

**Mustonen, Kevin**

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**From:** Mustonen, Kevin  
**Sent:** Friday, April 03, 2009 8:40 AM  
**To:** Larsen, Sarah  
**Subject:** Leak #3534, Junction Food-n-Fuel, CCAD review

RE: hydro review of TPT's 12-9-08 "Conceptual Corrective Action Design".

Sarah,

I have reviewed the aforementioned report along with additional vapor intrusion sampling data that Laura Novitzki (TPT) emailed to me on 3-20-09. I have the following comments and recommendations:

**COMMENTS**

- 1) The CCAD contains recommendations for the following two corrective actions:
  - a. The installation of deeper water supply wells for two nearby properties.
  - b. The installation of a sub-slab depressurization system to mitigate the previously detected impacts to the indoor air.
  
- 2) The Radco property (located at 5497 Miller Trunk Highway) has had petroleum compounds detected in their well water on three different occasions since September 2007, including two benzene detections above the current HRL. The MMT Heating and Cooling property (located at 4621 Lindahl road) has had petroleum compounds detected in their well water on two occasions since July 2008, including one benzene detection above the current HRL. I believe the low-level and intermittent detections that we have recently observed in the wells was an ongoing situation that wasn't detected under the previous sampling schedule (i.e., the intermittent impacts weren't lining up with the intermittent sampling events). The sampling schedule changes detailed in our 5-18-07 *Request for Additional Work* letter appear to have played a role in bringing the well impacts to light. TPT has recommended that the new wells be sampled every other month for the first year to avoid the data gaps created by a less stringent sampling schedule.

I agree with TPT's recommendation for replacing the Radco and MMT wells and I agree with their recommended sampling frequency. The CCAD was extremely light on details with regards to the actual well construction plans, so our CAD approval letter should include comments and modifications.

- 3) Four sub-slab soil vapor sampling events and four indoor air sampling events have taken place at the site since October 2006. Initially, the indoor air samples exceeded the ISVs for 124-TMB, 135-TMB, and 1,2-DCA by two to three orders of magnitude. Since that time, the analytical results for the TMBs in both the indoor air and the sub-slab soil vapor samples have steadily decreased and they were both below their respective ISVs during the last sampling event (2-9-09). The 1,2-DCA detections have always been higher in the indoor air than in the sub-slab samples, which I believe casts doubt onto their validity. Also, during the last sampling event, the 1,2-DCA detection (1.1 ug/m3) was equal to the lab's reporting limit, which makes me question the validity of the detection. Since the site's TMB results have declined steadily and are now below the ISVs, I do not agree with TPT's recommendation for an indoor air corrective action.

**RECOMMENDATIONS**

(Suggested language to be included in a CAD Approval (with comments) letter. Please review for clarity and grammar.)

Minnesota Pollution Control Agency (MPCA) staff have reviewed the "Conceptual Corrective Action Design Worksheet", dated December 9, 2008, submitted by Twin Ports Testing (TPT), your environmental consultant for this site. MPCA staff hereby approve of TPT's recommendation for replacing the nearby water supply wells with the following comments/modifications:

- 1) Install replacement water supply wells at the following properties:
  - a. 5497 Miller Trunk Highway (currently listed as the Radco property).
  - b. 4621 Lindahl Road (currently listed as the MMT Heating and Cooling property).
- 2) Additional construction/installation measures will need to be employed to reduce the risk that the new wells will become contaminated during installation or during post-installation operation. Since the on-site (Junction Food-n-Fuel) replacement water supply well (MN Unique Well No. 559694) has remained petroleum-compound free for over 11 years, the MPCA recommends that each of the new replacement wells be constructed in a similar manner. This should include, but may not be limited to:
  - a. Utilizing the underlying bedrock aquifer.
  - b. Installing an outer (double) casing through the overlying, unconsolidated glacial deposits.
  - c. Installing an inner casing into the upper portion of the bedrock aquifer.
  - d. Full length grouting of the annular space around the inner casing.
- 3) If the new water supply wells need to undergo hydrofracturing to increase well yield, the MPCA strongly advises that additional consideration be given to the placement of the packer and to which vertical intervals will be subjected to the fracturing forces. If fractures are opened up from the open-hole portion of the well's borehole to the glacial drift/bedrock interface, contaminated water may migrate from the impacted overlying aquifer into the uncontaminated bedrock aquifer.
- 4) The MPCA agrees with TPT's proposed well sampling schedule. Sample the new wells once every other month for one year. The water samples that are collected should be analyzed for volatile organic compounds (VOCs), gasoline range organics (GRO), and diesel range organics (DRO). The DRO samples should undergo silica gel cleanup at the laboratory prior to analysis.
- 5) Construction of the new water supply wells and sealing of the old water supply wells must be done in accordance with all rules and regulations established in Minnesota Rules Chapter 4725 (the Minnesota well code). Copies of the Minnesota Department of Health (MDH) well construction and well sealing records must be included in the next report that is submitted to the MPCA.
- 6) Based on the rapidly declining analytical trends and the low analytical results during the last sampling event, the MPCA will **not** be requiring corrective actions with respect to the site building's indoor air.
- 7) An implementation report detailing the results of the work listed above must be submitted to the MPCA no later than June 1, 2010.