

Navy Response to USEPA Comments on Draft Final version of *Proposed RAOs and Remedial Goals for Site 1 Soil at Allegany Ballistics Laboratory, July 15, 2009*

The following comments were provided verbally during the ABL Partnering meeting on August 25, 2009.

1. Use the interim health advisory number for perchlorate of 15 ppb.

Response: The interim health advisory value of 15 ppb will be used in the calculation of the SSL for perchlorate.

2. For PRGs based on background, describe the dataset used and the statistics calculated to develop the background value.

Response: The dataset used for establishing background levels is presented in the Final Background Soil Investigation Technical Memorandum, Allegany Ballistics Laboratory (CH2M HILL, 2004). The only constituents for which the PRG is based on background is for cobalt and iron.

Iron: 30,900 mg/kg (surface soil); 27,400 mg/kg (subsurface soil)

Cobalt: 18 mg/kg (combined soil)

Using this dataset, UTLs were calculated in ProUCL Version 4.00.04. These were 95/95 UTLs, i.e. 95% upper confidence bounds on the 95th percentile. For iron, an assumption that the background data are normally distributed was appropriate for both the surface soil and subsurface soil. For surface soil, this UTL is 30,900 mg/kg while for subsurface soil, this UTL is 27,400 mg/kg. For cobalt, the depths were combined, and an assumption that the background data are lognormally distributed was appropriate. This lognormal UTL for cobalt is 18 mg/kg.

3. For human-health based values, provide information on the driving exposure pathway.

Response: Appendix A of the PRG memorandum includes the route-specific calculations for the SRGs. A footnote will be added to the summary tables indicating that details on the exposure pathways can be found in Appendix A.

4. Provide clarification for developing chromium and HMX SSL values

Response: The calculations were verified and determined to be correct, as shown below:

$$\begin{aligned} SSL &= C_w \left(K_d + \frac{\theta_w + \theta_a H'}{\rho_b} \right) \\ SSL_{Cr} &= 253 \left[2.6 \times 10^6 + \frac{0.3 + (0.16)(0.0)}{1.5} \right] \\ &= 6.33 \times 10^8 \\ SSL_{HMX} &= 82.8 \left[13.5 + \frac{0.3 + (0.16)(3.5 \times 10^{-8})}{1.5} \right] \\ &= 1134 \end{aligned}$$

The SSL calculation for chromium calculates a value that exceeds 100 percent concentration and therefore is presented in the PRG memorandum at the maximum value of 100 percent or 1.0 E+06 mg/kg. All SSL calculations are presented to two significant figures in the memorandum for the purposes of consistency; therefore, the PRG memorandum presents HMX as 1,100 mg/kg instead of the calculated value shown above.

SSL calculation input parameters for Chromium and HMX
Site 1, Allegany Ballistics Laboratory

Parameter	Units	Chromium	Notes	HMX	Notes
Target Soil Leachate Concentration (C _w)	mg/L	253	GWPS x DAF	82.8	GWPS x DAF
Groundwater Protection Standard (GWPS)	mg/L	5.5	RSL, non-carcinogenic effects, HI = 0.1	1.8	RSL, adjusted non-carcinogenic effects for one target organ, HI = 1.0
Dilution Attenuation Factor (DAF)	Unit-less	46		46	
Soil-Water Partition Coefficient (K _d)	L/Kg	2.5E+06	SSL Guidance Table C-4, pH based	13.5	K _{oc} x foc
Organic Carbon-Water Partition Coefficient (K _{oc})	L/Kg	N/A		1,850	RSL chemical-physical parameter table
Soil Fraction Organic Carbon (foc)	g/g	N/A		0.0073	Site-specific average concentration
Water-filled Soil Porosity (moisture content or θ _w)	L/L	0.3	Silt soil type	0.3	Silt soil type
Air-filled Soil Porosity (θ _a)	L/L	0.16	Silt soil type	0.16	Silt soil type
Henry's Law Constant (H')	Unit-less	0.0	RSL chemical-physical parameter table	3.5E-08	RSL chemical-physical parameter table
Dry Bulk Density (ρ _b)	Kg/L	1.5	SSL Guidance default value	1.5	SSL Guidance default value
Soil pH	SU	7.0	Site-specific average	N/A	

SSL calculation input parameters for Chromium and HMX
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Parameter	Units	Chromium	Notes	HMX	Notes
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Notes:

N/A: not applicable

5. Add a column to Table C-1 indicating the basis and value for the SSL calculation (e.g. MCL, RSL).

Response: The recommended change will be incorporated into the final PRG Technical Memorandum.

Navy Response to WVDEP Comments on Draft Final version of *Proposed RAOs and Remedial Goals for Site 1 Soil at Allegany Ballistics Laboratory, July 15, 2009*

1. Under the Site Description and Memorandum of Scope section, 4th paragraph, 3rd line, change “burn reactive debris” to “... burn reactive waste”.

Response: The recommended change will be incorporated into the final PRG Technical Memorandum.

2. Verify references to Consent Orders (Page 1 and 2)

Response: Existing documentation was reviewed and it was verified that the information presented is correct.

3. Under the Proposed Site Remediation Goals section, clarify the discussion (five sub areas to two sub areas).

Response: The recommended change will be incorporated into the final PRG Technical Memorandum.