

## Joseph Martella

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**From:** Barbara Morin  
**Sent:** Monday, August 01, 2011 1:00 PM  
**To:** Margaret Kilpatrick  
**Cc:** Joseph Martella; Gina Friedman  
**Subject:** RE: Tidewater - Pipe Removal Activities

Meg-

The Office of Air Resources reviewed the Regulation No. 9 applicability evaluation that you submitted for the pipe removal process and have the following comments:

1. A worst case calculation of emissions associated with the soil removal process, which assumed that 20 ft<sup>3</sup> of material will be removed, that all of that material is contaminated at the maximum concentration measured for each pollutant in any of the samples, and that all of the contaminants evaporate during the excavation, yielded an emissions estimate that was substantially lower than the threshold quantities for a Regulation No. 9 permit. Therefore, we are not concerned with that part of the operation.
2. We do, however, have concerns about the pipe removal calculations, including:
  - a. The analysis assumed that the content of the material in the pipe is the same as that of the NAPL in a well on the site, but does not provide any evidence that the two materials are similar. Unless there is some reason that a sample cannot be obtained, the content of the material in the pipe, particularly the concentrations of naphthalene and benzene, should be determined.
  - b. The analysis assumed that the temperature in the pipe would be 15° C, (59°F) during the pipe removal. This is an inappropriate assumption, particularly since the removal is slated for the summer months. A steel pipe on a hot day would be at least at ambient temperature. In fact, the temperature of the contents of a closed vessel in the heat, like a car with the windows closed, is likely to be substantially higher than ambient temperature. A better and more conservative assumption would be 60° C. It should be noted that that temperature is approaching the flash point of naphthalene.
  - c. When using Raoult's Law, the vapor pressure of pure component  $i$ ,  $P_i$ , must be identified for each component at the correct temperature, as discussed above.
  - d. The Universal Gas Constant used in the Ideal Gas Law was in the wrong units and so is not correct, resulting in a considerably lower result than if the correct number were used.
3. We are about the flammability of the materials in the pipe. Although this issue is out of our direct purview, we would recommend strongly that, if this work is to be done in the summer without first evacuating the pipe, OSHA hot work standards be followed carefully. It may also be prudent to use a water jacket to cool the pipe during the removal process.

If you have any questions, please contact me or Gina Friedman (ext. 7016, [gina.friedman@dem.ri.gov](mailto:gina.friedman@dem.ri.gov)).

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8/10/2011

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**From:** Margaret Kilpatrick [mailto:Margaret.Kilpatrick@gza.com]

**Sent:** Monday, July 25, 2011 11:49 AM

**To:** Barbara Morin

**Cc:** Joseph Martella

**Subject:** Tidewater - Pipe Removal Activities

Hi Barbara,

As discussed, please see attached submittal for the proposed pipe removal activities. A signed LOT is also attached.

National Grid would like to complete this work prior to the start of the school year. As such, your timely review would be greatly appreciated. Please feel free to contact me should you have any questions.

Thanks

Meg

**Meg Kilpatrick, P.E.**

**Senior Project Manager**

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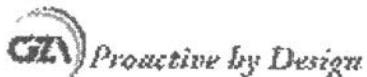
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