To: Whitley, Christopher[Whitley.Christopher@epa.gov]
Cc: John Emshwiller[john.emshwiller@wsj.com]
From: Emshwiller, John
Sent: Fri 12/18/2015 4:55:25 PM
Subject: Re: Follow-up questions re WSJ Story Inquiry re West Lake and Lead-210

Chris,

Thanks. I do have two quick follow-up question based on an email that I just got back from Rene Poche in the press office of the Army Corps of Engineers. Rene said the Corps has a remediation goal for Lead-210 in soil of 5 pCi/g for the top six inches and 15 pCi/g below six inches. The EPA's BMAC report said the the Corps had no remediation goal for Lead-210. I'll ask Rene when this goal came into effect, though I suspect it has been in existence for a number of years, given how long the Corps has been doing clean-up in the St. Louis area. So my questions: one, does the EPA a have comment on this possible error in the BMAC report? Two, why would the BMAC report use a potential clean-up trigger for Lead-210 (33.5 pCi/g) that is up to six times higher than the one being used in the St. Louis area by the Corps of Engineers?

Also, it doesn't seem that your colleagues quite addressed my question of why the BMAC report chose a much more lenient risk standard at the St. Louis athletic complex than the EPA chose to use at Fernald. Based on the Fernald standard at least some of the readings at BMAC exceeded what would have been allowed under the EPA's 2.2 pCi/g Fernald standard. Does the EPA have any further comment on this?

Thanks and best,
John

On Fri, Dec 18, 2015 at 8:15 AM, Whitley, Christopher <Whitley.Christopher@epa.gov> wrote:

John,

Answers to your questions:

Reading through the BMAC reports you sent links for, I notice that the final pre-CERCLIS report chose to cite (on page 9, Table 4) a remediation level in the soil for Lead-210 of 33.5pCi/g, which it said was the PRG for a 1 in 10,000 additional risk level. Some questions related to these numbers:

1. Why did the EPA choose the 1-in-10,000 risk range when, as I understand it, the agency's own guidelines (and perhaps federal law) requires getting as close as can be reasonably done to get down to a 1 in a million additional risk. Using a 1-in-a-million risk standard, wouldn't some of the Lead-210 readings at the BMAC exceed the PRG? If so, wouldn't that suggest remediation is needed?

EPA generally sets remediation goals in the risk range of 1-in-10,000 to 1-in-1,000,000. The need for a response action is site specific but generally is triggered by a cancer risk exceeding the 1-in-10,000 risk level. For further discussion about how EPA uses the risk range, see "*Radiation Risk Assessment at CERCLA Sites: Q & A*." May 2014, and OSWER Directive 9355.0-30, "*Role of the Baseline Risk Assessment in Superfund Remedy Selection Decisions*". These documents can be found under the tab *Superfund Risk Assessment Guidance:*

http://www.epa.gov/superfund/radiation-superfund-sites

The "Radiation Risk Assessment at CERCLA Sites: Q & A." also discusses how levels of each constituent of potential concern at a site are typically compared with background levels for those constituents to determine whether site activities have resulted in elevated levels. Remedial site risk-based cleanup levels for individual radionuclides generally are not set below site-specific background levels. It should be noted that some ARARs specifically address how to factor background into cleanup levels. For example, many radiation standards are established at increments above background levels. For further information regarding background, see the Role of Background in the CERCLA Cleanup Program and the section "Background Contamination" in OSWER Directive 9200.4-18.

Specifically for BMAC, the Region's explanation for our decision is explained in our August 27, 2014 West Lake Update, which can be found at this link:

http://www3.epa.gov/region07/cleanup/west_lake_landfill/pdf/west-lake-update-08-27-2014.pdf

2. In the clean-up of the federal complex at Fernald, Ohio, the EPA's Record of Decision (a copy of which is attached) set the offsite remediation level for Lead-210 in the soil at 2.2 pCi/g. (See Table 9-3). It would appear from the BMAC report that the

EPA isn't using that remediation level related to West Lake or contamination generally in the St. Louis area. If the agency isn't using that level, why not?

Lead-210 is a decay product of radon-222 and uranium-238. The 22-year half-life provides opportunities for naturally occurring buildup of lead-210 and progeny in sediments and low-lying areas. Rain acts to scavenge radon progeny from the air, and areas where rain collects and concentrates can result in elevated levels of lead-210 and progeny over time. EPA concluded that the levels of Lead-210 found at BMAC were consistent with what is expected to be naturally occurring.

Additional information regarding BMAC, Lead-210 can be found on an archived *West Lake Update* from August 27, 2014:

http://www3.epa.gov/region07/cleanup/west_lake_landfill/

http://www3.epa.gov/region07/cleanup/west_lake_landfill/pdf/west-lake-update-08-27-2014.pdf

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