High HQ: 2.1E-03 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Lead  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.540984
Maximum detected value (mg/kg, dry weight):	2.638037

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	93
Maximum detected value (mg/kg, dry weight):	93

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1
BTAG High (mg/kg-day):	241

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-01	mean
Daily exposure (mg/kg-day)	1.2E-01	max

### Hazard Quotients

BTAG Low HQ:	1.2E-01	mean
BTAG High HQ:	5.0E-04	mean
BTAG Low HQ:	1.2E-01	max
BTAG High HQ:	5.0E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total Mercury  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.101093  
Maximum detected value (mg/kg, dry weight): 0.110429

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.86  
Maximum detected value (mg/kg, dry weight): 0.86

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.027  
BTAG High (mg/kg-day): 0.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.8E-03 mean  
Daily exposure (mg/kg-day) 3.0E-03 max

### Hazard Quotients

BTAG Low HQ: 1.0E-01 mean  
BTAG High HQ: 1.0E-02 mean

BTAG Low HQ: 1.1E-01 max  
BTAG High HQ: 1.1E-02 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Nickel  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.568306  
Maximum detected value (mg/kg, dry weight): 2.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 24  
Maximum detected value (mg/kg, dry weight): 24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.133  
BTAG High (mg/kg-day): 31.6

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.3E-02 mean  
Daily exposure (mg/kg-day) 7.8E-02 max

### Hazard Quotients

BTAG Low HQ: 5.5E-01 mean  
BTAG High HQ: 2.3E-03 mean

BTAG Low HQ: 5.8E-01 max  
BTAG High HQ: 2.5E-03 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Selenium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.912568
Maximum detected value (mg/kg, dry weight):	3.164557

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.05
BTAG High (mg/kg-day):	1.21

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.3E-02	mean
Daily exposure (mg/kg-day)	7.0E-02	max

### Hazard Quotients

BTAG Low HQ:	8.6E-01	mean
BTAG High HQ:	3.5E-02	mean
BTAG Low HQ:	1.4E+00	max
BTAG High HQ:	5.8E-02	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Zinc  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	131.1475
Maximum detected value (mg/kg, dry weight):	153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	580
Maximum detected value (mg/kg, dry weight):	580

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	9.6
BTAG High (mg/kg-day):	411

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.3E+00	mean
Daily exposure (mg/kg-day)	3.8E+00	max

### Hazard Quotients

BTAG Low HQ:	3.4E-01	mean
BTAG High HQ:	8.0E-03	mean
BTAG Low HQ:	3.9E-01	max
BTAG High HQ:	9.2E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor: CA Least Tern**  
**Location: SW13**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	6.6E-01	--	--	--	5.6E-01	--	--	--	--	--	--
LOAEL HQ:	6.6E-02	--	--	--	1.1E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	5.9E-01	1.5E-01	4.4E-01	#VALUE!	<b>2.4E+00</b>	<b>4.2E+01</b>	3.8E-01	2.8E-01	<b>1.0E+00</b>	<b>1.0E+00</b>
BTAG High HQ:	#VALUE!	4.2E-02	2.3E-03	1.1E-01	#VALUE!	1.1E-01	6.8E-02	8.3E-02	6.9E-03	2.5E-01	1.0E-01
<b>MAXIMUM</b>											
NOAEL HQ:	7.8E-01	--	--	--	6.7E-01	--	--	--	--	--	--
LOAEL HQ:	7.8E-02	--	--	--	1.3E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	<b>1.8E+00</b>	1.6E-01	5.1E-01	#VALUE!	<b>2.9E+00</b>	<b>4.3E+01</b>	4.1E-01	3.0E-01	<b>1.7E+00</b>	<b>1.2E+00</b>
BTAG High HQ:	#VALUE!	1.3E-01	2.5E-03	1.3E-01	#VALUE!	1.3E-01	6.9E-02	9.0E-02	7.3E-03	4.2E-01	1.2E-01

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Benzo[a]pyrene  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.722678
Maximum detected value (mg/kg, dry weight):	0.860927

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.4
Maximum detected value (mg/kg, dry weight):	1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.3E-02	mean
Daily exposure (mg/kg-day)	1.1E-01	max

### Hazard Quotients

NOAEL HQ:	6.6E-01	mean
LOAEL HQ:	6.6E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	7.8E-01	max
LOAEL HQ:	7.8E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total PCB Congeners  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.423907
Maximum detected value (mg/kg, dry weight):	1.292857

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.52
Maximum detected value (mg/kg, dry weight):	0.52

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.3E-02	mean
Daily exposure (mg/kg-day)	1.6E-01	max

### Hazard Quotients

BTAG Low HQ:	5.9E-01	mean
BTAG High HQ:	4.2E-02	mean
BTAG Low HQ:	1.8E+00	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Tributyltin  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.851093  
Maximum detected value (mg/kg, dry weight): 0.920245

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.79  
Maximum detected value (mg/kg, dry weight): 0.79

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E-01 mean  
Daily exposure (mg/kg-day) 1.1E-01 max

### Hazard Quotients

BTAG Low HQ: 1.5E-01 mean  
BTAG High HQ: 2.3E-03 mean

BTAG Low HQ: 1.6E-01 max  
BTAG High HQ: 2.5E-03 max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Arsenic  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.39891
Maximum detected value (mg/kg, dry weight):	22.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E+00	mean
Daily exposure (mg/kg-day)	2.8E+00	max

### Hazard Quotients

BTAG Low HQ:	4.4E-01	mean
BTAG High HQ:	1.1E-01	mean
BTAG Low HQ:	5.1E-01	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Cadmium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.218579
Maximum detected value (mg/kg, dry weight):	0.28481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.42
Maximum detected value (mg/kg, dry weight):	0.42

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.8E-02	mean
Daily exposure (mg/kg-day)	3.6E-02	max

### Hazard Quotients

BTAG Low HQ:	3.5E-01	mean
BTAG High HQ:	2.7E-03	mean
BTAG Low HQ:	4.5E-01	max
BTAG High HQ:	3.5E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Chromium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.144809
Maximum detected value (mg/kg, dry weight):	2.928571

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	72
Maximum detected value (mg/kg, dry weight):	72

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.8E-01	mean
Daily exposure (mg/kg-day)	5.8E-01	max

### Hazard Quotients

NOAEL HQ:	5.6E-01	mean
LOAEL HQ:	1.1E-01	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	6.7E-01	max
LOAEL HQ:	1.3E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Copper  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	25
Maximum detected value (mg/kg, dry weight):	35.44304

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	800
Maximum detected value (mg/kg, dry weight):	800

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.5E+00	mean
Daily exposure (mg/kg-day)	6.8E+00	max

### Hazard Quotients

BTAG Low HQ:	2.4E+00	mean
BTAG High HQ:	1.1E-01	mean
BTAG Low HQ:	2.9E+00	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Lead

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.540984
Maximum detected value (mg/kg, dry weight):	2.638037

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	93
Maximum detected value (mg/kg, dry weight):	93

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.9E-01	mean
Daily exposure (mg/kg-day)	6.1E-01	max

### Hazard Quotients

BTAG Low HQ:	4.2E+01	mean
BTAG High HQ:	6.8E-02	mean
BTAG Low HQ:	4.3E+01	max
BTAG High HQ:	6.9E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total Mercury  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.101093
Maximum detected value (mg/kg, dry weight):	0.110429

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.86
Maximum detected value (mg/kg, dry weight):	0.86

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-02	mean
Daily exposure (mg/kg-day)	1.6E-02	max

### Hazard Quotients

BTAG Low HQ:	3.8E-01	mean
BTAG High HQ:	8.3E-02	mean
BTAG Low HQ:	4.1E-01	max
BTAG High HQ:	9.0E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Nickel

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.568306
Maximum detected value (mg/kg, dry weight):	2.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	24
Maximum detected value (mg/kg, dry weight):	24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.9E-01	mean
Daily exposure (mg/kg-day)	4.1E-01	max

### Hazard Quotients

BTAG Low HQ:	2.8E-01	mean
BTAG High HQ:	6.9E-03	mean

BTAG Low HQ:	3.0E-01	max
BTAG High HQ:	7.3E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Selenium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.912568
Maximum detected value (mg/kg, dry weight):	3.164557

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-01	mean
Daily exposure (mg/kg-day)	3.9E-01	max

### Hazard Quotients

BTAG Low HQ:	1.0E+00	mean
BTAG High HQ:	2.5E-01	mean
BTAG Low HQ:	1.7E+00	max
BTAG High HQ:	4.2E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Zinc  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 131.1475  
Maximum detected value (mg/kg, dry weight): 153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 580  
Maximum detected value (mg/kg, dry weight): 580

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.8E+01 mean  
Daily exposure (mg/kg-day) 2.1E+01 max

### Hazard Quotients

BTAG Low HQ: 1.0E+00 mean  
BTAG High HQ: 1.0E-01 mean

BTAG Low HQ: 1.2E+00 max  
BTAG High HQ: 1.2E-01 max

## Tier I - Summary of Hazard Quotients

**Receptor:** Green Turtle  
**Location:** SW13

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	1.9E-02	--	--	--	2.5E-02	--	--	--	--	--	--
LOAEL HQ:	1.9E-03	--	--	--	4.9E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	1.7E-02	4.0E-03	1.2E-02	#VALUE!	1.0E-01	<b>1.9E+00</b>	1.3E-02	9.5E-03	2.8E-02	3.1E-02
BTAG High HQ:	#VALUE!	1.2E-03	6.4E-05	3.0E-03	#VALUE!	4.6E-03	3.0E-03	2.8E-03	2.3E-04	6.9E-03	3.1E-03
<b>MAXIMUM</b>											
NOAEL HQ:	2.2E-02	--	--	--	2.8E-02	--	--	--	--	--	--
LOAEL HQ:	2.2E-03	--	--	--	5.5E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	4.8E-02	4.3E-03	1.4E-02	#VALUE!	1.2E-01	<b>1.9E+00</b>	1.4E-02	1.0E-02	4.6E-02	3.6E-02
BTAG High HQ:	#VALUE!	3.4E-03	6.9E-05	3.5E-03	#VALUE!	5.2E-03	3.1E-03	2.9E-03	2.4E-04	1.1E-02	3.6E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Benzol[a]pyrene  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.722678  
Maximum detected value (mg/kg, dry weight): 0.860927

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.4  
Maximum detected value (mg/kg, dry weight): 1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.6E-03 mean  
Daily exposure (mg/kg-day) 3.1E-03 max

### Hazard Quotients

NOAEL HQ: 1.9E-02 mean  
LOAEL HQ: 1.9E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 2.2E-02 max  
LOAEL HQ: 2.2E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max



## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total PCB Congeners  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.423907
Maximum detected value (mg/kg, dry weight):	1.292857

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.52
Maximum detected value (mg/kg, dry weight):	0.52

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-03	mean
Daily exposure (mg/kg-day)	4.3E-03	max

### Hazard Quotients

BTAG Low HQ:	1.7E-02	mean
BTAG High HQ:	1.2E-03	mean
BTAG Low HQ:	4.8E-02	max
BTAG High HQ:	3.4E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Tributyltin  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.851093  
Maximum detected value (mg/kg, dry weight): 0.920245

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.79  
Maximum detected value (mg/kg, dry weight): 0.79

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.9E-03 mean  
Daily exposure (mg/kg-day) 3.2E-03 max

### Hazard Quotients

BTAG Low HQ: 4.0E-03 mean  
BTAG High HQ: 6.4E-05 mean

BTAG Low HQ: 4.3E-03 max  
BTAG High HQ: 6.9E-05 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Arsenic  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.39891
Maximum detected value (mg/kg, dry weight):	22.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.6E-02	mean
Daily exposure (mg/kg-day)	7.7E-02	max

### Hazard Quotients

BTAG Low HQ:	1.2E-02	mean
BTAG High HQ:	3.0E-03	mean
BTAG Low HQ:	1.4E-02	max
BTAG High HQ:	3.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Cadmium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.218579  
Maximum detected value (mg/kg, dry weight): 0.28481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.42  
Maximum detected value (mg/kg, dry weight): 0.42

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 8.0E-04 mean  
Daily exposure (mg/kg-day) 1.0E-03 max

### Hazard Quotients

BTAG Low HQ: 9.9E-03 mean  
BTAG High HQ: 7.6E-05 mean

BTAG Low HQ: 1.3E-02 max  
BTAG High HQ: 9.7E-05 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Chromium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.144809  
Maximum detected value (mg/kg, dry weight): 2.928571

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 72  
Maximum detected value (mg/kg, dry weight): 72

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.1E-02 mean  
Daily exposure (mg/kg-day) 2.4E-02 max

### Hazard Quotients

NOAEL HQ: 2.5E-02 mean  
LOAEL HQ: 4.9E-03 mean  
BTAG Low HQ: #VALUEI mean  
BTAG High HQ: #VALUEI mean

NOAEL HQ: 2.8E-02 max  
LOAEL HQ: 5.5E-03 max  
BTAG Low HQ: #VALUEI max  
BTAG High HQ: #VALUEI max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Copper

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	25
Maximum detected value (mg/kg, dry weight):	35.44304

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	800
Maximum detected value (mg/kg, dry weight):	800

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-01	mean
Daily exposure (mg/kg-day)	2.7E-01	max

### Hazard Quotients

BTAG Low HQ:	1.0E-01	mean
BTAG High HQ:	4.6E-03	mean

BTAG Low HQ:	1.2E-01	max
BTAG High HQ:	5.2E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Lead

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.540984
Maximum detected value (mg/kg, dry weight):	2.638037

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	93
Maximum detected value (mg/kg, dry weight):	93

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.7E-02	mean
Daily exposure (mg/kg-day)	2.7E-02	max

### Hazard Quotients

BTAG Low HQ:	1.9E+00	mean
BTAG High HQ:	3.0E-03	mean
BTAG Low HQ:	1.9E+00	max
BTAG High HQ:	3.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total Mercury  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.101093  
Maximum detected value (mg/kg, dry weight): 0.110429

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.86  
Maximum detected value (mg/kg, dry weight): 0.86

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.0E-04 mean  
Daily exposure (mg/kg-day) 5.3E-04 max

### Hazard Quotients

BTAG Low HQ: 1.3E-02 mean  
BTAG High HQ: 2.8E-03 mean

BTAG Low HQ: 1.4E-02 max  
BTAG High HQ: 2.9E-03 max



## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Nickel

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.568306
Maximum detected value (mg/kg, dry weight):	2.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	24
Maximum detected value (mg/kg, dry weight):	24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-02	mean
Daily exposure (mg/kg-day)	1.4E-02	max

### Hazard Quotients

BTAG Low HQ:	9.5E-03	mean
BTAG High HQ:	2.3E-04	mean
BTAG Low HQ:	1.0E-02	max
BTAG High HQ:	2.4E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Selenium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.912568
Maximum detected value (mg/kg, dry weight):	3.164557

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.5E-03	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	2.8E-02	mean
BTAG High HQ:	6.9E-03	mean
BTAG Low HQ:	4.6E-02	max
BTAG High HQ:	1.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Zinc  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	131.1475
Maximum detected value (mg/kg, dry weight):	153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	580
Maximum detected value (mg/kg, dry weight):	580

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.4E-01	mean
Daily exposure (mg/kg-day)	6.1E-01	max

### Hazard Quotients

BTAG Low HQ:	3.1E-02	mean
BTAG High HQ:	3.1E-03	mean
BTAG Low HQ:	3.6E-02	max
BTAG High HQ:	3.6E-03	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Zinc  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 131.1475  
 Maximum detected value (mg/kg, dry weight): 153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 580  
 Maximum detected value (mg/kg, dry weight): 580

Zinc	Total Solids			
17	12	100	0.12	
24	15.8	100	0.158	
25	16.3	100	0.163	
16	14	100	0.14	
14	15.1	100	0.151	
<b>19.2</b>			<b>0.1464</b>	<b>131.1475</b>
153.3742				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
 BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E+01 mean  
 Daily exposure (mg/kg-day) 1.3E+01 max

### Hazard Quotients

BTAG Low HQ: 6.8E-01 mean  
 BTAG High HQ: 6.8E-02 mean

BTAG Low HQ: 7.8E-01 max  
 BTAG High HQ: 7.8E-02 max

## Tier I - Summary of Hazard Quotients

**Receptor:** Western Grebe  
**Location:** SW13

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	3.3E-01	--	--	--	4.6E-01	--	--	--	--	--	--
LOAEL HQ:	3.3E-02	--	--	--	9.3E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	2.9E-01	7.1E-02	2.1E-01	#VALUE!	<b>2.0E+00</b>	<b>3.6E+01</b>	2.3E-01	1.7E-01	4.9E-01	5.6E-01
BTAG High HQ:	#VALUE!	2.1E-02	1.1E-03	5.3E-02	#VALUE!	8.6E-02	5.7E-02	5.0E-02	4.2E-03	1.2E-01	5.6E-02
<b>MAXIMUM</b>											
NOAEL HQ:	3.9E-01	--	--	--	5.2E-01	--	--	--	--	--	--
LOAEL HQ:	3.9E-02	--	--	--	1.0E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	8.4E-01	7.6E-02	2.5E-01	#VALUE!	<b>2.2E+00</b>	<b>3.6E+01</b>	2.5E-01	1.8E-01	8.0E-01	6.4E-01
BTAG High HQ:	#VALUE!	6.0E-02	1.2E-03	6.2E-02	#VALUE!	9.7E-02	5.8E-02	5.3E-02	4.5E-03	2.0E-01	6.4E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Benzo[a]pyrene  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.722678
Maximum detected value (mg/kg, dry weight):	0.860927

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.4
Maximum detected value (mg/kg, dry weight):	1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.7E-02	mean
Daily exposure (mg/kg-day)	5.4E-02	max

### Hazard Quotients

NOAEL HQ:	3.3E-01	mean
LOAEL HQ:	3.3E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.9E-01	max
LOAEL HQ:	3.9E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total PCB Congeners  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.423907
Maximum detected value (mg/kg, dry weight):	1.292857

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.52
Maximum detected value (mg/kg, dry weight):	0.52

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E-02	mean
Daily exposure (mg/kg-day)	7.6E-02	max

### Hazard Quotients

BTAG Low HQ:	2.9E-01	mean
BTAG High HQ:	2.1E-02	mean
BTAG Low HQ:	8.4E-01	max
BTAG High HQ:	6.0E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Tributyltin  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.851093  
Maximum detected value (mg/kg, dry weight): 0.920245

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.79  
Maximum detected value (mg/kg, dry weight): 0.79

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.1E-02 mean  
Daily exposure (mg/kg-day) 5.5E-02 max

### Hazard Quotients

BTAG Low HQ: 7.1E-02 mean  
BTAG High HQ: 1.1E-03 mean

BTAG Low HQ: 7.6E-02 max  
BTAG High HQ: 1.2E-03 max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Arsenic

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.39891
Maximum detected value (mg/kg, dry weight):	22.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E+00	mean
Daily exposure (mg/kg-day)	1.4E+00	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	5.3E-02	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	6.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Cadmium

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.218579
Maximum detected value (mg/kg, dry weight):	0.28481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.42
Maximum detected value (mg/kg, dry weight):	0.42

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.4E-02	mean
Daily exposure (mg/kg-day)	1.8E-02	max

### Hazard Quotients

BTAG Low HQ:	1.8E-01	mean
BTAG High HQ:	1.4E-03	mean
BTAG Low HQ:	2.2E-01	max
BTAG High HQ:	1.7E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Chromium  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.144809
Maximum detected value (mg/kg, dry weight):	2.928571

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	72
Maximum detected value (mg/kg, dry weight):	72

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.0E-01	mean
Daily exposure (mg/kg-day)	4.4E-01	max

### Hazard Quotients

NOAEL HQ:	4.6E-01	mean
LOAEL HQ:	9.3E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.2E-01	max
LOAEL HQ:	1.0E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Copper

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	25
Maximum detected value (mg/kg, dry weight):	35.44304

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	800
Maximum detected value (mg/kg, dry weight):	800

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.5E+00	mean
Daily exposure (mg/kg-day)	5.1E+00	max

### Hazard Quotients

BTAG Low HQ:	2.0E+00	mean
BTAG High HQ:	8.6E-02	mean
BTAG Low HQ:	2.2E+00	max
BTAG High HQ:	9.7E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Lead

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.540984  
Maximum detected value (mg/kg, dry weight): 2.638037

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 93  
Maximum detected value (mg/kg, dry weight): 93

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.0E-01 mean  
Daily exposure (mg/kg-day) 5.1E-01 max

### Hazard Quotients

BTAG Low HQ: 3.6E+01 mean  
BTAG High HQ: 5.7E-02 mean

BTAG Low HQ: 3.6E+01 max  
BTAG High HQ: 5.8E-02 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total Mercury  
**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.101093  
Maximum detected value (mg/kg, dry weight): 0.110429

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.86  
Maximum detected value (mg/kg, dry weight): 0.86

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.1E-03 mean  
Daily exposure (mg/kg-day) 9.6E-03 max

### Hazard Quotients

BTAG Low HQ: 2.3E-01 mean  
BTAG High HQ: 5.0E-02 mean

BTAG Low HQ: 2.5E-01 max  
BTAG High HQ: 5.3E-02 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Nickel

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.568306
Maximum detected value (mg/kg, dry weight):	2.78481

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	24
Maximum detected value (mg/kg, dry weight):	24

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E-01	mean
Daily exposure (mg/kg-day)	2.5E-01	max

### Hazard Quotients

BTAG Low HQ:	1.7E-01	mean
BTAG High HQ:	4.2E-03	mean

BTAG Low HQ:	1.8E-01	max
BTAG High HQ:	4.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Selenium

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.912568
Maximum detected value (mg/kg, dry weight):	3.164557

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-01	mean
Daily exposure (mg/kg-day)	1.8E-01	max

### Hazard Quotients

BTAG Low HQ:	4.9E-01	mean
BTAG High HQ:	1.2E-01	mean

BTAG Low HQ:	8.0E-01	max
BTAG High HQ:	2.0E-01	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Zinc

**Location:** SW13

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	131.1475
Maximum detected value (mg/kg, dry weight):	153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	580
Maximum detected value (mg/kg, dry weight):	580

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.7E+00	mean
Daily exposure (mg/kg-day)	1.1E+01	max

### Hazard Quotients

BTAG Low HQ:	5.6E-01	mean
BTAG High HQ:	5.6E-02	mean
BTAG Low HQ:	6.4E-01	max
BTAG High HQ:	6.4E-02	max

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## Tier I - Summary of Hazard Quotients

**Receptor:** Surf Scoter  
**Location:** SW21

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	4.1E-01	--	--	--	4.3E-01	--	--	--	--	--	--
LOAEL HQ:	4.1E-02	--	--	--	8.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	7.6E-01	9.2E-03	2.2E-01	#VALUE!	7.6E-01	<b>4.5E+01</b>	2.7E-01	1.3E-01	4.7E-01	4.9E-01
BTAG High HQ:	#VALUE!	5.4E-02	1.5E-04	5.4E-02	#VALUE!	3.4E-02	7.2E-02	5.8E-02	3.2E-03	1.2E-01	4.9E-02
<b>MAXIMUM</b>											
NOAEL HQ:	4.9E-01	--	--	--	5.7E-01	--	--	--	--	--	--
LOAEL HQ:	4.9E-02	--	--	--	1.1E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	8.7E-01	1.5E-02	2.4E-01	#VALUE!	9.6E-01	<b>5.6E+01</b>	2.8E-01	1.3E-01	7.7E-01	5.4E-01
BTAG High HQ:	#VALUE!	6.1E-02	2.4E-04	5.9E-02	#VALUE!	4.2E-02	9.0E-02	6.1E-02	3.3E-03	1.9E-01	5.4E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Benzol[a]pyrene  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.928668  
Maximum detected value (mg/kg, dry weight): 1.146497

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.5  
Maximum detected value (mg/kg, dry weight): 1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.7E-02 mean  
Daily exposure (mg/kg-day) 6.9E-02 max

### Hazard Quotients

NOAEL HQ: 4.1E-01 mean  
LOAEL HQ: 4.1E-02 mean  
BTAG Low HQ: #VALUEI mean  
BTAG High HQ: #VALUEI mean

NOAEL HQ: 4.9E-01 max  
LOAEL HQ: 4.9E-02 max  
BTAG Low HQ: #VALUEI max  
BTAG High HQ: #VALUEI max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total PCB Congeners  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.024226
Maximum detected value (mg/kg, dry weight):	1.19863

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.4
Maximum detected value (mg/kg, dry weight):	3.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.8E-02	mean
Daily exposure (mg/kg-day)	7.8E-02	max

### Hazard Quotients

BTAG Low HQ:	7.6E-01	mean
BTAG High HQ:	5.4E-02	mean
BTAG Low HQ:	8.7E-01	max
BTAG High HQ:	6.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Tributyltin  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.110363
Maximum detected value (mg/kg, dry weight):	0.1875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.17
Maximum detected value (mg/kg, dry weight):	0.17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.7E-03	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	9.2E-03	mean
BTAG High HQ:	1.5E-04	mean
BTAG Low HQ:	1.5E-02	max
BTAG High HQ:	2.4E-04	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Arsenic  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	20.72678
Maximum detected value (mg/kg, dry weight):	22.56098

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	11
Maximum detected value (mg/kg, dry weight):	11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E+00	mean
Daily exposure (mg/kg-day)	1.3E+00	max

### Hazard Quotients

BTAG Low HQ:	2.2E-01	mean
BTAG High HQ:	5.4E-02	mean
BTAG Low HQ:	2.4E-01	max
BTAG High HQ:	5.9E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Cadmium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.273217
Maximum detected value (mg/kg, dry weight):	0.323171

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.51
Maximum detected value (mg/kg, dry weight):	0.51

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	1.6E-03	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	1.9E-03	max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Chromium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.597577
Maximum detected value (mg/kg, dry weight):	4.6875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	70
Maximum detected value (mg/kg, dry weight):	70

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.7E-01	mean
Daily exposure (mg/kg-day)	4.9E-01	max

### Hazard Quotients

NOAEL HQ:	4.3E-01	mean
LOAEL HQ:	8.7E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.7E-01	max
LOAEL HQ:	1.1E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Copper  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 16.28533  
Maximum detected value (mg/kg, dry weight): 24.21875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 260  
Maximum detected value (mg/kg, dry weight): 260

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.8E+00 mean  
Daily exposure (mg/kg-day) 2.2E+00 max

### Hazard Quotients

BTAG Low HQ: 7.6E-01 mean  
BTAG High HQ: 3.4E-02 mean

BTAG Low HQ: 9.6E-01 max  
BTAG High HQ: 4.2E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Lead  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	4.253028
Maximum detected value (mg/kg, dry weight):	7.03125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	120
Maximum detected value (mg/kg, dry weight):	120

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.3E-01	mean
Daily exposure (mg/kg-day)	7.8E-01	max

### Hazard Quotients

BTAG Low HQ:	4.5E+01	mean
BTAG High HQ:	7.2E-02	mean
BTAG Low HQ:	5.6E+01	max
BTAG High HQ:	9.0E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total Mercury  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.106326
Maximum detected value (mg/kg, dry weight):	0.116438

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.4
Maximum detected value (mg/kg, dry weight):	1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-02	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	2.7E-01	mean
BTAG High HQ:	5.8E-02	mean
BTAG Low HQ:	2.8E-01	max
BTAG High HQ:	6.1E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Nickel  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.43607  
Maximum detected value (mg/kg, dry weight): 2.5

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 14  
Maximum detected value (mg/kg, dry weight): 14

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.8E-01 mean  
Daily exposure (mg/kg-day) 1.9E-01 max

### Hazard Quotients

BTAG Low HQ: 1.3E-01 mean  
BTAG High HQ: 3.2E-03 mean

BTAG Low HQ: 1.3E-01 max  
BTAG High HQ: 3.3E-03 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Selenium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.884253
Maximum detected value (mg/kg, dry weight):	3.125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-01	mean
Daily exposure (mg/kg-day)	1.8E-01	max

### Hazard Quotients

BTAG Low HQ:	4.7E-01	mean
BTAG High HQ:	1.2E-01	mean
BTAG Low HQ:	7.7E-01	max
BTAG High HQ:	1.9E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Zinc  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.5518
Maximum detected value (mg/kg, dry weight):	146.3415

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.4E+00	mean
Daily exposure (mg/kg-day)	9.3E+00	max

### Hazard Quotients

BTAG Low HQ:	4.9E-01	mean
BTAG High HQ:	4.9E-02	mean
BTAG Low HQ:	5.4E-01	max
BTAG High HQ:	5.4E-02	max

## Tier I - Summary of Hazard Quotients

**Receptor:** Sea Lion  
**Location:** SW21

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	--	--	--	--	3.2E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.5E-03	--	--	--	--	--	--
BTAG Low HQ:	1.6E-02	6.9E-02	1.0E-02	<b>1.4E+00</b>	#VALUE!	2.0E-01	1.8E-01	1.2E-01	4.8E-01	8.4E-01	3.2E-01
BTAG High HQ:	6.5E-04	1.9E-02	1.7E-04	9.9E-02	#VALUE!	8.5E-04	7.3E-04	1.2E-02	2.0E-03	3.5E-02	7.5E-03
<b>MAXIMUM</b>											
NOAEL HQ:	--	--	--	--	4.6E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	2.2E-03	--	--	--	--	--	--
BTAG Low HQ:	2.0E-02	8.0E-02	1.7E-02	<b>1.6E+00</b>	#VALUE!	2.7E-01	2.4E-01	1.3E-01	4.9E-01	<b>1.4E+00</b>	3.6E-01
BTAG High HQ:	8.0E-04	2.2E-02	2.8E-04	1.1E-01	#VALUE!	1.1E-03	9.8E-04	1.3E-02	2.0E-03	5.7E-02	8.4E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Benzol[a]pyrene  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.928668  
Maximum detected value (mg/kg, dry weight): 1.146497

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.5  
Maximum detected value (mg/kg, dry weight): 1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.31  
BTAG High (mg/kg-day): 32.8

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.1E-02 mean  
Daily exposure (mg/kg-day) 2.6E-02 max

### Hazard Quotients

BTAG Low HQ: 1.6E-02 mean  
BTAG High HQ: 6.5E-04 mean

BTAG Low HQ: 2.0E-02 max  
BTAG High HQ: 8.0E-04 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total PCB Congeners  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.024226
Maximum detected value (mg/kg, dry weight):	1.19863

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.4
Maximum detected value (mg/kg, dry weight):	3.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.36
BTAG High (mg/kg-day):	1.28

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.5E-02	mean
Daily exposure (mg/kg-day)	2.9E-02	max

### Hazard Quotients

BTAG Low HQ:	6.9E-02	mean
BTAG High HQ:	1.9E-02	mean

BTAG Low HQ:	8.0E-02	max
BTAG High HQ:	2.2E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Tributyltin  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.110363  
Maximum detected value (mg/kg, dry weight): 0.1875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.17  
Maximum detected value (mg/kg, dry weight): 0.17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.25  
BTAG High (mg/kg-day): 15

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.5E-03 mean  
Daily exposure (mg/kg-day) 4.2E-03 max

### Hazard Quotients

BTAG Low HQ: 1.0E-02 mean  
BTAG High HQ: 1.7E-04 mean

BTAG Low HQ: 1.7E-02 max  
BTAG High HQ: 2.8E-04 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Arsenic  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	20.72678
Maximum detected value (mg/kg, dry weight):	22.56098

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	11
Maximum detected value (mg/kg, dry weight):	11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.32
BTAG High (mg/kg-day):	4.7

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.6E-01	mean
Daily exposure (mg/kg-day)	5.0E-01	max

### Hazard Quotients

BTAG Low HQ:	1.4E+00	mean
BTAG High HQ:	9.9E-02	mean
BTAG Low HQ:	1.6E+00	max
BTAG High HQ:	1.1E-01	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Cadmium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.273217
Maximum detected value (mg/kg, dry weight):	0.323171

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.51
Maximum detected value (mg/kg, dry weight):	0.51

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.06
BTAG High (mg/kg-day):	2.64

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.4E-03	mean
Daily exposure (mg/kg-day)	7.5E-03	max

### Hazard Quotients

BTAG Low HQ:	1.1E-01	mean
BTAG High HQ:	2.4E-03	mean
BTAG Low HQ:	1.2E-01	max
BTAG High HQ:	2.8E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Chromium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.597577
Maximum detected value (mg/kg, dry weight):	4.6875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	70
Maximum detected value (mg/kg, dry weight):	70

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	3.3
LOAEL (mg/kg-day):	69
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-01	mean
Daily exposure (mg/kg-day)	1.5E-01	max

### Hazard Quotients

NOAEL HQ:	3.2E-02	mean
LOAEL HQ:	1.5E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.6E-02	max
LOAEL HQ:	2.2E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Copper  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	16.28533
Maximum detected value (mg/kg, dry weight):	24.21875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	260
Maximum detected value (mg/kg, dry weight):	260

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.67
BTAG High (mg/kg-day):	632

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.4E-01	mean
Daily exposure (mg/kg-day)	7.1E-01	max

### Hazard Quotients

BTAG Low HQ:	2.0E-01	mean
BTAG High HQ:	8.5E-04	mean
BTAG Low HQ:	2.7E-01	max
BTAG High HQ:	1.1E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Lead  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	4.253028
Maximum detected value (mg/kg, dry weight):	7.03125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	120
Maximum detected value (mg/kg, dry weight):	120

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1
BTAG High (mg/kg-day):	241

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.8E-01	mean
Daily exposure (mg/kg-day)	2.4E-01	max

### Hazard Quotients

BTAG Low HQ:	1.8E-01	mean
BTAG High HQ:	7.3E-04	mean
BTAG Low HQ:	2.4E-01	max
BTAG High HQ:	9.8E-04	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total Mercury  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.106326  
Maximum detected value (mg/kg, dry weight): 0.116438

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.4  
Maximum detected value (mg/kg, dry weight): 1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.027  
BTAG High (mg/kg-day): 0.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.3E-03 mean  
Daily exposure (mg/kg-day) 3.5E-03 max

### Hazard Quotients

BTAG Low HQ: 1.2E-01 mean  
BTAG High HQ: 1.2E-02 mean

BTAG Low HQ: 1.3E-01 max  
BTAG High HQ: 1.3E-02 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Nickel  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.43607
Maximum detected value (mg/kg, dry weight):	2.5

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	14
Maximum detected value (mg/kg, dry weight):	14

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.133
BTAG High (mg/kg-day):	31.6

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.3E-02	mean
Daily exposure (mg/kg-day)	6.5E-02	max

### Hazard Quotients

BTAG Low HQ:	4.8E-01	mean
BTAG High HQ:	2.0E-03	mean
BTAG Low HQ:	4.9E-01	max
BTAG High HQ:	2.0E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Selenium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.884253
Maximum detected value (mg/kg, dry weight):	3.125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.05
BTAG High (mg/kg-day):	1.21

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.2E-02	mean
Daily exposure (mg/kg-day)	6.9E-02	max

### Hazard Quotients

BTAG Low HQ:	8.4E-01	mean
BTAG High HQ:	3.5E-02	mean
BTAG Low HQ:	1.4E+00	max
BTAG High HQ:	5.7E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Zinc  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.5518
Maximum detected value (mg/kg, dry weight):	146.3415

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	9.6
BTAG High (mg/kg-day):	411

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.1E+00	mean
Daily exposure (mg/kg-day)	3.4E+00	max

### Hazard Quotients

BTAG Low HQ:	3.2E-01	mean
BTAG High HQ:	7.5E-03	mean
BTAG Low HQ:	3.6E-01	max
BTAG High HQ:	8.4E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor:** CA Least Tern  
**Location:** SW21

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	8.4E-01	--	--	--	6.2E-01	--	--	--	--	--	--
LOAEL HQ:	8.4E-02	--	--	--	1.2E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	<b>1.5E+00</b>	1.9E-02	4.7E-01	#VALUE!	<b>1.2E+00</b>	<b>6.3E+01</b>	4.4E-01	2.5E-01	<b>1.0E+00</b>	9.9E-01
BTAG High HQ:	#VALUE!	1.1E-01	3.1E-04	1.2E-01	#VALUE!	5.3E-02	1.0E-01	9.6E-02	6.0E-03	2.5E-01	9.9E-02
<b>MAXIMUM</b>											
NOAEL HQ:	<b>1.0E+00</b>	--	--	--	9.1E-01	--	--	--	--	--	--
LOAEL HQ:	1.0E-01	--	--	--	1.8E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	<b>1.7E+00</b>	3.2E-02	5.1E-01	#VALUE!	<b>1.6E+00</b>	<b>8.8E+01</b>	4.7E-01	2.5E-01	<b>1.7E+00</b>	<b>1.1E+00</b>
BTAG High HQ:	#VALUE!	1.2E-01	5.1E-04	1.3E-01	#VALUE!	7.2E-02	1.4E-01	1.0E-01	6.2E-03	4.1E-01	1.1E-01

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Benzo[a]pyrene  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.928668
Maximum detected value (mg/kg, dry weight):	1.146497

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.5
Maximum detected value (mg/kg, dry weight):	1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E-01	mean
Daily exposure (mg/kg-day)	1.4E-01	max

### Hazard Quotients

NOAEL HQ:	8.4E-01	mean
LOAEL HQ:	8.4E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	1.0E+00	max
LOAEL HQ:	1.0E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total PCB Congeners  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.024226
Maximum detected value (mg/kg, dry weight):	1.19863

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.4
Maximum detected value (mg/kg, dry weight):	3.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.4E-01	mean
Daily exposure (mg/kg-day)	1.6E-01	max

### Hazard Quotients

BTAG Low HQ:	1.5E+00	mean
BTAG High HQ:	1.1E-01	mean
BTAG Low HQ:	1.7E+00	max
BTAG High HQ:	1.2E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Tributyltin  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.036  
Food ingestion rate (kg/day dry wt): 0.0044  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.110363  
Maximum detected value (mg/kg, dry weight): 0.1875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.17  
Maximum detected value (mg/kg, dry weight): 0.17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.4E-02 mean  
Daily exposure (mg/kg-day) 2.3E-02 max

### Hazard Quotients

BTAG Low HQ: 1.9E-02 mean  
BTAG High HQ: 3.1E-04 mean

BTAG Low HQ: 3.2E-02 max  
BTAG High HQ: 5.1E-04 max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Arsenic  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	20.72678
Maximum detected value (mg/kg, dry weight):	22.56098

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	11
Maximum detected value (mg/kg, dry weight):	11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.6E+00	mean
Daily exposure (mg/kg-day)	2.8E+00	max

### Hazard Quotients

BTAG Low HQ:	4.7E-01	mean
BTAG High HQ:	1.2E-01	mean
BTAG Low HQ:	5.1E-01	max
BTAG High HQ:	1.3E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Cadmium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.273217
Maximum detected value (mg/kg, dry weight):	0.323171

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.51
Maximum detected value (mg/kg, dry weight):	0.51

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.5E-02	mean
Daily exposure (mg/kg-day)	4.1E-02	max

### Hazard Quotients

BTAG Low HQ:	4.4E-01	mean
BTAG High HQ:	3.4E-03	mean
BTAG Low HQ:	5.1E-01	max
BTAG High HQ:	3.9E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Chromium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.597577
Maximum detected value (mg/kg, dry weight):	4.6875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	70
Maximum detected value (mg/kg, dry weight):	70

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.3E-01	mean
Daily exposure (mg/kg-day)	7.9E-01	max

### Hazard Quotients

NOAEL HQ:	6.2E-01	mean
LOAEL HQ:	1.2E-01	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	9.1E-01	max
LOAEL HQ:	1.8E-01	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Copper  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	16.28533
Maximum detected value (mg/kg, dry weight):	24.21875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	260
Maximum detected value (mg/kg, dry weight):	260

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.8E+00	mean
Daily exposure (mg/kg-day)	3.8E+00	max

### Hazard Quotients

BTAG Low HQ:	1.2E+00	mean
BTAG High HQ:	5.3E-02	mean
BTAG Low HQ:	1.6E+00	max
BTAG High HQ:	7.2E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Lead  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	4.253028
Maximum detected value (mg/kg, dry weight):	7.03125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	120
Maximum detected value (mg/kg, dry weight):	120

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.9E-01	mean
Daily exposure (mg/kg-day)	1.2E+00	max

### Hazard Quotients

BTAG Low HQ:	6.3E+01	mean
BTAG High HQ:	1.0E-01	mean
BTAG Low HQ:	8.8E+01	max
BTAG High HQ:	1.4E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total Mercury  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.106326
Maximum detected value (mg/kg, dry weight):	0.116438

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.4
Maximum detected value (mg/kg, dry weight):	1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E-02	mean
Daily exposure (mg/kg-day)	1.9E-02	max

### Hazard Quotients

BTAG Low HQ:	4.4E-01	mean
BTAG High HQ:	9.6E-02	mean
BTAG Low HQ:	4.7E-01	max
BTAG High HQ:	1.0E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Nickel  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.43607
Maximum detected value (mg/kg, dry weight):	2.5

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	14
Maximum detected value (mg/kg, dry weight):	14

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.4E-01	mean
Daily exposure (mg/kg-day)	3.5E-01	max

### Hazard Quotients

BTAG Low HQ:	2.5E-01	mean
BTAG High HQ:	6.0E-03	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	6.2E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Selenium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.884253
Maximum detected value (mg/kg, dry weight):	3.125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.3E-01	mean
Daily exposure (mg/kg-day)	3.9E-01	max

### Hazard Quotients

BTAG Low HQ:	1.0E+00	mean
BTAG High HQ:	2.5E-01	mean
BTAG Low HQ:	1.7E+00	max
BTAG High HQ:	4.1E-01	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Zinc  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.036
Food ingestion rate (kg/day dry wt):	0.0044
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.5518
Maximum detected value (mg/kg, dry weight):	146.3415

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.7E+01	mean
Daily exposure (mg/kg-day)	1.9E+01	max

### Hazard Quotients

BTAG Low HQ:	9.9E-01	mean
BTAG High HQ:	9.9E-02	mean
BTAG Low HQ:	1.1E+00	max
BTAG High HQ:	1.1E-01	max

## Tier I - Summary of Hazard Quotients

**Receptor:** Green Turtle  
**Location:** SW21

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	2.4E-02	--	--	--	2.6E-02	--	--	--	--	--	--
LOAEL HQ:	2.4E-03	--	--	--	5.2E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	4.5E-02	5.4E-04	1.3E-02	#VALUE!	4.5E-02	<b>2.7E+00</b>	1.6E-02	7.7E-03	2.8E-02	2.9E-02
BTAG High HQ:	#VALUE!	3.2E-03	8.6E-06	3.2E-03	#VALUE!	2.0E-03	4.3E-03	3.5E-03	1.9E-04	6.8E-03	2.9E-03
<b>MAXIMUM</b>											
NOAEL HQ:	2.9E-02	--	--	--	3.4E-02	--	--	--	--	--	--
LOAEL HQ:	2.9E-03	--	--	--	6.7E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	5.1E-02	8.8E-04	1.4E-02	#VALUE!	5.6E-02	<b>3.3E+00</b>	1.7E-02	7.9E-03	4.5E-02	3.2E-02
BTAG High HQ:	#VALUE!	3.6E-03	1.4E-05	3.4E-03	#VALUE!	2.5E-03	5.3E-03	3.6E-03	1.9E-04	1.1E-02	3.2E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Benzol[a]pyrene  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.928668  
Maximum detected value (mg/kg, dry weight): 1.146497

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.5  
Maximum detected value (mg/kg, dry weight): 1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.3E-03 mean  
Daily exposure (mg/kg-day) 4.0E-03 max

### Hazard Quotients

NOAEL HQ: 2.4E-02 mean  
LOAEL HQ: 2.4E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 2.9E-02 max  
LOAEL HQ: 2.9E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total PCB Congeners  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.024226
Maximum detected value (mg/kg, dry weight):	1.19863

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.4
Maximum detected value (mg/kg, dry weight):	3.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.0E-03	mean
Daily exposure (mg/kg-day)	4.6E-03	max

### Hazard Quotients

BTAG Low HQ:	4.5E-02	mean
BTAG High HQ:	3.2E-03	mean
BTAG Low HQ:	5.1E-02	max
BTAG High HQ:	3.6E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Tributyltin  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.110363  
Maximum detected value (mg/kg, dry weight): 0.1875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.17  
Maximum detected value (mg/kg, dry weight): 0.17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.9E-04 mean  
Daily exposure (mg/kg-day) 6.5E-04 max

### Hazard Quotients

BTAG Low HQ: 5.4E-04 mean  
BTAG High HQ: 8.6E-06 mean

BTAG Low HQ: 8.8E-04 max  
BTAG High HQ: 1.4E-05 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Arsenic  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 20.72678  
Maximum detected value (mg/kg, dry weight): 22.56098

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 11  
Maximum detected value (mg/kg, dry weight): 11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.0E-02 mean  
Daily exposure (mg/kg-day) 7.6E-02 max

### Hazard Quotients

BTAG Low HQ: 1.3E-02 mean  
BTAG High HQ: 3.2E-03 mean

BTAG Low HQ: 1.4E-02 max  
BTAG High HQ: 3.4E-03 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Cadmium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.273217
Maximum detected value (mg/kg, dry weight):	0.323171

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.51
Maximum detected value (mg/kg, dry weight):	0.51

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.9E-04	mean
Daily exposure (mg/kg-day)	1.2E-03	max

### Hazard Quotients

BTAG Low HQ:	1.2E-02	mean
BTAG High HQ:	9.5E-05	mean
BTAG Low HQ:	1.4E-02	max
BTAG High HQ:	1.1E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Chromium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.597577
Maximum detected value (mg/kg, dry weight):	4.6875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	70
Maximum detected value (mg/kg, dry weight):	70

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.2E-02	mean
Daily exposure (mg/kg-day)	2.9E-02	max

### Hazard Quotients

NOAEL HQ:	2.6E-02	mean
LOAEL HQ:	5.2E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.4E-02	max
LOAEL HQ:	6.7E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max



## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Copper

**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	16.28533
Maximum detected value (mg/kg, dry weight):	24.21875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	260
Maximum detected value (mg/kg, dry weight):	260

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E-01	mean
Daily exposure (mg/kg-day)	1.3E-01	max

### Hazard Quotients

BTAG Low HQ:	4.5E-02	mean
BTAG High HQ:	2.0E-03	mean

BTAG Low HQ:	5.6E-02	max
BTAG High HQ:	2.5E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Lead

**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	4.253028
Maximum detected value (mg/kg, dry weight):	7.03125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	120
Maximum detected value (mg/kg, dry weight):	120

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.7E-02	mean
Daily exposure (mg/kg-day)	4.6E-02	max

### Hazard Quotients

BTAG Low HQ:	2.7E+00	mean
BTAG High HQ:	4.3E-03	mean

BTAG Low HQ:	3.3E+00	max
BTAG High HQ:	5.3E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total Mercury  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.106326  
Maximum detected value (mg/kg, dry weight): 0.116438

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.4  
Maximum detected value (mg/kg, dry weight): 1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.2E-04 mean  
Daily exposure (mg/kg-day) 6.5E-04 max

### Hazard Quotients

BTAG Low HQ: 1.6E-02 mean  
BTAG High HQ: 3.5E-03 mean

BTAG Low HQ: 1.7E-02 max  
BTAG High HQ: 3.6E-03 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Nickel

**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.43607
Maximum detected value (mg/kg, dry weight):	2.5

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	14
Maximum detected value (mg/kg, dry weight):	14

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-02	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	7.7E-03	mean
BTAG High HQ:	1.9E-04	mean
BTAG Low HQ:	7.9E-03	max
BTAG High HQ:	1.9E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Selenium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.884253  
Maximum detected value (mg/kg, dry weight): 3.125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1  
Maximum detected value (mg/kg, dry weight): 1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.3E-03 mean  
Daily exposure (mg/kg-day) 1.0E-02 max

### Hazard Quotients

BTAG Low HQ: 2.8E-02 mean  
BTAG High HQ: 6.8E-03 mean

BTAG Low HQ: 4.5E-02 max  
BTAG High HQ: 1.1E-02 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Zinc

**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.5518
Maximum detected value (mg/kg, dry weight):	146.3415

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.9E-01	mean
Daily exposure (mg/kg-day)	5.4E-01	max

### Hazard Quotients

BTAG Low HQ:	2.9E-02	mean
BTAG High HQ:	2.9E-03	mean

BTAG Low HQ:	3.2E-02	max
BTAG High HQ:	3.2E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor: Brown Pelican**  
**Location: SW21**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	5.6E-01	--	--	--	3.9E-01	--	--	--	--	--	--
LOAEL HQ:	5.6E-02	--	--	--	7.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	9.9E-01	1.3E-02	3.1E-01	#VALUE!	7.7E-01	<b>4.0E+01</b>	2.8E-01	1.6E-01	6.7E-01	6.5E-01
BTAG High HQ:	#VALUE!	7.0E-02	2.0E-04	7.7E-02	#VALUE!	3.4E-02	6.3E-02	6.1E-02	3.9E-03	1.7E-01	6.5E-02
<b>MAXIMUM</b>											
NOAEL HQ:	6.8E-01	--	--	--	5.8E-01	--	--	--	--	--	--
LOAEL HQ:	6.8E-02	--	--	--	1.2E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	<b>1.1E+00</b>	2.1E-02	3.4E-01	#VALUE!	<b>1.0E+00</b>	<b>5.6E+01</b>	3.0E-01	1.6E-01	<b>1.1E+00</b>	7.2E-01
BTAG High HQ:	#VALUE!	8.1E-02	3.4E-04	8.4E-02	#VALUE!	4.6E-02	8.9E-02	6.6E-02	4.0E-03	2.7E-01	7.2E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Benzo[a]pyrene  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.928668  
 Maximum detected value (mg/kg, dry weight): 1.146497

BAP

180	15.7	100	0.157
150	14.6	100	0.146
120	16.4	100	0.164
130	14.8	100	0.148

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.5  
 Maximum detected value (mg/kg, dry weight): 1.5

110	12.8	100	0.128
<b>138</b>			<b>0.1486</b>

928.6676

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
 LOAEL (mg/kg-day): 1.4  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

1146.497

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 7.8E-02 mean  
 Daily exposure (mg/kg-day) 9.5E-02 max

### Hazard Quotients

NOAEL HQ: 5.6E-01 mean  
 LOAEL HQ: 5.6E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 6.8E-01 max  
 LOAEL HQ: 6.8E-02 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total PCB Congeners  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.024226  
 Maximum detected value (mg/kg, dry weight): 1.19863

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 3.4  
 Maximum detected value (mg/kg, dry weight): 3.4

PCB Cong	Total Solids			
143	15.7	100	0.157	
175	14.6	100	0.146	
170	16.4	100	0.164	
167	14.8	100	0.148	
106	12.8	100	0.128	
<b>152.2</b>			<b>0.1486</b>	<b>1024.226</b>
				1198.63

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.09  
 BTAG High (mg/kg-day): 1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 8.9E-02 mean  
 Daily exposure (mg/kg-day) 1.0E-01 max

### Hazard Quotients

BTAG Low HQ: 9.9E-01 mean  
 BTAG High HQ: 7.0E-02 mean

BTAG Low HQ: 1.1E+00 max  
 BTAG High HQ: 8.1E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Tributyltin  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.110363  
 Maximum detected value (mg/kg, dry weight): 0.1875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.17  
 Maximum detected value (mg/kg, dry weight): 0.17

TBT	Total Solids			
13	15.7	100	0.157	
14	14.6	100	0.146	
16	16.4	100	0.164	
15	14.8	100	0.148	
24	12.8	100	0.128	
<b>16.4</b>			<b>0.1486</b>	<b>110.3634</b>
187.5				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
 BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.2E-03 mean  
 Daily exposure (mg/kg-day) 1.5E-02 max

### Hazard Quotients

BTAG Low HQ: 1.3E-02 mean  
 BTAG High HQ: 2.0E-04 mean

BTAG Low HQ: 2.1E-02 max  
 BTAG High HQ: 3.4E-04 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Arsenic  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 20.72678  
 Maximum detected value (mg/kg, dry weight): 22.56098

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 11  
 Maximum detected value (mg/kg, dry weight): 11

Arsenic	Total Solids			
3.1	15.7	100	0.157	
3.1	14.6	100	0.146	
3.7	16.4	100	0.164	
2.9	14.8	100	0.148	
2.6	12.8	100	0.128	
<b>3.08</b>			<b>0.1486</b>	<b>20.72678</b>
22.56098				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
 BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.7E+00 mean  
 Daily exposure (mg/kg-day) 1.8E+00 max

### Hazard Quotients

BTAG Low HQ: 3.1E-01 mean  
 BTAG High HQ: 7.7E-02 mean

BTAG Low HQ: 3.4E-01 max  
 BTAG High HQ: 8.4E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Cadmium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.273217  
 Maximum detected value (mg/kg, dry weight): 0.323171

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.51  
 Maximum detected value (mg/kg, dry weight): 0.51

Cadmium	Total Solids			
0.033	15.7	100	0.157	
0.037	14.6	100	0.146	
0.053	16.4	100	0.164	
0.042	14.8	100	0.148	
0.038	12.8	100	0.128	
<b>0.0406</b>			<b>0.1486</b>	<b>0.273217</b>
0.323171				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
 BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.3E-02 mean  
 Daily exposure (mg/kg-day) 2.7E-02 max

### Hazard Quotients

BTAG Low HQ: 2.9E-01 mean  
 BTAG High HQ: 2.2E-03 mean

BTAG Low HQ: 3.4E-01 max  
 BTAG High HQ: 2.6E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Chromium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.597577  
 Maximum detected value (mg/kg, dry weight): 4.6875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 70  
 Maximum detected value (mg/kg, dry weight): 70

Chromium	Total Solids		
0.32	15.7	100	0.157
0.32	14.6	100	0.146
0.35	16.4	100	0.164
0.34	14.8	100	0.148
0.6	12.8	100	0.128
<b>0.386</b>			<b>0.1486 2.597577</b>
4.6875			

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
 LOAEL (mg/kg-day): 4.3  
 BTAG Low (mg/kg-day): Not Available  
 BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.3E-01 mean  
 Daily exposure (mg/kg-day) 5.0E-01 max

### Hazard Quotients

NOAEL HQ: 3.9E-01 mean  
 LOAEL HQ: 7.7E-02 mean  
 BTAG Low HQ: #VALUE! mean  
 BTAG High HQ: #VALUE! mean

NOAEL HQ: 5.8E-01 max  
 LOAEL HQ: 1.2E-01 max  
 BTAG Low HQ: #VALUE! max  
 BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Copper  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 16.28533  
 Maximum detected value (mg/kg, dry weight): 24.21875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 260  
 Maximum detected value (mg/kg, dry weight): 260

Copper	Total Solids			
2.4	15.7	100	0.157	
2	14.6	100	0.146	
2.4	16.4	100	0.164	
2.2	14.8	100	0.148	
3.1	12.8	100	0.128	
<b>2.42</b>			<b>0.1486</b>	<b>16.28533</b>
				24.21875

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
 BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.8E+00 mean  
 Daily exposure (mg/kg-day) 2.4E+00 max

### Hazard Quotients

BTAG Low HQ: 7.7E-01 mean  
 BTAG High HQ: 3.4E-02 mean

BTAG Low HQ: 1.0E+00 max  
 BTAG High HQ: 4.6E-02 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican

**Chemical:** Lead

**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845
Food ingestion rate (kg/day dry wt):	0.23
Sediment ingestion rate (kg/day dry wt):	0.005
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	4.253028
Maximum detected value (mg/kg, dry weight):	7.03125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	120
Maximum detected value (mg/kg, dry weight):	120

Lead	Total Solids			
0.46	15.7	100	0.157	
0.53	14.6	100	0.146	
0.69	16.4	100	0.164	
0.58	14.8	100	0.148	
0.9	12.8	100	0.128	
<b>0.632</b>			<b>0.1486</b>	<b>4.253028</b>
7.03125				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.5E-01	mean
Daily exposure (mg/kg-day)	7.8E-01	max

### Hazard Quotients

BTAG Low HQ:	4.0E+01	mean
BTAG High HQ:	6.3E-02	mean

BTAG Low HQ:	5.6E+01	max
BTAG High HQ:	8.9E-02	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Total Mercury  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.106326  
 Maximum detected value (mg/kg, dry weight): 0.116438

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.4  
 Maximum detected value (mg/kg, dry weight): 1.4

Mercury	Total Solids			
0.016	15.7	100	0.157	
0.017	14.6	100	0.146	
0.017	16.4	100	0.164	
0.017	14.8	100	0.148	
0.012	12.8	100	0.128	
<b>0.0158</b>			<b>0.1486</b>	<b>0.106326</b>
0.116438				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
 BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E-02 mean  
 Daily exposure (mg/kg-day) 1.2E-02 max

### Hazard Quotients

BTAG HQ: 2.8E-01 mean  
 BTAG HQ: 6.1E-02 mean

BTAG Low HQ: 3.0E-01 max  
 BTAG High HQ: 6.6E-02 max



## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Nickel  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.43607  
 Maximum detected value (mg/kg, dry weight): 2.5

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 14  
 Maximum detected value (mg/kg, dry weight): 14

	Nickel	Total Solids		
	0.36	15.7	100	0.157
	0.31	14.6	100	0.146
	0.41	16.4	100	0.164
	0.36	14.8	100	0.148
	0.37	12.8	100	0.128
	<b>0.362</b>			<b>0.1486</b>
				<b>2.43607</b>
				2.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
 BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.2E-01 mean  
 Daily exposure (mg/kg-day) 2.3E-01 max

### Hazard Quotients

BTAG Low HQ: 1.6E-01 mean  
 BTAG High HQ: 3.9E-03 mean

BTAG Low HQ: 1.6E-01 max  
 BTAG High HQ: 4.0E-03 max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Selenium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	2.845	
Food ingestion rate (kg/day dry wt):	0.23	
Sediment ingestion rate (kg/day dry wt):	0.005	
Area Use Factor (unitless):	1	0.004
Time Use Factor (unitless):	1	

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.884253
Maximum detected value (mg/kg, dry weight):	3.125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1
Maximum detected value (mg/kg, dry weight):	1

Selenium	Total Solids		
0.2	15.7	100	0.157
0.2	14.6	100	0.146
0.3	16.4	100	0.164
0.3	14.8	100	0.148
0.4	12.8	100	0.128
<b>0.28</b>			<b>0.1486 1.884253</b>
			3.125

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-01	mean
Daily exposure (mg/kg-day)	2.5E-01	max

### Hazard Quotients

BTAG Low HQ:	6.7E-01	mean
BTAG High HQ:	1.7E-01	mean

BTAG Low HQ:	1.1E+00	max
BTAG High HQ:	2.7E-01	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Zinc  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 130.5518  
 Maximum detected value (mg/kg, dry weight): 146.3415

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 330  
 Maximum detected value (mg/kg, dry weight): 330

Zinc	Total Solids			
18	15.7	100	0.157	
18	14.6	100	0.146	
24	16.4	100	0.164	
18	14.8	100	0.148	
19	12.8	100	0.128	
<b>19.4</b>			<b>0.1486</b>	<b>130.5518</b>
				146.3415

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
 BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E+01 mean  
 Daily exposure (mg/kg-day) 1.2E+01 max

### Hazard Quotients

BTAG Low HQ: 6.5E-01 mean  
 BTAG High HQ: 6.5E-02 mean

BTAG Low HQ: 7.2E-01 max  
 BTAG High HQ: 7.2E-02 max

## Tier I - Summary of Hazard Quotients

**Receptor: Western Grebe**  
**Location: SW21**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	4.2E-01	--	--	--	4.8E-01	--	--	--	--	--	--
LOAEL HQ:	4.2E-02	--	--	--	9.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	7.9E-01	9.5E-03	2.2E-01	#VALUE!	8.4E-01	<b>5.0E+01</b>	2.9E-01	1.4E-01	4.8E-01	5.1E-01
BTAG High HQ:	#VALUE!	5.6E-02	1.5E-04	5.6E-02	#VALUE!	3.7E-02	8.0E-02	6.3E-02	3.4E-03	1.2E-01	5.1E-02
<b>MAXIMUM</b>											
NOAEL HQ:	5.1E-01	--	--	--	6.2E-01	--	--	--	--	--	--
LOAEL HQ:	5.1E-02	--	--	--	1.2E-01	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	9.0E-01	1.6E-02	2.4E-01	#VALUE!	<b>1.0E+00</b>	<b>6.1E+01</b>	3.1E-01	1.4E-01	7.9E-01	5.6E-01
BTAG High HQ:	#VALUE!	6.4E-02	2.5E-04	6.0E-02	#VALUE!	4.5E-02	9.8E-02	6.7E-02	3.5E-03	2.0E-01	5.6E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Benzo[a]pyrene  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.928668
Maximum detected value (mg/kg, dry weight):	1.146497

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.5
Maximum detected value (mg/kg, dry weight):	1.5

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.9E-02	mean
Daily exposure (mg/kg-day)	7.1E-02	max

### Hazard Quotients

NOAEL HQ:	4.2E-01	mean
LOAEL HQ:	4.2E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	5.1E-01	max
LOAEL HQ:	5.1E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total PCB Congeners  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.024226
Maximum detected value (mg/kg, dry weight):	1.19863

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.4
Maximum detected value (mg/kg, dry weight):	3.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.1E-02	mean
Daily exposure (mg/kg-day)	8.1E-02	max

### Hazard Quotients

BTAG Low HQ:	7.9E-01	mean
BTAG High HQ:	5.6E-02	mean
BTAG Low HQ:	9.0E-01	max
BTAG High HQ:	6.4E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Tributyltin

**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.110363
Maximum detected value (mg/kg, dry weight):	0.1875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.17
Maximum detected value (mg/kg, dry weight):	0.17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.9E-03	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	9.5E-03	mean
BTAG High HQ:	1.5E-04	mean

BTAG Low HQ:	1.6E-02	max
BTAG High HQ:	2.5E-04	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Arsenic  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 20.72678  
Maximum detected value (mg/kg, dry weight): 22.56098

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 11  
Maximum detected value (mg/kg, dry weight): 11

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.2E+00 mean  
Daily exposure (mg/kg-day) 1.3E+00 max

### Hazard Quotients

BTAG Low HQ: 2.2E-01 mean  
BTAG High HQ: 5.6E-02 mean

BTAG Low HQ: 2.4E-01 max  
BTAG High HQ: 6.0E-02 max



## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Cadmium

**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.273217
Maximum detected value (mg/kg, dry weight):	0.323171

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.51
Maximum detected value (mg/kg, dry weight):	0.51

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.8E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	2.2E-01	mean
BTAG High HQ:	1.7E-03	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	2.0E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Chromium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.597577  
Maximum detected value (mg/kg, dry weight): 4.6875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 70  
Maximum detected value (mg/kg, dry weight): 70

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.2E-01 mean  
Daily exposure (mg/kg-day) 5.4E-01 max

### Hazard Quotients

NOAEL HQ: 4.8E-01 mean  
LOAEL HQ: 9.7E-02 mean  
BTAG Low HQ: #VALUEI mean  
BTAG High HQ: #VALUEI mean

NOAEL HQ: 6.2E-01 max  
LOAEL HQ: 1.2E-01 max  
BTAG Low HQ: #VALUEI max  
BTAG High HQ: #VALUEI max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Copper

**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	16.28533
Maximum detected value (mg/kg, dry weight):	24.21875

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	260
Maximum detected value (mg/kg, dry weight):	260

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E+00	mean
Daily exposure (mg/kg-day)	2.4E+00	max

### Hazard Quotients

BTAG Low HQ:	8.4E-01	mean
BTAG High HQ:	3.7E-02	mean
BTAG Low HQ:	1.0E+00	max
BTAG High HQ:	4.5E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Lead

**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	4.253028
Maximum detected value (mg/kg, dry weight):	7.03125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	120
Maximum detected value (mg/kg, dry weight):	120

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.0E-01	mean
Daily exposure (mg/kg-day)	8.6E-01	max

### Hazard Quotients

BTAG Low HQ:	5.0E+01	mean
BTAG High HQ:	8.0E-02	mean

BTAG Low HQ:	6.1E+01	max
BTAG High HQ:	9.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total Mercury  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.106326
Maximum detected value (mg/kg, dry weight):	0.116438

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.4
Maximum detected value (mg/kg, dry weight):	1.4

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-02	mean
Daily exposure (mg/kg-day)	1.2E-02	max

### Hazard Quotients

BTAG Low HQ:	2.9E-01	mean
BTAG High HQ:	6.3E-02	mean
BTAG Low HQ:	3.1E-01	max
BTAG High HQ:	6.7E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Nickel  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.43607  
Maximum detected value (mg/kg, dry weight): 2.5

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 14  
Maximum detected value (mg/kg, dry weight): 14

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.9E-01 mean  
Daily exposure (mg/kg-day) 2.0E-01 max

### Hazard Quotients

BTAG Low HQ: 1.4E-01 mean  
BTAG High HQ: 3.4E-03 mean

BTAG Low HQ: 1.4E-01 max  
BTAG High HQ: 3.5E-03 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Selenium  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.884253  
Maximum detected value (mg/kg, dry weight): 3.125

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1  
Maximum detected value (mg/kg, dry weight): 1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E-01 mean  
Daily exposure (mg/kg-day) 1.8E-01 max

### Hazard Quotients

BTAG Low HQ: 4.8E-01 mean  
BTAG High HQ: 1.2E-01 mean

BTAG Low HQ: 7.9E-01 max  
BTAG High HQ: 2.0E-01 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Zinc  
**Location:** SW21

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	130.5518
Maximum detected value (mg/kg, dry weight):	146.3415

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	330
Maximum detected value (mg/kg, dry weight):	330

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.7E+00	mean
Daily exposure (mg/kg-day)	9.6E+00	max

### Hazard Quotients

BTAG Low HQ:	5.1E-01	mean
BTAG High HQ:	5.1E-02	mean
BTAG Low HQ:	5.6E-01	max
BTAG High HQ:	5.6E-02	max



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## Tier I - Summary of Hazard Quotients

**Receptor:** Surf Scoter  
**Location:** SW28

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	4.2E-01	--	--	--	3.4E-01	--	--	--	--	--	--
LOAEL HQ:	4.2E-02	--	--	--	6.8E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	5.6E-01	7.2E-03	2.1E-01	#VALUE!	7.1E-01	<b>3.4E+01</b>	2.4E-01	1.4E-01	4.1E-01	4.7E-01
BTAG High HQ:	#VALUE!	4.0E-02	1.2E-04	5.3E-02	#VALUE!	3.1E-02	5.5E-02	5.3E-02	3.5E-03	1.0E-01	4.7E-02
<b>MAXIMUM</b>											
NOAEL HQ:	4.1E-01	--	--	--	3.6E-01	--	--	--	--	--	--
LOAEL HQ:	4.1E-02	--	--	--	7.2E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	6.2E-01	8.7E-03	2.3E-01	#VALUE!	7.9E-01	<b>3.6E+01</b>	2.7E-01	1.6E-01	6.4E-01	5.6E-01
BTAG High HQ:	#VALUE!	4.4E-02	1.4E-04	5.7E-02	#VALUE!	3.5E-02	5.7E-02	5.8E-02	3.9E-03	1.6E-01	5.6E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Benzol[a]pyrene  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.87969  
Maximum detected value (mg/kg, dry weight): 0.858896

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 3.1  
Maximum detected value (mg/kg, dry weight): 3.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.9E-02 mean  
Daily exposure (mg/kg-day) 5.8E-02 max

### Hazard Quotients

NOAEL HQ: 4.2E-01 mean  
LOAEL HQ: 4.2E-02 mean  
BTAG Low HQ: #VALUEI mean  
BTAG High HQ: #VALUEI mean

NOAEL HQ: 4.1E-01 max  
LOAEL HQ: 4.1E-02 max  
BTAG Low HQ: #VALUEI max  
BTAG High HQ: #VALUEI max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total PCB Congeners  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.786546
Maximum detected value (mg/kg, dry weight):	0.877419

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.1
Maximum detected value (mg/kg, dry weight):	2.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.1E-02	mean
Daily exposure (mg/kg-day)	5.6E-02	max

### Hazard Quotients

BTAG Low HQ:	5.6E-01	mean
BTAG High HQ:	4.0E-02	mean
BTAG Low HQ:	6.2E-01	max
BTAG High HQ:	4.4E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Tributyltin  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.084088  
Maximum detected value (mg/kg, dry weight): 0.103226

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.18  
Maximum detected value (mg/kg, dry weight): 0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 5.3E-03 mean  
Daily exposure (mg/kg-day) 6.4E-03 max

### Hazard Quotients

BTAG Low HQ: 7.2E-03 mean  
BTAG High HQ: 1.2E-04 mean

BTAG Low HQ: 8.7E-03 max  
BTAG High HQ: 1.4E-04 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Arsenic

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.92238
Maximum detected value (mg/kg, dry weight):	21.47239

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E+00	mean
Daily exposure (mg/kg-day)	1.2E+00	max

### Hazard Quotients

BTAG Low HQ:	2.1E-01	mean
BTAG High HQ:	5.3E-02	mean
BTAG Low HQ:	2.3E-01	max
BTAG High HQ:	5.7E-02	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Cadmium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.241915
Maximum detected value (mg/kg, dry weight):	0.325153

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.36
Maximum detected value (mg/kg, dry weight):	0.36

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-02	mean
Daily exposure (mg/kg-day)	1.9E-02	max

### Hazard Quotients

BTAG Low HQ:	1.8E-01	mean
BTAG High HQ:	1.4E-03	mean
BTAG Low HQ:	2.4E-01	max
BTAG High HQ:	1.9E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Chromium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.552393
Maximum detected value (mg/kg, dry weight):	1.840491

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	63
Maximum detected value (mg/kg, dry weight):	63

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.9E-01	mean
Daily exposure (mg/kg-day)	3.1E-01	max

### Hazard Quotients

NOAEL HQ:	3.4E-01	mean
LOAEL HQ:	6.8E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	3.6E-01	max
LOAEL HQ:	7.2E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max



## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Copper  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 13.58344  
Maximum detected value (mg/kg, dry weight): 16.56442

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 270  
Maximum detected value (mg/kg, dry weight): 270

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 2.3  
BTAG High (mg/kg-day): 52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.6E+00 mean  
Daily exposure (mg/kg-day) 1.8E+00 max

### Hazard Quotients

BTAG Low HQ: 7.1E-01 mean  
BTAG High HQ: 3.1E-02 mean

BTAG Low HQ: 7.9E-01 max  
BTAG High HQ: 3.5E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Lead

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.781371  
Maximum detected value (mg/kg, dry weight): 3.128834

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 100  
Maximum detected value (mg/kg, dry weight): 100

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.014  
BTAG High (mg/kg-day): 8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.8E-01 mean  
Daily exposure (mg/kg-day) 5.0E-01 max

### Hazard Quotients

BTAG Low HQ: 3.4E+01 mean  
BTAG High HQ: 5.5E-02 mean

BTAG Low HQ: 3.6E+01 max  
BTAG High HQ: 5.7E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Total Mercury  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.859  
Food ingestion rate (kg/day dry wt): 0.048  
Sediment ingestion rate (kg/day dry wt): 0.0028  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.112549  
Maximum detected value (mg/kg, dry weight): 0.129032

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.98  
Maximum detected value (mg/kg, dry weight): 0.98

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.039  
BTAG High (mg/kg-day): 0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.5E-03 mean  
Daily exposure (mg/kg-day) 1.0E-02 max

### Hazard Quotients

BTAG Low HQ: 2.4E-01 mean  
BTAG High HQ: 5.3E-02 mean

BTAG Low HQ: 2.7E-01 max  
BTAG High HQ: 5.8E-02 max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter

**Chemical:** Nickel

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.496766
Maximum detected value (mg/kg, dry weight):	2.944785

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	17
Maximum detected value (mg/kg, dry weight):	17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E-01	mean
Daily exposure (mg/kg-day)	2.2E-01	max

### Hazard Quotients

BTAG Low HQ:	1.4E-01	mean
BTAG High HQ:	3.5E-03	mean

BTAG Low HQ:	1.6E-01	max
BTAG High HQ:	3.9E-03	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Selenium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.617076
Maximum detected value (mg/kg, dry weight):	2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.4E-02	mean
Daily exposure (mg/kg-day)	1.5E-01	max

### Hazard Quotients

BTAG Low HQ:	4.1E-01	mean
BTAG High HQ:	1.0E-01	mean
BTAG Low HQ:	6.4E-01	max
BTAG High HQ:	1.6E-01	max

## Hazard Quotient Calculation

**Receptor:** Surf Scoter  
**Chemical:** Zinc  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.859
Food ingestion rate (kg/day dry wt):	0.048
Sediment ingestion rate (kg/day dry wt):	0.0028
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	125.4851
Maximum detected value (mg/kg, dry weight):	153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	310
Maximum detected value (mg/kg, dry weight):	310

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.0E+00	mean
Daily exposure (mg/kg-day)	9.6E+00	max

### Hazard Quotients

BTAG Low HQ:	4.7E-01	mean
BTAG High HQ:	4.7E-02	mean
BTAG Low HQ:	5.6E-01	max
BTAG High HQ:	5.6E-02	max

## Tier I - Summary of Hazard Quotients

Receptor: **Sea Lion**

Location: **SW28**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	--	--	--	--	2.3E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.1E-03	--	--	--	--	--	--
BTAG Low HQ:	1.6E-02	5.2E-02	7.9E-03	<b>1.4E+00</b>	#VALUE!	1.8E-01	1.3E-01	1.2E-01	5.0E-01	7.3E-01	3.1E-01
BTAG High HQ:	6.5E-04	1.5E-02	1.3E-04	9.5E-02	#VALUE!	7.7E-04	5.4E-04	1.2E-02	2.1E-03	3.0E-02	7.2E-03
<b>MAXIMUM</b>											
NOAEL HQ:	--	--	--	--	2.5E-02	--	--	--	--	--	--
LOAEL HQ:	--	--	--	--	1.2E-03	--	--	--	--	--	--
BTAG Low HQ:	1.6E-02	5.8E-02	9.6E-03	<b>1.5E+00</b>	#VALUE!	2.1E-01	1.4E-01	1.3E-01	5.7E-01	1.2E+00	3.7E-01
BTAG High HQ:	6.4E-04	1.6E-02	1.6E-04	1.0E-01	#VALUE!	8.7E-04	5.7E-04	1.3E-02	2.4E-03	4.8E-02	8.7E-03

### NOTE:

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Benzo[a]pyrene  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.87969
Maximum detected value (mg/kg, dry weight):	0.858896

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.1
Maximum detected value (mg/kg, dry weight):	3.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.31
BTAG High (mg/kg-day):	32.8

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.1E-02	mean
Daily exposure (mg/kg-day)	2.1E-02	max

### Hazard Quotients

BTAG Low HQ:	1.6E-02	mean
BTAG High HQ:	6.5E-04	mean
BTAG Low HQ:	1.6E-02	max
BTAG High HQ:	6.4E-04	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total PCB Congeners  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.786546  
Maximum detected value (mg/kg, dry weight): 0.877419

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 2.1  
Maximum detected value (mg/kg, dry weight): 2.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.36  
BTAG High (mg/kg-day): 1.28

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.9E-02 mean  
Daily exposure (mg/kg-day) 2.1E-02 max

### Hazard Quotients

BTAG Low HQ: 5.2E-02 mean  
BTAG High HQ: 1.5E-02 mean

BTAG Low HQ: 5.8E-02 max  
BTAG High HQ: 1.6E-02 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Tributyltin  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.084088
Maximum detected value (mg/kg, dry weight):	0.103226

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.25
BTAG High (mg/kg-day):	15

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.0E-03	mean
Daily exposure (mg/kg-day)	2.4E-03	max

### Hazard Quotients

BTAG Low HQ:	7.9E-03	mean
BTAG High HQ:	1.3E-04	mean

BTAG Low HQ:	9.6E-03	max
BTAG High HQ:	1.6E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Arsenic  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 45  
Food ingestion rate (kg/day dry wt): 0.99  
Sediment ingestion rate (kg/day dry wt): 0.0308  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.92238  
Maximum detected value (mg/kg, dry weight): 21.47239

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 15  
Maximum detected value (mg/kg, dry weight): 15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.32  
BTAG High (mg/kg-day): 4.7

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 4.5E-01 mean  
Daily exposure (mg/kg-day) 4.8E-01 max

### Hazard Quotients

BTAG Low HQ: 1.4E+00 mean  
BTAG High HQ: 9.5E-02 mean

BTAG Low HQ: 1.5E+00 max  
BTAG High HQ: 1.0E-01 max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Cadmium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.241915
Maximum detected value (mg/kg, dry weight):	0.325153

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.36
Maximum detected value (mg/kg, dry weight):	0.36

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.06
BTAG High (mg/kg-day):	2.64

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.6E-03	mean
Daily exposure (mg/kg-day)	7.4E-03	max

### Hazard Quotients

BTAG Low HQ:	9.3E-02	mean
BTAG High HQ:	2.1E-03	mean
BTAG Low HQ:	1.2E-01	max
BTAG High HQ:	2.8E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Chromium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.552393
Maximum detected value (mg/kg, dry weight):	1.840491

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	63
Maximum detected value (mg/kg, dry weight):	63

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	3.3
LOAEL (mg/kg-day):	69
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	7.7E-02	mean
Daily exposure (mg/kg-day)	8.4E-02	max

### Hazard Quotients

NOAEL HQ:	2.3E-02	mean
LOAEL HQ:	1.1E-03	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	2.5E-02	max
LOAEL HQ:	1.2E-03	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Copper  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	13.58344
Maximum detected value (mg/kg, dry weight):	16.56442

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	270
Maximum detected value (mg/kg, dry weight):	270

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.67
BTAG High (mg/kg-day):	632

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.8E-01	mean
Daily exposure (mg/kg-day)	5.5E-01	max

### Hazard Quotients

BTAG Low HQ:	1.8E-01	mean
BTAG High HQ:	7.7E-04	mean
BTAG Low HQ:	2.1E-01	max
BTAG High HQ:	8.7E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Lead  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.781371
Maximum detected value (mg/kg, dry weight):	3.128834

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	100
Maximum detected value (mg/kg, dry weight):	100

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1
BTAG High (mg/kg-day):	241

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.3E-01	mean
Daily exposure (mg/kg-day)	1.4E-01	max

### Hazard Quotients

BTAG Low HQ:	1.3E-01	mean
BTAG High HQ:	5.4E-04	mean
BTAG Low HQ:	1.4E-01	max
BTAG High HQ:	5.7E-04	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Total Mercury  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.112549
Maximum detected value (mg/kg, dry weight):	0.129032

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.98
Maximum detected value (mg/kg, dry weight):	0.98

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.027
BTAG High (mg/kg-day):	0.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.1E-03	mean
Daily exposure (mg/kg-day)	3.5E-03	max

### Hazard Quotients

BTAG Low HQ:	1.2E-01	mean
BTAG High HQ:	1.2E-02	mean
BTAG Low HQ:	1.3E-01	max
BTAG High HQ:	1.3E-02	max



## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Nickel  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.496766
Maximum detected value (mg/kg, dry weight):	2.944785

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	17
Maximum detected value (mg/kg, dry weight):	17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.133
BTAG High (mg/kg-day):	31.6

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.7E-02	mean
Daily exposure (mg/kg-day)	7.6E-02	max

### Hazard Quotients

BTAG Low HQ:	5.0E-01	mean
BTAG High HQ:	2.1E-03	mean
BTAG Low HQ:	5.7E-01	max
BTAG High HQ:	2.4E-03	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Selenium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.617076
Maximum detected value (mg/kg, dry weight):	2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.05
BTAG High (mg/kg-day):	1.21

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.6E-02	mean
Daily exposure (mg/kg-day)	5.8E-02	max

### Hazard Quotients

BTAG Low HQ:	7.3E-01	mean
BTAG High HQ:	3.0E-02	mean
BTAG Low HQ:	1.2E+00	max
BTAG High HQ:	4.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Sea Lion  
**Chemical:** Zinc  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	45
Food ingestion rate (kg/day dry wt):	0.99
Sediment ingestion rate (kg/day dry wt):	0.0308
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	125.4851
Maximum detected value (mg/kg, dry weight):	153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	310
Maximum detected value (mg/kg, dry weight):	310

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	9.6
BTAG High (mg/kg-day):	411

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.0E+00	mean
Daily exposure (mg/kg-day)	3.6E+00	max

### Hazard Quotients

BTAG Low HQ:	3.1E-01	mean
BTAG High HQ:	7.2E-03	mean
BTAG Low HQ:	3.7E-01	max
BTAG High HQ:	8.7E-03	max

## Tier I - Summary of Hazard Quotients

**Receptor: CA Least Tern**  
**Location: SW28**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	7.9E-01	--	--	--	3.9E-01	--	--	--	--	--	--
LOAEL HQ:	7.9E-02	--	--	--	7.8E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	<b>1.1E+00</b>	1.4E-02	4.3E-01	#VALUE!	9.8E-01	<b>4.1E+01</b>	4.0E-01	2.4E-01	8.4E-01	9.0E-01
BTAG High HQ:	#VALUE!	7.7E-02	2.3E-04	1.1E-01	#VALUE!	4.3E-02	6.5E-02	8.7E-02	6.0E-03	2.1E-01	9.0E-02
<b>MAXIMUM</b>											
NOAEL HQ:	7.8E-01	--	--	--	4.3E-01	--	--	--	--	--	--
LOAEL HQ:	7.8E-02	--	--	--	8.6E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	<b>1.2E+00</b>	1.7E-02	4.7E-01	#VALUE!	<b>1.1E+00</b>	<b>4.4E+01</b>	4.5E-01	2.8E-01	<b>1.3E+00</b>	<b>1.1E+00</b>
BTAG High HQ:	#VALUE!	8.5E-02	2.7E-04	1.2E-01	#VALUE!	5.0E-02	7.0E-02	9.8E-02	6.9E-03	3.3E-01	1.1E-01

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Benzol[a]pyrene  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.045  
Food ingestion rate (kg/day dry wt): 0.0053  
Sediment ingestion rate (kg/day dry wt): 0.00011  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.87969  
Maximum detected value (mg/kg, dry weight): 0.858896

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 3.1  
Maximum detected value (mg/kg, dry weight): 3.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E-01 mean  
Daily exposure (mg/kg-day) 1.1E-01 max

### Hazard Quotients

NOAEL HQ: 7.9E-01 mean  
LOAEL HQ: 7.9E-02 mean  
BTAG Low HQ: #VALUEI mean  
BTAG High HQ: #VALUEI mean

NOAEL HQ: 7.8E-01 max  
LOAEL HQ: 7.8E-02 max  
BTAG Low HQ: #VALUEI max  
BTAG High HQ: #VALUEI max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total PCB Congeners  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.786546
Maximum detected value (mg/kg, dry weight):	0.877419

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.1
Maximum detected value (mg/kg, dry weight):	2.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.8E-02	mean
Daily exposure (mg/kg-day)	1.1E-01	max

### Hazard Quotients

BTAG Low HQ:	1.1E+00	mean
BTAG High HQ:	7.7E-02	mean
BTAG Low HQ:	1.2E+00	max
BTAG High HQ:	8.5E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Tributyltin  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.084088
Maximum detected value (mg/kg, dry weight):	0.103226

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E-02	mean
Daily exposure (mg/kg-day)	1.3E-02	max

### Hazard Quotients

BTAG Low HQ:	1.4E-02	mean
BTAG High HQ:	2.3E-04	mean
BTAG Low HQ:	1.7E-02	max
BTAG High HQ:	2.7E-04	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Arsenic  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.92238
Maximum detected value (mg/kg, dry weight):	21.47239

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.4E+00	mean
Daily exposure (mg/kg-day)	2.6E+00	max

### Hazard Quotients

BTAG Low HQ:	4.3E-01	mean
BTAG High HQ:	1.1E-01	mean
BTAG Low HQ:	4.7E-01	max
BTAG High HQ:	1.2E-01	max



## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Cadmium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.241915
Maximum detected value (mg/kg, dry weight):	0.325153

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.36
Maximum detected value (mg/kg, dry weight):	0.36

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.9E-02	mean
Daily exposure (mg/kg-day)	3.9E-02	max

### Hazard Quotients

BTAG Low HQ:	3.7E-01	mean
BTAG High HQ:	2.8E-03	mean
BTAG Low HQ:	4.9E-01	max
BTAG High HQ:	3.8E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Chromium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.552393
Maximum detected value (mg/kg, dry weight):	1.840491

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	63
Maximum detected value (mg/kg, dry weight):	63

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.4E-01	mean
Daily exposure (mg/kg-day)	3.7E-01	max

### Hazard Quotients

NOAEL HQ:	3.9E-01	mean
LOAEL HQ:	7.8E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.3E-01	max
LOAEL HQ:	8.6E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Copper  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	13.58344
Maximum detected value (mg/kg, dry weight):	16.56442

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	270
Maximum detected value (mg/kg, dry weight):	270

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.3E+00	mean
Daily exposure (mg/kg-day)	2.6E+00	max

### Hazard Quotients

BTAG Low HQ:	9.8E-01	mean
BTAG High HQ:	4.3E-02	mean
BTAG Low HQ:	1.1E+00	max
BTAG High HQ:	5.0E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Lead

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.781371
Maximum detected value (mg/kg, dry weight):	3.128834

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	100
Maximum detected value (mg/kg, dry weight):	100

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.7E-01	mean
Daily exposure (mg/kg-day)	6.1E-01	max

### Hazard Quotients

BTAG Low HQ:	4.1E+01	mean
BTAG High HQ:	6.5E-02	mean
BTAG Low HQ:	4.4E+01	max
BTAG High HQ:	7.0E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Total Mercury  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.112549
Maximum detected value (mg/kg, dry weight):	0.129032

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.98
Maximum detected value (mg/kg, dry weight):	0.98

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.6E-02	mean
Daily exposure (mg/kg-day)	1.8E-02	max

### Hazard Quotients

BTAG Low HQ:	4.0E-01	mean
BTAG High HQ:	8.7E-02	mean
BTAG Low HQ:	4.5E-01	max
BTAG High HQ:	9.8E-02	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Nickel  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.496766
Maximum detected value (mg/kg, dry weight):	2.944785

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	17
Maximum detected value (mg/kg, dry weight):	17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.4E-01	mean
Daily exposure (mg/kg-day)	3.9E-01	max

### Hazard Quotients

BTAG Low HQ:	2.4E-01	mean
BTAG High HQ:	6.0E-03	mean
BTAG Low HQ:	2.8E-01	max
BTAG High HQ:	6.9E-03	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern  
**Chemical:** Selenium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.617076
Maximum detected value (mg/kg, dry weight):	2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.9E-01	mean
Daily exposure (mg/kg-day)	3.1E-01	max

### Hazard Quotients

BTAG Low HQ:	8.4E-01	mean
BTAG High HQ:	2.1E-01	mean
BTAG Low HQ:	1.3E+00	max
BTAG High HQ:	3.3E-01	max

## Hazard Quotient Calculation

**Receptor:** CA Least Tern

**Chemical:** Zinc

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.045
Food ingestion rate (kg/day dry wt):	0.0053
Sediment ingestion rate (kg/day dry wt):	0.00011
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	125.4851
Maximum detected value (mg/kg, dry weight):	153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	310
Maximum detected value (mg/kg, dry weight):	310

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.6E+01	mean
Daily exposure (mg/kg-day)	1.9E+01	max

### Hazard Quotients

BTAG Low HQ:	9.0E-01	mean
BTAG High HQ:	9.0E-02	mean
BTAG Low HQ:	1.1E+00	max
BTAG High HQ:	1.1E-01	max



## Tier I - Summary of Hazard Quotients

**Receptor: Green Turtle**  
**Location: SW28**

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	2.5E-02	--	--	--	2.0E-02	--	--	--	--	--	--
LOAEL HQ:	2.5E-03	--	--	--	4.0E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	3.3E-02	4.2E-04	1.2E-02	#VALUE!	4.2E-02	<b>2.0E+00</b>	1.4E-02	8.3E-03	2.4E-02	2.7E-02
BTAG High HQ:	#VALUE!	2.3E-03	6.7E-06	3.1E-03	#VALUE!	1.9E-03	3.3E-03	3.1E-03	2.0E-04	5.9E-03	2.7E-03
<b>MAXIMUM</b>											
NOAEL HQ:	2.4E-02	--	--	--	2.1E-02	--	--	--	--	--	--
LOAEL HQ:	2.4E-03	--	--	--	4.3E-03	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	3.6E-02	5.1E-04	1.3E-02	#VALUE!	4.6E-02	<b>2.1E+00</b>	1.6E-02	9.4E-03	3.8E-02	3.3E-02
BTAG High HQ:	#VALUE!	2.6E-03	8.1E-06	3.3E-03	#VALUE!	2.0E-03	3.4E-03	3.4E-03	2.3E-04	9.3E-03	3.3E-03

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Benz[a]pyrene  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.87969  
Maximum detected value (mg/kg, dry weight): 0.858896

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 3.1  
Maximum detected value (mg/kg, dry weight): 3.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.14  
LOAEL (mg/kg-day): 1.4  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.5E-03 mean  
Daily exposure (mg/kg-day) 3.4E-03 max

### Hazard Quotients

NOAEL HQ: 2.5E-02 mean  
LOAEL HQ: 2.5E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 2.4E-02 max  
LOAEL HQ: 2.4E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total PCB Congeners  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.786546
Maximum detected value (mg/kg, dry weight):	0.877419

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.1
Maximum detected value (mg/kg, dry weight):	2.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.0E-03	mean
Daily exposure (mg/kg-day)	3.3E-03	max

### Hazard Quotients

BTAG Low HQ:	3.3E-02	mean
BTAG High HQ:	2.3E-03	mean
BTAG Low HQ:	3.6E-02	max
BTAG High HQ:	2.6E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Tributyltin  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.084088  
Maximum detected value (mg/kg, dry weight): 0.103226

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.18  
Maximum detected value (mg/kg, dry weight): 0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.73  
BTAG High (mg/kg-day): 45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 3.1E-04 mean  
Daily exposure (mg/kg-day) 3.7E-04 max

### Hazard Quotients

BTAG Low HQ: 4.2E-04 mean  
BTAG High HQ: 6.7E-06 mean

BTAG Low HQ: 5.1E-04 max  
BTAG High HQ: 8.1E-06 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Arsenic  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 19.92238  
Maximum detected value (mg/kg, dry weight): 21.47239

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 15  
Maximum detected value (mg/kg, dry weight): 15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 5.5  
BTAG High (mg/kg-day): 22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 6.8E-02 mean  
Daily exposure (mg/kg-day) 7.3E-02 max

### Hazard Quotients

BTAG Low HQ: 1.2E-02 mean  
BTAG High HQ: 3.1E-03 mean

BTAG Low HQ: 1.3E-02 max  
BTAG High HQ: 3.3E-03 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Cadmium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 0.241915  
Maximum detected value (mg/kg, dry weight): 0.325153

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 0.36  
Maximum detected value (mg/kg, dry weight): 0.36

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.08  
BTAG High (mg/kg-day): 10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 8.6E-04 mean  
Daily exposure (mg/kg-day) 1.1E-03 max

### Hazard Quotients

BTAG Low HQ: 1.1E-02 mean  
BTAG High HQ: 8.3E-05 mean

BTAG Low HQ: 1.4E-02 max  
BTAG High HQ: 1.1E-04 max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Chromium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 95  
Food ingestion rate (kg/day dry wt): 0.31  
Sediment ingestion rate (kg/day dry wt): 0.0186  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.552393  
Maximum detected value (mg/kg, dry weight): 1.840491

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 63  
Maximum detected value (mg/kg, dry weight): 63

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day): 0.86  
LOAEL (mg/kg-day): 4.3  
BTAG Low (mg/kg-day): Not Available  
BTAG High (mg/kg-day): Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.7E-02 mean  
Daily exposure (mg/kg-day) 1.8E-02 max

### Hazard Quotients

NOAEL HQ: 2.0E-02 mean  
LOAEL HQ: 4.0E-03 mean  
BTAG Low HQ: #VALUE! mean  
BTAG High HQ: #VALUE! mean

NOAEL HQ: 2.1E-02 max  
LOAEL HQ: 4.3E-03 max  
BTAG Low HQ: #VALUE! max  
BTAG High HQ: #VALUE! max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Copper

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	13.58344
Maximum detected value (mg/kg, dry weight):	16.56442

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	270
Maximum detected value (mg/kg, dry weight):	270

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	9.7E-02	mean
Daily exposure (mg/kg-day)	1.1E-01	max

### Hazard Quotients

BTAG Low HQ:	4.2E-02	mean
BTAG High HQ:	1.9E-03	mean
BTAG Low HQ:	4.6E-02	max
BTAG High HQ:	2.0E-03	max



## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Lead

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.781371
Maximum detected value (mg/kg, dry weight):	3.128834

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	100
Maximum detected value (mg/kg, dry weight):	100

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	2.9E-02	mean
Daily exposure (mg/kg-day)	3.0E-02	max

### Hazard Quotients

BTAG Low HQ:	2.0E+00	mean
BTAG High HQ:	3.3E-03	mean

BTAG Low HQ:	2.1E+00	max
BTAG High HQ:	3.4E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Total Mercury  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.112549
Maximum detected value (mg/kg, dry weight):	0.129032

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.98
Maximum detected value (mg/kg, dry weight):	0.98

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.6E-04	mean
Daily exposure (mg/kg-day)	6.1E-04	max

### Hazard Quotients

BTAG Low HQ:	1.4E-02	mean
BTAG High HQ:	3.1E-03	mean
BTAG Low HQ:	1.6E-02	max
BTAG High HQ:	3.4E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Nickel

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.496766
Maximum detected value (mg/kg, dry weight):	2.944785

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	17
Maximum detected value (mg/kg, dry weight):	17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	1.38
BTAG High (mg/kg-day):	56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.1E-02	mean
Daily exposure (mg/kg-day)	1.3E-02	max

### Hazard Quotients

BTAG Low HQ:	8.3E-03	mean
BTAG High HQ:	2.0E-04	mean

BTAG Low HQ:	9.4E-03	max
BTAG High HQ:	2.3E-04	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle  
**Chemical:** Selenium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.617076
Maximum detected value (mg/kg, dry weight):	2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	1.1
Maximum detected value (mg/kg, dry weight):	1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.23
BTAG High (mg/kg-day):	0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.5E-03	mean
Daily exposure (mg/kg-day)	8.6E-03	max

### Hazard Quotients

BTAG Low HQ:	2.4E-02	mean
BTAG High HQ:	5.9E-03	mean
BTAG Low HQ:	3.8E-02	max
BTAG High HQ:	9.3E-03	max

## Hazard Quotient Calculation

**Receptor:** Green Turtle

**Chemical:** Zinc

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	95
Food ingestion rate (kg/day dry wt):	0.31
Sediment ingestion rate (kg/day dry wt):	0.0186
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	125.4851
Maximum detected value (mg/kg, dry weight):	153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	310
Maximum detected value (mg/kg, dry weight):	310

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	4.7E-01	mean
Daily exposure (mg/kg-day)	5.6E-01	max

### Hazard Quotients

BTAG Low HQ:	2.7E-02	mean
BTAG High HQ:	2.7E-03	mean

BTAG Low HQ:	3.3E-02	max
BTAG High HQ:	3.3E-03	max

## Hazard Quotient Calculation

**Receptor:** Brown Pelican  
**Chemical:** Zinc  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 2.845  
 Food ingestion rate (kg/day dry wt): 0.23  
 Sediment ingestion rate (kg/day dry wt): 0.005  
 Area Use Factor (unitless): 1  
 Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 125.4851  
 Maximum detected value (mg/kg, dry weight): 153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 310  
 Maximum detected value (mg/kg, dry weight): 310

Zinc	Total Solids			
18	15.7	100	0.157	
15	14.3	100	0.143	
22	15.5	100	0.155	
25	16.3	100	0.163	
17	15.5	100	0.155	
<b>19.4</b>			<b>0.1546</b>	<b>125.4851</b>
153.3742				

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 17.2  
 BTAG High (mg/kg-day): 172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 1.1E+01 mean  
 Daily exposure (mg/kg-day) 1.3E+01 max

### Hazard Quotients

BTAG Low HQ: 6.2E-01 mean  
 BTAG High HQ: 6.2E-02 mean

BTAG Low HQ: 7.5E-01 max  
 BTAG High HQ: 7.5E-02 max

## Tier I - Summary of Hazard Quotients

**Receptor:** Western Grebe  
**Location:** SW28

	BAP	PCBs	TBT	Arsenic	Chromium	Copper	Lead	Mercury	Nickel	Selenium	Zinc
<b>MEAN</b>											
NOAEL HQ:	4.4E-01	--	--	--	3.8E-01	--	--	--	--	--	--
LOAEL HQ:	4.4E-02	--	--	--	7.7E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	5.9E-01	7.5E-03	2.2E-01	#VALUE!	7.9E-01	<b>3.9E+01</b>	2.6E-01	1.5E-01	4.2E-01	4.8E-01
BTAG High HQ:	#VALUE!	4.2E-02	1.2E-04	5.4E-02	#VALUE!	3.5E-02	6.2E-02	5.6E-02	3.7E-03	1.0E-01	4.8E-02
<b>MAXIMUM</b>											
NOAEL HQ:	4.3E-01	--	--	--	4.0E-01	--	--	--	--	--	--
LOAEL HQ:	4.3E-02	--	--	--	8.1E-02	--	--	--	--	--	--
BTAG Low HQ:	#VALUE!	6.4E-01	9.0E-03	2.3E-01	#VALUE!	8.6E-01	<b>4.0E+01</b>	2.8E-01	1.7E-01	6.6E-01	5.8E-01
BTAG High HQ:	#VALUE!	4.6E-02	1.4E-04	5.8E-02	#VALUE!	3.8E-02	6.4E-02	6.2E-02	4.1E-03	1.6E-01	5.8E-02

**NOTE:**

HQ values bold faced and shaded are greater than an HQ threshold value of 1.

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Benzo[a]pyrene  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.87969
Maximum detected value (mg/kg, dry weight):	0.858896

### Sediment Chemical Concentrations (from Table B1-5 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	3.1
Maximum detected value (mg/kg, dry weight):	3.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.14
LOAEL (mg/kg-day):	1.4
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	6.2E-02	mean
Daily exposure (mg/kg-day)	6.1E-02	max

### Hazard Quotients

NOAEL HQ:	4.4E-01	mean
LOAEL HQ:	4.4E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.3E-01	max
LOAEL HQ:	4.3E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total PCB Congeners  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.786546
Maximum detected value (mg/kg, dry weight):	0.877419

### Sediment Chemical Concentrations (from Table B1-7 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	2.1
Maximum detected value (mg/kg, dry weight):	2.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.09
BTAG High (mg/kg-day):	1.27

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.3E-02	mean
Daily exposure (mg/kg-day)	5.8E-02	max

### Hazard Quotients

BTAG Low HQ:	5.9E-01	mean
BTAG High HQ:	4.2E-02	mean
BTAG Low HQ:	6.4E-01	max
BTAG High HQ:	4.6E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Tributyltin

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.084088
Maximum detected value (mg/kg, dry weight):	0.103226

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.18
Maximum detected value (mg/kg, dry weight):	0.18

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.73
BTAG High (mg/kg-day):	45.9

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.5E-03	mean
Daily exposure (mg/kg-day)	6.6E-03	max

### Hazard Quotients

BTAG Low HQ:	7.5E-03	mean
BTAG High HQ:	1.2E-04	mean
BTAG Low HQ:	9.0E-03	max
BTAG High HQ:	1.4E-04	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Arsenic

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	19.92238
Maximum detected value (mg/kg, dry weight):	21.47239

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	15
Maximum detected value (mg/kg, dry weight):	15

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	5.5
BTAG High (mg/kg-day):	22

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.2E+00	mean
Daily exposure (mg/kg-day)	1.3E+00	max

### Hazard Quotients

BTAG Low HQ:	2.2E-01	mean
BTAG High HQ:	5.4E-02	mean
BTAG Low HQ:	2.3E-01	max
BTAG High HQ:	5.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Cadmium

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.241915
Maximum detected value (mg/kg, dry weight):	0.325153

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.36
Maximum detected value (mg/kg, dry weight):	0.36

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.08
BTAG High (mg/kg-day):	10.4

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.5E-02	mean
Daily exposure (mg/kg-day)	2.0E-02	max

### Hazard Quotients

BTAG Low HQ:	1.9E-01	mean
BTAG High HQ:	1.5E-03	mean
BTAG Low HQ:	2.5E-01	max
BTAG High HQ:	1.9E-03	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Chromium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	1.552393
Maximum detected value (mg/kg, dry weight):	1.840491

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	63
Maximum detected value (mg/kg, dry weight):	63

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

NOAEL (mg/kg-day):	0.86
LOAEL (mg/kg-day):	4.3
BTAG Low (mg/kg-day):	Not Available
BTAG High (mg/kg-day):	Not Available

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	3.3E-01	mean
Daily exposure (mg/kg-day)	3.5E-01	max

### Hazard Quotients

NOAEL HQ:	3.8E-01	mean
LOAEL HQ:	7.7E-02	mean
BTAG Low HQ:	#VALUE!	mean
BTAG High HQ:	#VALUE!	mean

NOAEL HQ:	4.0E-01	max
LOAEL HQ:	8.1E-02	max
BTAG Low HQ:	#VALUE!	max
BTAG High HQ:	#VALUE!	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Copper

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	13.58344
Maximum detected value (mg/kg, dry weight):	16.56442

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	270
Maximum detected value (mg/kg, dry weight):	270

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	2.3
BTAG High (mg/kg-day):	52.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.8E+00	mean
Daily exposure (mg/kg-day)	2.0E+00	max

### Hazard Quotients

BTAG Low HQ:	7.9E-01	mean
BTAG High HQ:	3.5E-02	mean
BTAG Low HQ:	8.6E-01	max
BTAG High HQ:	3.8E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Lead

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	2.781371
Maximum detected value (mg/kg, dry weight):	3.128834

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	100
Maximum detected value (mg/kg, dry weight):	100

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.014
BTAG High (mg/kg-day):	8.75

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	5.4E-01	mean
Daily exposure (mg/kg-day)	5.6E-01	max

### Hazard Quotients

BTAG Low HQ:	3.9E+01	mean
BTAG High HQ:	6.2E-02	mean

BTAG Low HQ:	4.0E+01	max
BTAG High HQ:	6.4E-02	max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Total Mercury  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	0.112549
Maximum detected value (mg/kg, dry weight):	0.129032

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	0.98
Maximum detected value (mg/kg, dry weight):	0.98

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	0.039
BTAG High (mg/kg-day):	0.18

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	1.0E-02	mean
Daily exposure (mg/kg-day)	1.1E-02	max

### Hazard Quotients

BTAG Low HQ:	2.6E-01	mean
BTAG High HQ:	5.6E-02	mean
BTAG Low HQ:	2.8E-01	max
BTAG High HQ:	6.2E-02	max



## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Nickel  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 2.496766  
Maximum detected value (mg/kg, dry weight): 2.944785

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 17  
Maximum detected value (mg/kg, dry weight): 17

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 1.38  
BTAG High (mg/kg-day): 56.3

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 2.1E-01 mean  
Daily exposure (mg/kg-day) 2.3E-01 max

### Hazard Quotients

BTAG Low HQ: 1.5E-01 mean  
BTAG High HQ: 3.7E-03 mean

BTAG Low HQ: 1.7E-01 max  
BTAG High HQ: 4.1E-03 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe  
**Chemical:** Selenium  
**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg): 0.808  
Food ingestion rate (kg/day dry wt): 0.046  
Sediment ingestion rate (kg/day dry wt): 0.0031  
Area Use Factor (unitless): 1  
Time Use Factor (unitless): 1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight): 1.617076  
Maximum detected value (mg/kg, dry weight): 2.580645

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight): 1.1  
Maximum detected value (mg/kg, dry weight): 1.1

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day): 0.23  
BTAG High (mg/kg-day): 0.93

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day) 9.6E-02 mean  
Daily exposure (mg/kg-day) 1.5E-01 max

### Hazard Quotients

BTAG Low HQ: 4.2E-01 mean  
BTAG High HQ: 1.0E-01 mean

BTAG Low HQ: 6.6E-01 max  
BTAG High HQ: 1.6E-01 max

## Hazard Quotient Calculation

**Receptor:** Western Grebe

**Chemical:** Zinc

**Location:** SW28

### Exposure Parameters (from Table 10-6 of NASSCO/SWM DSI Volume 1)

Body weight (kg):	0.808
Food ingestion rate (kg/day dry wt):	0.046
Sediment ingestion rate (kg/day dry wt):	0.0031
Area Use Factor (unitless):	1
Time Use Factor (unitless):	1

### Prey Chemical Concentrations (Macoma)

Mean detected value (mg/kg, dry weight):	125.4851
Maximum detected value (mg/kg, dry weight):	153.3742

### Sediment Chemical Concentrations (from Table B1-3 of NASSCO/SWM DSI Volume II)

Mean detected value (mg/kg, dry weight):	310
Maximum detected value (mg/kg, dry weight):	310

### Toxicity Reference Values (from Table 10-8 of NASSCO/SWM DSI Volume 1)

BTAG Low (mg/kg-day):	17.2
BTAG High (mg/kg-day):	172

### Daily Exposure Rate using average chemical concentrations and area-use-factors

Daily exposure (mg/kg-day)	8.3E+00	mean
Daily exposure (mg/kg-day)	9.9E+00	max

### Hazard Quotients

BTAG Low HQ:	4.8E-01	mean
BTAG High HQ:	4.8E-02	mean

BTAG Low HQ:	5.8E-01	max
BTAG High HQ:	5.8E-02	max