Table 3-2b
Development of Risk-Based Concentrations (RBCs)
Non-Cancer Hazard Quotient (Reasonable Maximum Exposure)
Recreational User
Upland and Non-Tidal Wetland Areas - Soil and Sediment
Investigation Area H1 Feasibility Study
Mare Island, Vallejo, California

$RBC = 1 / (HQ_{Ingestion} + HQ_{Dermal} + HQ_{Inhalation})$

$HQ_{Ingestion} = IR_s * 1E\text{-}06\ kg/mg * EF * ED * 1/BW * 1/AT * 1/RfD_o$

$HQ_{Dermal} = SA * AF * ABS * 1E\text{-}06\ kg/mg * EF * ED * 1/BW * 1/AT * 1/GI_{ABS} * 1/RfDo$

$HQ_{Inhalation} = IR_a * EF * ED * (1/PEF\ or\ 1/VF) * 1/BW * 1/AT * 1/RfDi$

Analyte[1]	Risk-Based Concentration (mg/kg) RBC (mg/kg)	Ingestion Rate of Soil (mg/day) IR_s (mg/day)	Ingestion Rate of Air (m^3/day) IR_a (m^3/day)	Surface Area Available for Contact (cm^2/day) SA (cm^2/day)	Soil to Skin Adherence Factor (mg/cm^2) AF (mg/cm^2)	Dermal Absorption Factor (unitless) ABS (unitless)	Gastrointestinal Absorption Factor (unitless) GI_{ABS} (unitless)	Exposure Frequency (days/year) EF (days/year)	Exposure Duration (years) ED (years)	Body Weight (kg) BW (kg)	Averaging Time (cancer) (days) AT (days)	Particulate Emission Factor (m^3/kg) PEF (m^3/kg)	Volatilization Factor (m^3/kg) VF (m^3/kg)	Oral Reference Dose (mg/kg-day) RfD_o (mg/kg-day)	Inhalation Reference Dose (mg/kg-day) RfD_i (mg/kg-day)
Inorganics															
Aluminum	**888,355**	200	11.1	4590	0.2	NA	1	72	17	36.1	6205	1.32E+09	NA	1.00E+00	1.40E-03
Antimony	**366**	200	11.1	4590	0.2	NA	0.15	72	17	36.1	6205	1.32E+09	NA	4.00E-04	NA
Arsenic [2]	**241**	200	11.1	4590	0.2	0.03	1	72	17	36.1	6205	1.32E+09	NA	3.00E-04	8.57E-06
Barium	**62,761**	200	11.1	4590	0.2	NA	0.07	72	17	36.1	6205	1.32E+09	NA	7.00E-02	1.43E-04
Cadmium	**768**	200	11.1	4590	0.2	0.001	0.025	72	17	36.1	6205	1.32E+09	NA	1.00E-03	5.71E-06
Chromium	**1,372,552**	200	11.1	4590	0.2	NA	0.013	72	17	36.1	6205	1.32E+09	NA	1.50E+00	NA
Cobalt	**15,948**	200	11.1	4590	0.2	NA	1	72	17	36.1	6205	1.32E+09	NA	2.00E-02	5.70E-06
Copper	**36,601**	200	11.1	4590	0.2	NA	1	72	17	36.1	6205	1.32E+09	NA	4.00E-02	NA
Lead	**NA**	200	11.1	4590	0.2	NA	1	72	17	36.1	6205	1.32E+09	NA	NA	NA
Manganese	**90,749**	200	11.1	4590	0.2	NA	0.04	72	17	36.1	6205	1.32E+09	NA	1.40E-01	1.43E-05
Mercury	**274**	200	11.1	4590	0.2	NA	0.07	72	17	36.1	6205	1.32E+09	NA	3.00E-04	2.57E-05
Molybdenum	**4,575**	200	11.1	4590	0.2	NA	1	72	17	36.1	6205	1.32E+09	NA	5.00E-03	NA
Nickel	**17,284**	200	11.1	4590	0.2	NA	0.04	72	17	36.1	6205	1.32E+09	NA	2.00E-02	1.43E-05
Selenium	**4,575**	200	11.1	4590	0.2	NA	1	72	17	36.1	6205	1.32E+09	NA	5.00E-03	5.71E-03
Silver	**4,575**	200	11.1	4590	0.2	NA	0.04	72	17	36.1	6205	1.32E+09	NA	5.00E-03	NA
Thallium	**641**	200	11.1	4590	0.2	NA	1	72	17	36.1	6205	1.32E+09	NA	7.00E-04	NA
Tin	**549,021**	200	11.1	4590	0.2	NA	1	72	17	36.1	6205	1.32E+09	NA	6.00E-01	NA
Vanadium	**6,405**	200	11.1	4590	0.2	NA	0.026	72	17	36.1	6205	1.32E+09	NA	7.00E-03	NA
Zinc	**274,510**	200	11.1	4590	0.2	NA	1	72	17	36.1	6205	1.32E+09	NA	3.00E-01	NA
Organics															
Total PCBs [2]	**11.1**	200	11.1	4590	0.2	0.14	1	72	17	36.1	6205	1.32E+09	NA	2.00E-05	2.00E-05
Anthracene	**171,919**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	3.00E-01	3.00E-01
Benzo(a)anthracene	**NA**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	NA	NA
Benzo(a)pyrene [2]	**NA**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	NA	NA
Benzo(b)fluoranthene	**NA**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	NA	NA
Benzo(g,h,i)perylene	**22,923**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	4.00E-02	4.00E-02
Benzo(k)fluoranthene	**NA**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	NA	NA
Chrysene	**NA**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	NA	NA
Fluoranthene	**22,923**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	4.00E-02	4.00E-02
Indeno(1,2,3-cd)pyrene	**NA**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	NA	NA
Phenanthrene	**171,919**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	3.00E-01	3.00E-01
Pyrene	**17,192**	200	11.1	4590	0.2	0.13	1	72	17	36.1	6205	1.32E+09	NA	3.00E-02	3.00E-02

Notes:

1 - Chemicals listed in this table were identified as exhibiting at least one concentration that was considered a data outliers and/or risk drivers identified in the human health risk assessment.

2 - The chemicals identified as risk drivers from the human health risk assessment are denoted as italicized and bold.

NA - Not available or not applicable.