

Docket 40-6940

From: "Schoenfelder, Robert P." <R.Schoenfelder@WestonSolutions.com>
To: "NRC-HQ, Elaine" <esb@nrc.gov>
Date: 9/26/03 3:46PM
Subject: FW: Filtercake data comparison to background.

Elaine;

This is the layman's comparison of the levels in filtercake to levels in common materials and background I drafted for Cabot.

-Bob

> -----Original Message-----

> From: Schoenfelder, Robert P.
 > Sent: Friday, September 12, 2003 12:44 PM
 > To: 'Tim Knapp'
 > Cc: Schoenfelder, Robert P.
 > Subject: Filtercake data comparison to background.

>

> Tim;

> I researched several sources of data for U and Th concentrations in
 > background soils. The results are provided briefly below. Please let me
 > know if you need further explanation. Please note the Filtercake
 > information is taken from the EA that is about to be released by the NRC
 > as part of your license renewal. Regards,
 > -Bob

>

>

> The wastewater filtercake that will be used as supplemental feed to the
 > cement kilns at Lehigh consists of solid materials that result from a
 > waste stream that excludes the radioactive constituents of Cabot's feed
 > materials. There are (low) background levels of radioactivity in
 > virtually all materials in this world, and the levels of radioactivity in
 > the filtercake are in the range of those natural background levels. The
 > constituents of the filtercake are low enough that the U.S. Nuclear
 > Regulatory Commission (NRC) has allowed Cabot to monitor the levels of
 > radioactivity in the filtercake and transport it to municipal landfills
 > for disposal for the past 10 years or more.

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> The NRC requires that the filtercake contain less than 10 pCi/g of uranium
 > (U) and thorium (Th) in order to be released to a landfill. The average
 > values that were measured in the filtercake from 1999 through September of
 > 2002 were about 25% of that limit. A comparison between the filtercake
 > concentrations and natural background levels of uranium and thorium is
 > presented in table 1, below.

>

> Table 1. Comparison of Filtercake Radioactivity to Natural Background
 > (pCi/g)

	Filtercake	Local Soils ^a	UNSCEAR ^b	Granite ^c
Total U	2.8	1.6	2.1	6.6
Total Th	0.11	1.7	2.0	8

> a Data from January 2003 analyses of soil samples taken from 10
 > background locations at the Cabot site in Boyertown, PA.

> b Average background values taken from Table 5 of the 2000 UNSCEAR
 > Report to the General Assembly, Volume 1, United Nations Scientific
 > Committee on the Effects of Atomic Radiation.

> c National Water Research Institute, Canada

>

- > Values in Table 1 for local soils and from the UNSCEAR Report are provided
- > for direct comparison with the measured values from the filtercake. The
- > values for granite are provided as examples of radionuclide concentrations
- > in a naturally-occurring mineral that is not regulated due to its
- > radioactive constituents and that is a commonly used construction material
- > in residences and commercial structures. These data demonstrate that the
- > filtercake does not contain radioactive constituents from the ores
- > processed at the Boyertown facility that are significantly different than
- > average concentrations in background soils, and will not present a health
- > hazard when processed in the cement kiln.
- >
- >

CC: "Tim Knapp" <Timothy_Knapp@cabot-corp.com>, "Schoenfelder, Robert P." <R.Schoenfelder@WestonSolutions.com>

Mail Envelope Properties (40228E8E.B3C : 17 : 21116)

Subject: Fwd: FW: Filtercake data comparison to background.
Creation Date: 2/5/04 1:42PM
From: Elaine Brummett

Created By: ESB@nrc.gov

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