Stock, Paul

From: Stock, Paul
Sent: Friday, October 11, 2002 4:54 PM
To: Leppala, Steve
Subject: LEAK #3534, Junction Food-N-Fuel, Hermantown, MN

RE: my review of Twin Ports Testing's 2.2.02 "Annual Monitoring Report Fact Sheet #3.26 (February 2002).

Steve, I have reviewed the site file and the above referenced report, and have the following comments and recommendations:

- The previously reviewed report - 2.20.01 AMR - documented ground water monitoring activities through 12.27.00. The 2.2.02 report basically reports ground water monitoring activities (4 new events) through 12.20.01. Ground water monitoring is about all that has been done at the site since ORC was injected - via borings in two separate fields - in July 1998. Although it appears the consultant has collected some DO data, they provide no cogent evaluation of the data...but I don't see any significant (upward) trends with a cursory review. However, it is quite clear that there has not been a significant decline in dissolved petroleum concentrations; in other words, the ORC has been ineffective to date. It appears that the ORC did not add enough oxygen to the system to overcome reducing conditions in the aquifer and/or there is significantly more contamination than assumed when ORC remediation was planned. From my perspective, this is just another in a series of sites where ORC remediation method appears to have failed.
- The continuing, very high levels of contamination in samples form MW2 are notable - highly suggestive of FP. I also note that MW2's TOS is installed substantially below the water table, i.e., the TOS is submerged, likely precluding FP from entering the well to be detected. I also note other confounding problems with the MWs: frost heave and/or settling requiring frequent well surface completions to be re-completed and resurveyed; present consultant displays a lack of knowledge of well construction for MW's 1 through 4; and inadequate well construction information for MW's 5 through 7.
- This is a bedrock site. Bedrock depth appears to range from just under 10 to almost 20 ft bgs under the site. I presume the bedrock to be competent with low hydraulic conductivity and therefore acting as a barrier to vertical flow, however, the varying attitude (i.e., elevation) of the bedrock probably controls horizontal ground water flow in the unconsolidated overlying materials that are mostly composed of sand. Anomalously, the MDH log for a new water well installed at the site indicates bedrock at 60 ft bgs? Nonetheless, there appears to be a bedrock low sloping from the vicinity of MW2 towards MW1 and 4 (and beyond?). The predominant ground water flow direction appears to be easterly. There is a septic mound directly behind (i.e., north of) the store that provides recharge with resulting hydraulic influence. There is a risk that some contaminated ground water may enter the bedrock fracture system and thereby present a threat to nearby water wells.
- City water is not available in the area so nearby residences and businesses use private wells for water supply. The original, 50 ft or so deep, site water well (of otherwise unknown construction) was impacted with petroleum so a new, specially constructed well was installed in Nov. 1997.
- ~~Nov. 1997.~~ The new well was sampled several times through 6.25.98 with no detections.
- There do not appear to be significant vapor risks associated with this site, mainly due to lack of nearby receptors - the site buidling is slab-on-grade.
- There appears to be significant risk of surface water discharge - due the proximity of a ditch/creek, adjacent to the north of the site - that has not been adequately evaluated. We may need to submit a Surface Water Toxics Impacts Assessment form to Dann White/Environmental Outcomes.
- For whatever it's worth, I am guessing that the first set of samples (3.3.93) from MWs 1 and 3 were switched.

RECOMMENDATIONS

Suggested language for RMW letter follows:

<standard into stuff>

The report recommends and additional year of quarterly ground water monitoring. MPCA staff hereby approve the recommendations, subject to the following comments and modifications:

1. The ORC injection appears to have been inadequate to remediate the high concentrations of contamination present at the site and to reduce risks. MPCA staff request that you contact Regenesis to determine whether they warranty or guarantee the results of their product, and inform the MPCA of the results of your discussions.
2. Tank registration information supplied to the MPCA indicates that there have been a total of 14 USTs at the site, some of which are still active. You must submit a complete and comprehensive table tabulating all USTs that have been and are present at the site (use Table 1 from Fact Sheet #3.24). Also submit a site map showing the locations of all past and present USTs and dispensers, clearly indicating which ones are still present and active.
3. Submit a complete and comprehensive Table 13 from Fact Sheet #3.24 listing all properties within 500 feet of the site. Also include an appropriately scaled site area map showing the locations above listed properties, cross-referencing the numbers on the table, and showing any water wells located on those properties. In addition, include Table 14 from Fact Sheet #3.24, listing all water wells, and the required information, within 500 feet of the site.
4. Provide an accurate, scaled site map showing the locations of the wetlands and the ditch/creek located to the North of the site.
5. Monitoring well MW2 must be sealed and replaced with a water table monitoring well whose screen straddles the water table. Submit the MDH Well and Boring Sealing Record for MW2. You must describe the circumstances surrounding the "removal" of MW3 and submit a MDH Well and Boring Sealing Record. You must replace MW3 with a new water table monitoring well. Assuming that the scale and north arrow on the recent site maps are correct, install a water table monitoring well approximately 110 feet east-southeast of MW4 and 95 feet north-northeast of MW5. Provide separate boring logs, monitoring well construction logs, and MDH Well Records for the new monitoring wells (see MPCA Fact Sheet #3.19). The monitoring well construction logs must clearly identify the length from the top of casing/riser (i.e., measuring point) to the top of screen. Submit monitoring well construction logs for previously installed monitoring wells 5, 6, and 7.
6. Sample ground water from all monitoring wells on a quarterly schedule. Analyze the samples for BTEX, MTBE, and GRO, however, ground water samples from the new monitoring wells, for the first two sampling events must, be analyzed for VOCs and GRO. Ground water samples must be collected from the new site water supply well (also known as PW2) on an annual basis and the water well samples must be analyzed for VOCs and GRO. Sampling Information Forms (see MPCA Fact Sheet #3.23) must be completed for all ground water samples and must be submitted to the MPCA.
7. Submit the MDH Well Sealing Record for the previous site water well (also known as PW1).
8. All future reports must contain a complete and comprehensive "Monitoring Well Completion Table" listing all monitoring wells. All future reports must contain complete and cumulative Water Level Measurement and Analytical Results of Water Samples tables, including data back to 1992.
9. An Annual Monitoring Report including all of the information requested above, must be submitted to the MPCA within 6 months of the date of this letter. Additional work, including corrective action, may be required. Disposition of the abandoned, unused water well to the west of the station will being referred to the MDH.

Steve, I assume you will notify the MDH about the abandoned, unused water well (see 4.16.97 RI report)? Fee l free to edit the above for typos, clarity , and brevity. Let me know if you have any questions. I am returning the file to you today via interoffice mail. Thanks!

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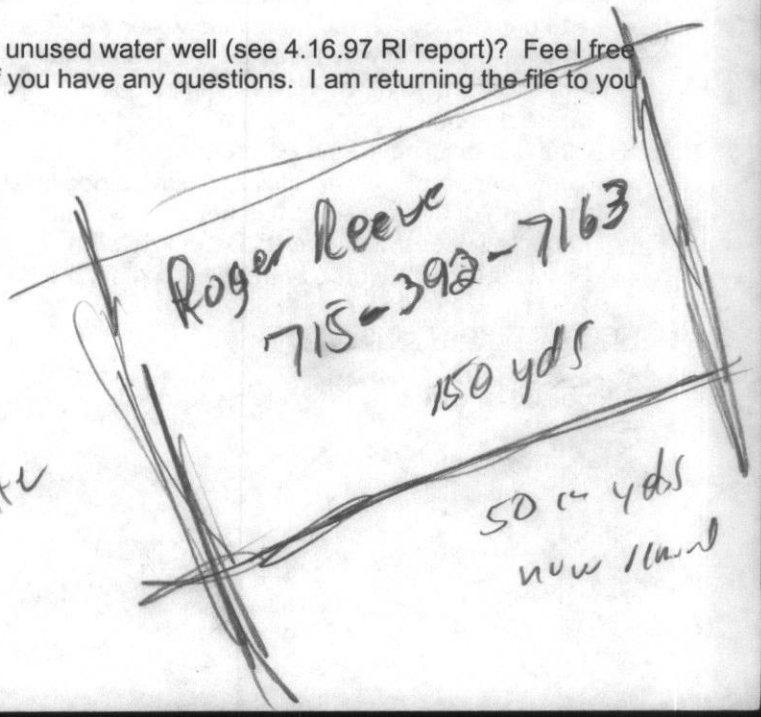

V on RAW letter