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From: Michael Scorca/R2/USEPA/US
To: Doug Tomchuk/R2/USEPA/US@EPA
cc: John Prince/R2/USEPA/US@EPA, Vince Pitruzzello/R2/USEPA/US@EPA, Michael Sivak/R2/USEPA/US@EPA, Michael Scorca/R2/USEPA/US@EPA, Reyhan.Mehran@noaa.gov

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Date: Friday, August 26, 2005 03:18PM
Subject: review of Ventron OU-1 propose plan

Hi Doug,
I am providing some comments on the proposed plan for OU-1 at the Ventron site. The version I had did not include any figures.

As we have discussed, some other approaches or combinations of remedies, could have been considered to result in a more effective remedy. Overall, the proposed plan is not clear about several parts of the remedy.

1) Pg. 4 - Geologic units - A brief discussion of the undifferentiated fine-grained deposits should be included here, as it was in the RI report

2) Pg. 4 - The text states that "Ground water in the developed area flows generally north to south under the U.S. Life Warehouse and then likely turns to the west-southwest as it meets the radial flow from the undeveloped area." Although this could be accurate in a local area at a given point in time, it is not the best description of flow in the area. The RI report water-table figures also show that water beneath the developed area often has a northwest to southeast component. It also doesn't seem likely that the groundwater turns to the southwest here. It is more probable that flow is directed toward the West Ditch as a drainage feature, rather than turning back on itself.

3a) Pg. 4 - The text states that "The combination of the radial flow pattern in the undeveloped area and regional flow from the north appears to create a zone with low ground water gradients in the vicinity of the Wolf Warehouse. The flow direction is consistently from the undeveloped area toward the developed area in the vicinity of the Wolf Warehouse." This is possibly true for one part of the area, which probably is draining to the West Ditch. Overall, ground water in the undeveloped area flows to the surface water bodies that surround it on 3 sides.

3b) Also note that if the premise of the Feasibility Study, App. B is correct, and

that denser groundwater (due to dissolved saltwater) is present in the study area, it would affect hydraulic heads and ground-water flow.

4) Pg. 8, Alternative G3, Hydraulic controls via pumping - Will mercury be treated by filtration by granular activated carbon? Is it more likely to build up in the sand filters in the solids? How will the solids residue be disposed of?

5) Capping Alternatives - Placing only a 4" asphalt cap atop the soils could be not as effective as required. A more secure cap that will prevent migration of contaminants and seal against infiltration of water should be installed. Note that on page 5, the text notes that air sampling at the Wolf Warehouse detected volatilized mercury at 30.39 ng/m3. Although this value is below standard, it suggests that the cap as constructed is allowing mercury to mobilize along at least one pathway.

6) Pg. 10 - The text states that the natural attenuation and institutional controls remedy (G2) will be protective of the environment. The natural attenuation processes as described in the feasibility study suggest that mercury attenuation will occur through a reduced flux rate. This remedy could slow down ground water transport, but it would not completely cut off the mass flux and thus may not be fully protective of the environment.

7) Pg. 10 - The text says that Alternative G3 is not protective of the environment since there is a risk that pumping ground water may deprive the wetland and Berry's Creek of a primary water source, thus resulting in natural resource injury. Note that this is somewhat contrary to the earlier conclusion that flow is from the undeveloped area to the developed area.

8a) In order to promote proper drainage of the site's surface water, 1 foot of soil will be excavated from West Ditch and a geomembrane liner will be installed. Because the West Ditch sediments probably contain significant levels of mercury, samples should be collected during the soil excavation to check if additional material will need to removed during the excavation.

8b) Also note that in the Feasibility Study, App. B, it was suggested that water should be diverted to West Ditch to prevent flooding in the developed area. This process would likely be a pathway for water that is impacted by mercury to be channeled to surface waters and should not be implemented.

9) pg 14 - The treatment of soil would consist of retorting or roasting in a thermal processing unit capable of volatilizing mercury. I am not familiar with this

process and I have several questions.
- Is it similar to the process used to mine mercury ore?
- Is this really the most efficient way to treat this soil?
- Will this completely treat the soil and remove all the mercury?
- Will post-treatment sampling be conducted?
- What temperatures will be needed to fully volatilize the mercury?
- Will this process be able to remove all forms of mercury in addition to its elemental form?

10) The proposed plan is not consistent in its discussions of the fate of excavated soil. Sometimes it says it will be put under the cap. Sometimes it says it will be treated and put under the cap. Sometimes it says it will be treated and disposed of off-site.

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08/26/2005 03:18 PM

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