To: Sayles, Gregory[Sayles.Gregory@epa.gov]
From: Lindquist, Alan
Sent: Tue 2/25/2014 9:35:30 AM
Subject: Re: West Virginia spill questions

The flushing module was released with the first version of the toolkit in January. Shortly after the spill.

Alan

From: Sayles, Gregory
Sent: Monday, February 24, 2014 8:16:14 PM
To: Lindquist, Alan
Subject: Re: West Virginia spill questions

Terra's flushing work is not mature yet. Right?

From: Lindquist, Alan
Sent: Monday, February 24, 2014 7:48:34 PM
To: Sayles, Gregory; Ernst, Hiba
Subject: Fw: West Virginia spill questions

Steve sent this just now.

Alan

From: Allgeier, Steve
Sent: Monday, February 24, 2014 7:47:25 PM
To: Lindquist, Alan; Magnuson, Matthew; Travers, David; Szabo, Jeff; Hall, John; binetti, victoria
Subject: FW: West Virginia spill questions

All,

The following email shows the response that Caroline provided to the WSJ reporter. I'll send a response to her flushing question first thing tomorrow, which will include information about the new modeling tool kit that was in our initial list. I'll also check a few other guidance documents that may have some information about flushing practices. If anyone has a specific product related to flushing that could be included in the response, please send me the info. I'll copy everyone on the response to Caroline.

Thanks,
Steve

From: Behringer, Caroline
Sent: Monday, February 24, 2014 6:31 PM
To: Allgeier, Steve
Cc: Perry, Dale

Subject: Fw: West Virginia spill questions

Steve - See the follow up question below. Would you be able to point out a specific study here?

Caroline Behringer
Deputy Press Secretary
Office of the Administrator
U.S. Environmental Protection Agency
Office: (202) 564-0098
Cell: (202) 760-1732

From: Berzon, Alexandra Ex. 6 - Personal Privacy
Sent: Monday, February 24, 2014 4:21:48 PM
To: Behringer, Caroline
Subject: RE: West Virginia spill questions

Thanks very much Caroline – I just want to double check – does the EPA have any specific guidelines or research on how to do flushing in a decontamination event? If it is covered in one of the studies below please just point that out. Thanks.

From: Behringer, Caroline [mailto:Behringer.Caroline@epa.gov]
Sent: Monday, February 24, 2014 12:58 PM
To: Berzon, Alexandra
Subject: RE: West Virginia spill questions

Alexandra,

Here's some additional information on an earlier question you had asked, as well as the question you asked regarding Mr. Whelton, since the two are related.

Thanks,
Caroline

Question: I also would like to know more broadly what do we know about what happens when a chemical gets into water pipes and what testing/work is being done on this or has been done? I believe this would be part of the EPA's water security work.

Response: US EPA has conducted extensive research and developed numerous programs and products that directly address the technical and logistical issues and challenges associated with drinking water distribution system contamination. However, we have not done any work on the specific chemical involved in the WV spill – MCHM.

A non-technical overview of some of EPA's research in this area can be found in a recent edition of EPA's "Science Matters" newsletter available at http://www.epa.gov/sciencematters/homeland/index.htm

A few examples of these products are listed below:

1. Decontamination of chemical agents from drinking water infrastructure: A literature review and

summary: This is a literature review by US EPA with contributions by Environment Canada. It is a summary of chemical agent persistence on drinking water infrastructure (distribution system and home plumbing). It contains organic chemical data on chlordane, p-dichlorobenzene, parathion, chloropyrifos, and sodium fluoroacetate. This article is in-press in the high-impact factor, international, peer reviewed journal *Environment International.* A corrected proof provided by the journal is in the file "chem scoping report.pdf"

2. Chemical Contaminant Persistence and Decontamination in Drinking Water Pipes: This US EPA report presents a standardized persistence and decontamination experimental design protocol that can be used across laboratories to perform drinking water pipe decontamination research. Using the protocol, the report evaluation decontamination alternatives, such as flushing and hyperchlorination, for removal of organic contaminants (sodium fluoroacetate and chlordane) from simulated piping materials, such as cement mortar lined iron and PVC plastic. EPA/600/R-12/514, 2012 available at http://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=506663

3. Pilot-scale tests and systems evaluation for the containment, treatment, and decontamination of selected materials from T&E building pipe loop equipment: This US EPA report contains the results of decontamination studies that utilized cement-mortar pipe material, which is commonly used in drinking water distribution systems. Chemicals evaluated in this study include arsenic, mercury and chlordane. EPA/600/R08/016, 2008 available at http://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=498218

Question: Andrew Whelton from the University of Southern Alabama who is working heavily in WV right has said publicly (including today at a press conference in Charleston) that the studies from the EPA did not look specifically at how chemicals stay or can be removed specifically from piping in people's homes. He's saying that this has never been really studied in a civilian context and is critical on the EPA's water security work on this. Can you respond to that and tell me if he's right that this has not been studied or point to any studies that do look at that?

Response: In the media coverage we've seen, Mr. Whelton says that "authorities have little to no information about exactly what this chemical does to drinking water plumbing systems." To our knowledge, there are no studies that investigate the fate and transport of MCHM in either distribution system or household plumbing systems. A new study would need to be designed and implemented to characterize the interaction between MCHM and common plumbing materials.

However, EPA has studied chemical interactions in household plumbing systems. In the studies listed above and below, we focused on high priority contaminants. MCHM was not on a priority list. There are 100's of types of pipe materials, and 10's of thousands of contaminants (not just chemical, but also biological and radiological). We must approach research strategically, focusing on the highest priority contaminants, and studying a diverse set of contaminants and materials so that we can use those results to hypothesize about the behavior of other contaminants or materials that were not directly tested.

A few examples are:

1. US EPA collaborated with the National Institute of Standards and Technology (NIST) on a study that evaluated contaminant accumulation and subsequent decontamination of premise plumbing systems (i.e., "plumbing in people's homes"). The results from this study were

published in September 2009 and can be found at: http://cfpub.epa.gov/si/si_public_file_download.cfm?p_download_id=506685 which is the final report from the study. NIST also published as "NIST Technical Note 2009-1652" in 2009, which published some initial recommendations for building plumbing system decontamination http://www.nist.gov/manuscript-publication-search.cfm?pub_id=861645

2. The studies in the responses to the first question highlighted above have involved studies with a number of pipe materials, including those used in residential and building plumbing. Thus, these results are applicable to people's homes.

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From: Berzon, Alexandra [Ex. 6 - Personal Privacy
Sent: Monday, February 24, 2014 3:00 PM
To: Behringer, Caroline
Subject: RE: West Virginia spill questions

I also have not received a response to this question. Thank you.

From: Berzon, Alexandra
Sent: Friday, February 21, 2014 1:31 PM
To: 'Behringer, Caroline'
Subject: RE: West Virginia spill questions

Thanks Caroline – Andrew Whelton from the University of Southern Alabama who is working heavily in WV right has said publicly (including today at a press conference in Charleston) that the studies from the EPA did not look specifically at how chemicals stay or can be removed specifically from piping in people's homes. He's saying that this has never been really studied in a civilian context and is critical on the EPA's water security work on this. Can you respond to that and tell me if he's right that this has not been studied or point to any studies that do look at that?

From: Behringer, Caroline [mailto:Behringer.Caroline@epa.gov]
Sent: Friday, February 21, 2014 1:28 PM
To: Berzon, Alexandra
Subject: RE: West Virginia spill questions

Hey Alexandra,

Here's an answer to one of your original questions. Still working on the others.

I also would like to know more broadly what do we know about what happens when a chemical gets into water pipes and what testing/work is being done on this or has been done? I believe this would be part of the EPA's water security work.

EPA has publically available documents about the various issues in cleaning a water distribution system. These will not speak to the specific characteristics of any chemical or why some chemicals are harder to clean than others. http://water.epa.gov/infrastructure/watersecurity/emerplan/index.cfm#pp8

Thanks,
Caroline

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From: Berzon, Alexandra [Ex. 6 - Personal Privacy
Sent: Friday, February 21, 2014 3:45 PM
To: Behringer, Caroline
Subject: RE: West Virginia spill questions

This was the response from the water company – do you know if this is referring to the same report?

My understanding is that the information given to the EPA was not a report on flushing. It is information taken from a study conducted by the Water Research Foundation dealing with contaminants (not MCHM) in water distribution systems and it is not a public document.

From: Behringer, Caroline [mailto:Behringer.Caroline@epa.gov]
Sent: Thursday, February 20, 2014 3:34 PM
To: Berzon, Alexandra
Subject: RE: West Virginia spill questions

I don't know if they've been giving it out – you'd need to ask them.

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From: Berzon, Alexandra [Ex. 6 - Personal Privacy
Sent: Thursday, February 20, 2014 6:54 PM
To: Behringer, Caroline
Subject: RE: West Virginia spill questions

☺ I will ask them but do you know if they have been giving this out? They are not a public agency so that's why I am starting with the EPA which I think should also provide it. Thanks.

From: Behringer, Caroline [mailto:Behringer.Caroline@epa.gov]

Sent: Thursday, February 20, 2014 3:33 PM
To: Berzon, Alexandra
Subject: RE: West Virginia spill questions

Please ask WVAW for a copy of that document.

Thanks,
Caorline

Caroline Behringer
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From: Berzon, Alexandra [Ex. 6 - Personal Privacy
Sent: Thursday, February 20, 2014 6:32 PM
To: Behringer, Caroline
Subject: RE: West Virginia spill questions

I will ask them but is it possible for you to please send as well? Thank you.

From: Behringer, Caroline [mailto:Behringer.Caroline@epa.gov]
Sent: Thursday, February 20, 2014 3:32 PM
To: Berzon, Alexandra
Subject: RE: West Virginia spill questions

Please also reach out to WVAW for a copy of the document.

Thanks,
Caroline

Caroline Behringer
Deputy Press Secretary
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U.S. Environmental Protection Agency
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From: Behringer, Caroline
Sent: Thursday, February 20, 2014 6:31 PM
To: 'Berzon, Alexandra'
Subject: RE: West Virginia spill questions

Alexandra – You would obviously need to FOIA the correspondence between the two groups. I'll work on getting you responses for the rest.

Thanks,

Caroline

Caroline Behringer
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From: Berzon, Alexandra [Ex. 6 - Personal Privacy
Sent: Thursday, February 20, 2014 6:29 PM
To: Behringer, Caroline
Subject: RE: West Virginia spill questions

Thanks Caroline – can you please send me the draft document or a description from WVAW . Was this in response to an EPA inquiry on this? Why did the EPA make that inquiry? Is there concern about the method (I have heard from an outside scientist some concerns)? Can you please send me all correspondence between the EPA and WVAW on this? Thanks.

From: Behringer, Caroline [mailto:Behringer.Caroline@epa.gov]
Sent: Thursday, February 20, 2014 3:26 PM
To: Berzon, Alexandra
Subject: West Virginia spill questions

Alexandra,

In response to your questions to our Region 3 office, I'm including some information below. I'm also attaching the two reports you requested, and we're working on a response to your question about chemicals in pipes.

In WV we would like to know what is the EPA's involvement in terms of understanding why there still appears to be an odor from MCHM in some places in Charleston and some lingering health effects being reported.
EPA received a draft summary document from West Virginia American Water Company (WVAWC) on February 18, 2014, which describes the approach, and the science behind the approach, WVAWC took in concluding that their flushing method would be effective in removing MCHM from the water distribution system. EPA is conducting an internal review of the document. (see additional information below about MCHM odor at the tank site)

What work is the EPA still doing in West Virginia and what do they understand at this point about the situation?
An EPA On-Scene Coordinator has been on the ground in Charleston at the Freedom Industries tank farm, where the spill occurred since day-two of the response. The site is stabilized and work continues to control the source of the contamination at the site. EPA has observed the emptying of the leaked tank and its two companion tanks. The remaining 14 tanks are being systematically emptied. The collection trenches, sumps and collection piping are collecting the water and remaining chemical that was under the leaked tank. EPA's OSC has reported that the snow and rain have generated considerable amounts of water through the facility, both surface and subsurface water. EPA, WV Department of Environmental Protection and Freedom Industries have sampled the water collected from several points

on the site, which are being analyzed. The collection mechanisms have been effective in containing the water that continues to seep from the site. The facility has hired a contractor to develop a long term remediation plan to find and remove any residual contamination.

EPA's OSC anticipates reports of odor complaints when tanks are moved, during excavation, and also as the weather warms up. The odor is present on site, however, in colder temperatures the odor diminishes at the perimeter of the facility, according to EPA's OSC. WVDEP has requested EPA to do air monitoring around the site during the removal of three specific tanks that did not contain MCHM and PHH. EPA's air monitoring analytical method is under development.

Do you know who came up with the flushing instructions to residents – was the EPA involved in that and what research was that based on?
The State and West Virginia American Water Company (WVAWC) developed a flushing protocol for homeowners to flush their household plumbing.

Thanks,
Caroline

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