TA-21

Site 21-024(i)

Subject: HQs and HIs for 21-024(i)
Date: Tue, 30 Jul 2002 09:58:15 -0600
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Kirby - Attached is the spreadsheet of the eco HQs and HIs for 21-024(i) that we agreed upon in the June 25 meeting. Sorry it has taken so long. The HQs and HIs are based on the 95% UCLs, which are also included in the spreadsheet. The highlighted rows are for the inorganics whose 95% UCL is less than both the soil and QBT 3 BVs. The HIs are presented as the total HI (all analytes), the HI without aluminum, and the HI without aluminum and cobalt. Let me know if you have questions and wish to discuss further.

Paula is writing up the record of communication regarding the agreements and path forward for this site from the June 25 meeting, which she will send to Vicky. Thanks.

Rich

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total Eco Hqs +HIs.xls	**Name:** total Eco Hqs +HIs.xls **Type:** Microsoft Excel Worksheet (application/vnd.ms-excel) **Encoding:** base64

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SWMU 21-024(i) UCLs Compared to ESLs

Analyte	95% UCL	Plant ESL	Plant HQ	Earthworm ESL	Earthworm HQ	Deer Mouse ESL	Deer Mouse HQ	Vagrant Shrew ESL	Vagrant Shrew HQ	Desert Cottontail ESL	Desert Cottontail HQ	Red Fox ESL	Red Fox HQ	American Robin ESL	herbivore American Robin HQ	American Robin ESL	insectivore American Robin HQ	American Robin ESL	omnivore American Robin HQ	American Kestrel ESL	50% carnivore American Kestrel HQ	American Kestrel ESL	100% carnivore American Kestrel HQ
Aluminum	8.620	5.000	1724.000			18.00	478.89	8.800	979.545	740.0	11.649	1300	7	3000.00	2.87	280.000	30.79	520.000	16.577	2100.00	4.10	52000.0	0.1658
Antimony	5.30	0.050	106.000			1.00	5.30	0.570	9.298	6.0	0.883	90	0.059										
Arsenic	3.47	10.000	0.347	6.80	0.51	1.70	2.04	0.830	4.181	21.0	0.165	90	0.039	100.00	0.03	19.000	0.18	32.000	0.108	140.00	0.02	2400.0	0.0014
Barium	97	100.000	0.970			4.50	21.56	2.400	40.417	33.0	2.939	390	0.249	1000.00	0.10	230.000	0.42	380.000	0.255	1700.00	0.06	46000.0	0.0021
Beryllium	0.75	2.500	0.300			6.20	0.12	3.000	0.250	200.0	0.004	470	0.002										
Chromium	10.9	2.400	4.542	1.40	7.79	2100.00	0.01	720.000	0.015	7800.0	0.001	1600	0.007	700.00	0.02	470.000	0.02	560.000	0.019	5300.00	0.00	13000.0	0.0008
Cobalt	3.43	0.250	13.720			0.18	19.06	0.091	37.692	4.8	0.715	10	0	0.47	7.30	0.051	67.25	0.093	36.882	0.38	9.03	6.1	0.5623
Copper	6.68	10.000	0.668	13.00	0.51	170.00	0.04	170.000	0.039	290.0	0.023	8100	0.001	260.00	0.03	390.000	0.02	310.000	0.022	3300.00	0.00	21000.0	0.0003
Lead	25.90	450.000	0.058	2000.00	0.01	210.00	0.12	100.000	0.259	900.0	0.029	4200	0.006	100.00	0.26	56.000	0.46	74.000	0.350	500.00	0.05	2700.0	0.0096
Mercury	1.56	34.000	0.046	0.05	31.20	410.00	0.00	190.000	0.008	2300.0	0.001	3800	0.000	9.30	0.17	3.700	0.42	5.300	0.294	27.00	0.06	69.0	0.0226
Nickel	5.57	20.000	0.279	100.00	0.06	2000.00	0.003	910.000	0.006	7600.0	0.001	28000	0.0002	1600.00	0.00	1000.000	0.01	1200.000	0.005	9700.00	0.00	37000.0	0.0002
Selenium	0.73	0.100	7.300	7.70	0.09	1.80	0.41	0.910	0.802	53.0	0.014	110	0.007	10.00	0.07	1.100	0.66	2.000	0.365	8.40	0.09	150.0	0.0049
Silver	1.47	0.050	29.400			0.28	5.25	0.280	5.250	0.5	2.940	13	0.113	31.00	0.05	44.000	0.03	36.000	0.041	370.00	0.00	2500.0	0.0006
Thallium	0.99	0.100	9.900			0.68	1.46	0.320	3.094	27.0	0.037	28	0.035										
Vanadium	15.3	0.025	612.000			20.00	0.77	9.600	1.594	760.0	0.020	1400	0.011	29.00	0.53	2.800	5.46	5.200	2.942	21.00	0.73	510.0	0.0300
Zinc	66	10.000	6.600	350.00	0.19	320.00	0.21	230.000	0.287	1100.0	0.060	15000	0.004	210.00	0.31	99.000	0.67	130.000	0.508	670.00	0.10	5300.0	0.0125
Americium-241	0.072	7.00E+03	1.03E-05	17	0.00424	7.30E+03	9.86E-06	2.70E+03	2.67E-05	3.10E+04	2.32E-06	2.60E+04	2.77E-06	1.20E+04	6.00E-06	1.70E+03	4.24E-05	2.90E+03	2.48E-05	2000	3.60E-05	2.10E+04	3.43E-06
Cesium-134	0.019	980	1.94E-05	510	3.7E-05	720	2.64E-05	530	3.58E-05	1000	1.90E-05	1100	1.73E-05	800	2.38E-05	380	5.00E-05	510	3.73E-05	890	2.13E-05	1100	1.73E-05
Cesium-137	0.241	2.10E+03	1.15E-04	1.10E+03	0.00022	1.50E+03	1.61E-04	1.10E+03	2.19E-04	2.20E+03	1.10E-04	2.40E+03	1.00E-04	1.70E+03	1.42E-04	8.40E+02	2.87E-04	1.10E+03	2.19E-04	1.90E+03	1.27E-04	2.30E+03	1.05E-04
Cobalt-60	0.021	7.10E+02	2.96E-05	3.80E+02	5.5E-05	7.40E+02	2.84E-05	7.20E+02	2.92E-05	7.60E+02	2.76E-05	7.60E+02	2.76E-05	7.50E+02	2.80E-05	6.90E+02	3.04E-05	7.20E+02	2.92E-05	7.50E+02	2.80E-05	7.60E+02	2.76E-05
Europium-152	0.055	5.20E+02	1.06E-04	2.60E+02	0.00021	4.90E+02	1.12E-04	4.50E+02	1.22E-04	5.20E+02	1.06E-04	5.20E+02	1.06E-04	5.10E+02	1.08E-04	4.10E+02	1.34E-04	4.50E+02	1.22E-04	4.90E+02	1.12E-04	5.20E+02	1.06E-04
Plutonium-238	0.010	3.60E+04	2.78E-07	17	0.00059	4.50E+03	2.22E-06	1.40E+03	7.14E-06	9.10E+04	1.10E-07	4.50E+04	2.22E-07	9.30E+03	1.08E-06	8.90E+02	1.12E-05	1.50E+03	6.67E-06	1000	1.00E-05	2.40E+04	4.17E-07
Plutonium-239	0.492	4.10E+04	1.20E-05	18	0.02733	4.80E+03	1.03E-04	1.50E+03	3.28E-04	1.10E+05	4.47E-06	5.10E+04	9.65E-06	1000	4.92E-04	9.40E+02	5.23E-04	1.60E+03	3.08E-04	1000	4.92E-04	2.60E+04	1.89E-05
Ruthenium-106	0.129	not in database																					
Sodium-22	0.020	8.40E+03	2.38E-06	4.50E+03	4.4E-06	7.90E+03	2.53E-06	7.00E+03	2.86E-06	8.90E+03	2.25E-06	9.00E+03	2.22E-06	8.30E+03	2.41E-06	6.10E+03	3.28E-06	7.00E+03	2.86E-06	8.40E+03	2.38E-06	8.90E+03	2.25E-06
Strontium-90	0.183	660	2.77E-04	860	0.00021	980	1.87E-04	890	2.06E-04	1.10E+03	1.66E-04	1600	1.14E-04	510	3.59E-04	680	2.69E-04	570	3.21E-04	800	2.29E-04	1600	1.14E-04
Thorium-228	1.55	700	2.21E-03	17	0.09118	720	2.15E-03	580	2.67E-03	820	1.89E-03	820	1.89E-03	780	1.99E-03	480	3.23E-03	590	2.63E-03	670	2.31E-03	820	1.89E-03
Thorium-230	1.10	4.90E+03	2.24E-04	20	0.055	5.10E+03	2.16E-04	1.60E+03	6.88E-04	7.60E+04	1.45E-05	4.50E+04	2.44E-05	1.00E+04	1.10E-04	1000	1.10E-03	1.80E+03	6.11E-04	1200	9.17E-04	2.50E+04	4.40E-05
Thorium-232	1.48	600	2.47E-03	2.4	0.61667	630	2.35E-03	200	7.40E-03	1.80E+04	8.22E-05	7.60E+03	1.95E-04	1.30E+03	1.14E-03	120	1.23E-02	220	6.73E-03	140	1.06E-02	3.60E+03	4.11E-04
Tritium	53	5.90E+04	8.98E-04	1.70E+05	0.00031	3.10E+05	1.71E-04	3.30E+05	1.61E-04	3.20E+05	1.66E-04	3.40E+05	1.56E-04	3.40E+05	1.56E-04	3.20E+05	1.66E-04	2.90E+05	1.83E-04	3.40E+05	1.56E-04	3.40E+05	1.56E-04
Uranium-234	2.09	2.30E+03	9.09E-04	19	0.11	4.10E+03	5.10E-04	1.80E+03	1.16E-03	7.30E+04	2.86E-05	9.90E+04	2.11E-05	1.00E+04	2.09E-04	1000	2.09E-03	1.90E+03	1.10E-03	7.40E+03	2.82E-04	8.60E+04	2.43E-05
Uranium-235	0.089	1.70E+03	5.24E-05	21	0.00424	2.40E+03	3.71E-05	1.40E+03	6.36E-05	5.00E+03	1.78E-05	5.10E+03	1.75E-05	3.60E+03	2.47E-05	9.60E+02	9.27E-05	1.50E+03	5.93E-05	3.20E+03	2.78E-05	5.10E+03	1.75E-05
Uranium-238	1.37	1.10E+03	1.25E-03	21	0.06524	1.40E+03	9.79E-04	1000	1.37E-03	2.00E+03	6.85E-04	2.10E+03	6.52E-04	1.80E+03	7.61E-04	7.70E+02	1.78E-03	1000	1.37E-03	1.70E+03	8.06E-04	2.10E+03	6.52E-04
Acenaphthene	0.39	0.25				260	0.0015	160	0.0024375	1100	0.000355	8100	4.815E-05										
Acetone	0.049					3.7	0.0132432	37	0.0013243	4.2	0.011667	4900	0.00001	2.20E+03	2.23E-05	4.20E+04	1.17E-06	4.30E+03	1.14E-05	3.10E+05	1.58E-07	5.80E+06	8.45E-09
Anthracene	0.39					390	0.001	220	0.0017727	2700	0.000144	6400	6.094E-05										
Arochlor-1254	0.046	10				4.40E-02	1.0454545	0.022	2.0909091	2.7	0.017037	0.16	0.2875	1.4	3.29E-02	4.10E-02	1.12E+00	8.00E-02	5.75E-01	0.18	2.56E-01	0.24	1.92E-01
Benzo(a)anthracene	0.39	18				4.8	0.08125	3	0.13	11	0.035455	28	0.0139286										
Benzo(a)pyrene	0.390	18	0.021667					9.7	0.0402062	93	0.004194	66	0.0059091										
Benzo(b)fluoranthene	0.39	18	0.021667			73	0.0053425	38	0.0102632	390	0.001	240	0.001625										
Benzo(k)fluoranthene	0.39					110	0.0035455	62	0.0062903	710	0.000549	390	0.001										
Benzoic Acid	2.92					7.2	0.4055556	12	0.2433333	10	0.292	1800	0.0016222										
Bis(2-ethylhexyl)phthalate	0.39					60	0.0065	30	0.013	3500	0.000111	68	0.0057353	23	1.70E-02	1	3.90E-01	1.9	2.05E-01	2.4	1.63E-01	1.8	2.17E-01
Butanone[2-]	0.024					1300	1.846E-05	6100	3.934E-06	1500	0.000016	8.60E+05	2.791E-08										
Chrysene	0.39					4.1	0.095122	2.5	0.156	11	0.035455	23	0.0169565										
DDT[4,4'-]	0.004	3.7	0.001081			2	0.002	1	0.004	190	2.11E-05	4.9	0.0008163	0.12	3.33E-02	0.0026	1.54E+00	5.10E-03	7.84E-01	9.70E-03	4.12E-01	9.90E-03	4.04E-01
Fluoranthene	0.40					48	0.0083333	26	0.0153846	550	0.000727	450	0.0008889										
Phenanthrene	0.40					20	0.02	11	0.0363636	140	0.002857	330	0.0012121										
Pyrene	0.40					29	0.0137931	15	0.0266667	330	0.001212	270	0.0014815										
Toluene	0.006	200	0.00003			72	8.333E-05	71	8.451E-05	150	0.00004	7500	0.0000008										
Trichlorofluoromethane	0.012	not in data base																					
Trimethylbenzene[1,2,4-]	0.009			1.2	0.0075	5.5	0.0016364	3.5	0.0025714	26	0.000346	150	0.00006										
HI of all COPCs			2516.182		41.345		536.931		1085.533		19.887		7.849		11.825		109.476		59.947		15.092		1.629
HI of all COPCs minus AL			792.182		41.345		58.042		105.987		8.238		1.218		8.952		78.690		43.370		10.987		1.463
HI of all COPCs minum AL and CO			778.462		41.345		38.986		68.295		7.523		0.875		1.654		11.435		6.488		1.961		0.901

= 95% UCL is less than both soil and Qbt UTL or maximum of the background data set