Eichinger, Kevin

From: Stilman, Terry
Sent: Friday, September 16, 2016 2:26 PM
To: Berry, Chuck; Eichinger, Kevin
Subject: FW: Colonial Pipeline Spill Tables of ecological screening values
Attachments: Tables 1 - Ecological Surface Water Screening Tables 9_19_16.xlsx; Table 2 Ecological Sediment Screening Table 9_16_16.xlsx; Summary May 2016.xls

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From: Adams, Glenn
Sent: Friday, September 16, 2016 3:20 PM
To: Stilman, Terry <Stilman.Terry@epa.gov>; Harper, Greg <Harper.Greg@epa.gov>; Moore, Tony <moore.tony@epa.gov>
Cc: Thoms, Sharon <Thoms.Sharon@epa.gov>; Thomas, Brett <Thomas.Brett@epa.gov>; Frederick, Tim <Frederick.Tim@epa.gov>; Collins, Arthur <Collins.Arthur@epa.gov>
Subject: FW: Colonial Pipeline Spill Tables of ecological screening values

Terry,
Here is a list of the contaminants that we think would be important to look for in surface water and/or sediments. They are included in these eco (surface water and sediment) screening level table. We don't have eco values for all of these, but my folks are trying to fill in the missing parts. I have also attached the latest version of the RSL table. Eco risk will probably be your "driver" but you can look at the "Tap Water" or soil values in the RSL table for a guide to help you determine potential detection limits. If you collect any data and it exceeds these screening levels, then we can help you look at appropriate action levels for what you are finding (e.g., specifically for fish or swimmers, etc)

As I told you on the phone, I'm in Denver from Sunday thru Friday and won't be of much help to you, but feel free to call if needed. Tim Frederick will be acting for me while I'm out of the office. Below is the contact information for Tim, Brett and Sharon.

I hope this is helpful, but let us know if you have any questions or issues.
Thanks,
Glenn

Tim Frederick, HH Risk 2-8598 (desk) 470-728-7420 (cell)
Brett Thomas, Eco Risk 2-8751 (desk) 404-326-2715 (cell)
Sharon Thoms, Eco Risk 2-8666 (desk) 404-414-3550 (cell)

Glenn Adams, Chief
Scientific Support Section
EPA Region 4 Superfund Division
404-562-8771 (office)

From: Thoms, Sharon
Sent: Friday, September 16, 2016 2:41 PM
To: Adams, Glenn <Adams.Glenn@epa.gov>
Subject: Colonial Pipeline Spill Tables of ecological screening values

Glenn,

I put the names of the chemicals that are recommended for analysis in the tables, but I have not finished filling out the screening values.

Sharon

Sharon Thoms
Life Scientist
Resources & Scientific Integrity Branch
Superfund Division
U.S. EPA Region 4
Atlanta, GA 30303
(404) 562-8666

Table 1a
Region 4 Surface Water Screening Values for Hazardous Waste Sites - Pelham Pipeline Spill
09/16/2016

Chemical	CAS	Freshwater Screening Values (µg/L)		
		Chronic	Acute	Source
Inorganic Compounds				
Metals				
Nickel (filtered) ^ *	7440-02-0	28.9	260	a
Vanadium	7440-62-2	27	79	b
Volatile Organic Compounds (VOCs)				
Monoaromatic hydrocarbons				
1,2,4-Trimethylbenzene	95-63-6	15	140	b
1,3,5-Trimethylbenzene	108-67-8	26	230	b
Benzene	71-43-2	160	700	b
Cymene, p- (4-Isopropyltoluene)	99-87-6	16	150	b
Ethylbenzene	100-41-4	61	550	b
Isopropylbenzene (Cumene)	98-82-8	4.8	43	b
Styrene (vinyl benzene)	100-42-5	32	290	b
Toluene	108-88-3	62	560	b
Xylenes (total)	1330-20-7	27	240	b
Tetrahydrofuran	109-99-9	11,000	74,000	b
Semivolatile Organic Compounds				
Aliphatic Hydrocarbons				
Pentane				
Cyclopentane				
Hexane				
Cyclohexane	110-82-7	230	1,190	e, i
Heptane				
Octane				
Isooctane				
Nonane				
Decane	124-18-5	49	880	c
Polycyclic Aromatic Hydrocarbons (PAHs)				
1-Methylnaphthalene	90-12-0	6.1	109	b
2-Methylnaphthalene	91-57-6	4.7	42	b
Acenaphthene	83-32-9	15	19	b
Acenaphthylene	208-96-8	13	120	b
Anthracene	120-12-7	0.02	0.18	b
Benz(a)anthracene	56-55-3	4.7	42	b
Benzo(a)pyrene	50-32-8	0.060	0.54	b
Benzo(b)fluoranthene	205-99-2	2.6	23	b
Benzo(g,h,i)perylene	191-24-2	0.44	0.91	q
Benzo(k)fluoranthene	207-08-9	0.64	1.3	q
Chrysene	218-01-9	4.7	42	b
Dibenz(a,h)anthracene	53-70-3	0.28	0.59	q
Fluoranthene	206-44-0	0.8	3.7	b
Fluorene	86-73-7	19	110	b
Indeno(1,2,3-cd)pyrene	193-39-5	0.28	0.6	q
Naphthalene	91-20-3	21	170	b
Phenanthrene	85-01-8	2.3	31	b
Pyrene	129-00-0	4.6	42	b
Other SVOCs				
1,1-Biphenyl	92-52-4	6.5	26	b
Dibenzofuran	132-64-9	4	36	b
Bulk Petroleum Hydrocarbons, µg/L				
Gasoline Range Organics		114		
Total Petroleum Hydrocarbons - Diesel	68334-30-5			
Total Petroleum Hydrocarbons - Residual	68476-53-9			

Table 1a
Region 4 Surface Water Screening Values for Hazardous Waste Sites - Pelham Pipeline Spill
09/16/2016

Chemical	CAS	Freshwater Screening Values (µg/L)		
		Chronic	Acute	Source

Table 1a Notes:

Red font indicates a bioaccumulative chemical.

^ - Screening value is for **filtered (dissolved)** metals. A conversion factor (CF) was used to convert the screening value for total metals in surface water to a screening value for dissolved metals in surface water. CMC (dissolved) = CMC (total) × CF. See Table 1c for screening values for **total (unfiltered)** metals.

* - The freshwater screening value is hardness dependent. The screening value shown in Table 1a is for **dissolved metals assuming a hardness of 50 mg/L as $CaCO_3$**. A correction for site-specific hardness was based on equations listed in Tables 1b and 1c. If hardness data are unavailable hardness may be estimated as: H = 2.497 × Ca (mg/L) + 4.118 × Mg (mg/L).

- Freshwater criteria for pentachlorophenol are pH Dependent. Values displayed are for a pH of 7.8.

^^ - Criteria for ammonia are pH, temperature, and lifestage dependent.

** - Selenium concentrations in water do not reflect dietary sources to aquatic life and screening against these numbers may not be adequately protective.

Table 1a Sources:

a - National Recommended Water Quality Criteria http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm

a~ - Per the NRWQC, when comparing the maximum detected value, the higher number should be used; but if comparing to an average or 95%UCL, the lower number should be used.

aa - Tier 2 value.

b - Great Lakes Initiative (GLI) Clearinghouse resources Tier II criteria revised 2013 http://www2.epa.gov/gliclearinghouse/

c - Suter, G.W. II, and Tsao, C.L. 1996. Toxicological benchmarks for screening potential contaminants of concern for effects on aquatic biota: 1996 Revision. ES/ER/TM-96/R2. http://www.esd.ornl.gov/programs/ecorisk/documents/tm96r2.pdf

d - Florida State Criteria for Surface Water Quality Classifications http://www.dep.state.fl.us/legal/Rules/shared/62-302/302-Table.pdf

e - North Carolina Department of Natural Resources (NCDNR) Surface Water Standards http://deq.nc.gov/about/divisions/water-resources/planning/classification-standards/surface-water-standards#WQSTables

f - Georgia Department of Natural Resources (GADNR) Water Use Classifications and Water Quality Standards http://rules.sos.state.ga.us/docs/391/3/6/03.pdf

g - Hawaii Department of Health (HDOH) Environmental Action Levels, Chronic and Acute Surface Water (Aquatic Habitat) Standards http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/environmental-hazard-evaluation-and-environmental-action-levels

h - CCME (Canadian Council of Ministers of the Environment). 2003. Canadian Environmental Quality Guidelines: Summary Table December 2003. Canadian Council of Ministers of the Environment, Winnipeg, Manitoba. Available at: http://www.ccme.ca/en/resources/canadian_environmental_quality_guidelines/index.html

i - McGrath and Di Toro (2009) Model - See text Section 6.1.4 Equation 1.

j - ECOSAR program predicted lowest chronic or acute value. See Section 6.1.4 in text.

k - Talmadge et al. (1999)

l - New York Ambient Water Quality Criteria and Guidance Values: http://www.dec.ny.gov/docs/water_pdf/togs111.pdf

m - New Jersey Department of Environmental Protection (NJDEP) Ecological Screening Criteria http://www.nj.gov/dep/srp/guidance/ecoscreening/esc_table.pdf

n - Michican Water Quality Values - Rule 57: http://www.michigan.gov/deq/0,4561,7-135-3313_3686_3728-11383--,00.html

o - Texas Surface Water Quality Standards: https://www.tceq.texas.gov/waterquality/standards/2014standards.html

p - Mississippi Water Quality Standards: http://www.deq.state.ms.us/mdeq.nsf/page/WQSB_Water_Quality_Standards

q - U.S. EPA. 2003a. Procedures for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures. Office of Research and Development, Washington, DC. EPA/600/R-02/013. Available at: http://www.udel.edu/udaily/2010/jun/images/PAHESB.pdf

r - Office of Pesticide Programs (OPP) Aquatic Life Benchmarks: http://www.epa.gov/pesticide-science-and-assessing-pesticide-risks/aquatic-life-benchmarks-pesticide-registration

s - Louisiana DEQ Water Quality Standards: http://www.deq.louisiana.gov/portal/Portals/0/planning/regs/title33/33v09-201512%20Water%20Quality%202a.pdf