From: Kady, Thomas
To: Coltrain, Katrina
Subject: RE: Wilcox - PSG and soil borings
Date: Thursday, June 16, 2016 2:20:58 PM

Hi Katrina –

My overall impression is there are too many points in the areas of known contamination and too few to determine if there is migration from those areas toward receptors (homes, creeks, etc.). From a DQO perspective, what questions are trying to answer, and do the proposed quantities/locations of points answer those questions? Here are my thoughts:

1. Tank 5 in the East Tank Farm.

   Question 1: Given the relatively low concentrations of PAHs, are there associated vapors at significant concentrations? I believe 3-5 points just above the plume footprint would answer this question.

   Question 2: Are there single-ring aromatic compounds, and other volatile compounds not detected by LIF, present in the plume area at significant concentrations? The same 3-5 points should answer that question.

   Question 3: Is there evidence of migration of either PAH or single-ring aromatic compounds migrating toward the home or downhill toward the pond or tributary. A transect of 3 to 4 points at a reasonable distance between the source and the potential receptor should answer that question.

   Using that logic, I'd locate 3-5 in the source area and two transects of 3-4 points about 50 feet away (one toward the home and one toward the pond). Total 9-13 points. About the same number, but located differently.

2. Lorraine and Wilcox grossly contaminated areas.

   Question 1 (answered) - Given the very high concentrations of known polyaromatic hydrocarbon contamination in these areas, associated vapors at significant concentrations surely exist.

   Question 2: Are there single-ring aromatic compounds and other compounds the LIF does not detect present at significant concentrations (to human health, the environment or the eventual remediation project). Approximately 25% of the proposed locations would answer that question. Keep in mind, passive sampling is typically done to identify unknown/suspected sources, which is why the manufacturer's recommended density of points is that high. In areas of confirmed sources, this density is not necessary.

   Question 3: Are there COCs in areas where LIF did not indicate significant contamination (e.g., Wilcox process areas)? Since single-ring aromatics (e.g., BTEX) and other COCs would have surely been produced/stored in the process areas, it is important to look for them. In this case, the locations and quantity of points appears more in line. Given all of

the steel/concrete obstructions and dense vegetation in this area, it may impractical to get all of these points in place. The goal, however, should be to cover the area as best as we can to answer this question.

Question 4: Is there evidence of migration of COCs from known or unknown source areas toward receptors (homes or creeks). Using the same logic as Tank 5, place transects between suspected/confirmed source areas and the receptors. The goal is not so much to confirm the source areas, but to confirm/identify the migration pathways (e.g., if there are seeps to the creeks, where are they likely to be?).

Bottom line, it appears the density of points in known source areas is way too high. This proposed density appears to be designed for unknown/suspected source areas. This density can be reduced significantly (~25% of what is proposed). Use another 25% to put in more migration pathway transects. I think you'll better answer the pertinent questions with 50% of the level of effort. Obviously, I'm using round numbers; the logic behind the number of points and their locations is what's important.

Hope that helps.

Tom

From: Coltrain, Katrina
Sent: Monday, June 13, 2016 10:43 AM
To: McMillan, Teresa <tmcmillan@eaest.com>; Kady, Thomas <Kady.Thomas@epa.gov>
Cc: lvega_eaest.com <lvega@eaest.com>; Todd Downham <todd.downham@deq.ok.gov>
Subject: Wilcox - PSG and soil borings

Teri, please see attached. I think it is important to include Tank 5 during the first investigation of VI because of the resident. I have reduced the number of locations to 10 to better cover where the ROST/LIF indicated fluorescence. Because of that, Lorraine and Wilcox numbers were reduced. I moved some locations to increase coverage and with the expectation that information related to that location could be interpolated from those locations around it. I also reduced the number along the utility right of way towards the south. If there are hits, perhaps we can fill those during Mob 2. Again, all of these location are contingent on the ERT funding available.

If funding is available we can include soil borings for the East Tank Farm Area 14-17 and the unknown bldg location just south of Tank 6. In addition, I placed a call to Deana last week asking what kind of field support she would need. It is expected that the vertical depth samples will require the use of equipment which you will have onsite. I have not heard back from her. I will follow-up today.

Tom, please see revised figures. Let us know what changes may be necessary.

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