



September 9, 2020

Mr. Bill Nicklas
Mr. Jim Baumgartner
D&C Partners, LLP
W223 N7658 Cherry Hill Road
Sussex, WI 53089

Subject: Review of D&C Partners Response to WDNR's June 3, 2020 Correspondence
Superior Linens, 5005 S Packard Avenue, Cudahy
DNR BRRTS Activity #: 02-41-532649; FID #: 241780880

Dear Mr. Nicklas and Mr. Baumgartner:

On February 24, 2020 the Department of Natural Resources (DNR) received the "Site Investigation Report / Remedial Action Options and Design Report" prepared for the Superior Linens site. The Report concluded that no further investigation was required at the site and that closure should be requested after an impervious barrier is installed along the western side of the property. The DNR initially disagreed with these conclusions, as outlined in our June 3, 2020 correspondence. Your environmental consultant St. John – Mittelhauser & Associates, Inc. (SMA) replied to the DNR on July 10 reiterating that their plan to cap a portion of the site and conduct indoor air sampling would satisfy the requirements for case closure.

The DNR met with SMA to discuss the status of this site and to reach a consensus on what steps must be followed to get this case to closure. The DNR has reconsidered some of its previous requests for additional soil and groundwater sampling and has instead requested that data be displayed on site figures differently to portray how the extent of impacts has been defined and demonstrate the no further sampling is needed. A limited amount of sampling and assessment will be required to complete the vapor investigation. The DNR cannot concur that the proposed remedial action will be effective at reducing all risks posed by residual contamination based on the information available and requests that you reassess your options for conducting a remedial action. These items are explained in more detail below.

Groundwater investigation

The DNR reviewed the response provided by SMA regarding groundwater contamination at the site and agrees that no further investigation is necessary. However, some changes to the groundwater figures are recommended so they display a more accurate interpretation of sample data. Figure 23 of the Report presents the results of a numerical model as the extent of groundwater contamination. The DNR does not generally accept modeling in lieu of sampling to complete a site investigation or impose restrictions on off-site property owners. Portraying the model results as the limits of a groundwater plume may be misleading to those reviewing the Figure if its meaning is not properly explained, especially as it indicates that samples were not collected from off-site.

The plume limits depicted on Figure 23 may overestimate of the extent of contamination. The estimated plume limits currently displayed are based on the assumption that groundwater flow direction and stratigraphy do not vary off-site, which may or may not be the case. The DNR recommends reevaluating now the plume limit is displayed on the figure using the analytical data and field measurements that are available. Displaying the groundwater plume to terminate without impacting an offsite property would be a reasonable interpretation. Analytical data confirmed that contaminant concentrations drop significantly away from source area (as indicated

by samples collected from PZ-1 and MW-13) and that concentrations with the plume have general declined over time. The model data supports this interpretation by suggesting that any off-site impacts would be relatively limited in extent.

The area impacted by 1,4-dioxin in the deeper sand should be modified as well. Depicting the area impacted by 1,4-dioxin as a continuous plume would be a more accurate interpretation of the sampling data. It appears that MW-14 was also impacted by this compound and should be included within the plume limits.

Previous request to investigate under the building

The extent of soil contamination is generally defined by the considerable number of samples collected on the west side of the property near the source area and along the eastern portion of the property. The extent of soil contamination under the building can be estimated, but not exactly defined, by the available data. No further investigation under the building will be required if the extent of contamination depicted on Figure 20 of the Report is expanded to cover a wider area to be better representative of potential soil contamination. The relatively high concentrations of volatile organic compounds detected in the source area suggests that plume may extent further under the building than shown. Having a larger plume displayed will do better to notify those who excavate soil or build on the property that residual contamination needs to be considered when conducting these activities. You may otherwise provide a detailed explanation as to how the extent of soil contamination is displayed correctly, which the DNR will review, or collect soil samples from under the building to more accurately define where contamination remains.

Vapor assessment

Additional actions will be needed to address the potential risk for vapor intrusion at this site. Since the initial closure request was submitted for this project there has been an increased awareness that air space in sewer laterals may provide an effective conduit for vapor migration. This is a separate pathway from migration through utility backfill material, which was previously investigated. Waste material dumped in the sewer, or contaminated groundwater or soil gas that enters through breaks in the pipes, and does not get flushed out, can produce vapors within the pipe. These vapors can then migrate into on-site or off-site buildings. The DNR is therefore asking that this pathway be investigated by collecting air sample(s) from the sewer line(s) leaving the site. Collecting a sample from a trap within the building is the preferred method for assessing this pathway but collecting one from an on-site manhole would be the next best option. Alternatively, you could identify the locations of sewer lines under the building and compare their location to the extent of contamination to demonstrate that these do not intersect.

Contaminant concentrations detected in sub-slab vapor samples were compared to vapor risk screening levels developed for a large industrial building. A large industrial building is defined by having large open interior spaces without enclosed areas that vapor can collect. Briefly describe the interior and use of the southern half of the building to ensure that these screening levels apply.

A maintenance plan for the sub-slab vapor mitigation system was previously submitted to the DNR. The maintenance activities outlined in the plan should be conducted while the system is operating. The maintenance plan must now be reviewed for accuracy and updated as needed if the ongoing operation of the system will be required as a condition of closure. Ensure that photos of the system, site contacts, and other information provided in the plan reflect current conditions. A copy of the revised maintenance plan must be provided to the DNR for review.

Proposed capping plan

The construction of an impervious barrier has been proposed along the western side of the site to prevent exposure to residual contamination. To obtain closure, a cap must be maintained in areas where soil contaminant concentrations exceed the direct contact residual contaminant level at depths shallower than four feet. No additional capping is required to address groundwater contamination as the plume appears to be stable under current conditions. However, impervious surfaces currently in place over residual soil contamination will be required to be maintained as a condition of closure to ensure that groundwater will continue to improve. Before the DNR can concur with a capping plan the limits of contamination posing a direct contact risk needs to be identified to demonstrate that the cap will cover this area.

Addressing the vapor intrusion risk within the on-site building.

You must evaluate remedial options for reducing the risk of vapor intrusion at the on-site building to satisfy the requirement of Wis. Admin. Code § NR 726.05(8). The construction of an impervious barrier over residual soil contamination is not considered a remedial action as it does not reduce contaminant mass. The DNR requests you reevaluate potential remedial options to determine what could be a practicable means of reducing contamination impacting sub-slab vapors. A potential remedial action would not need to be selected based on its potential to improve groundwater quality (which is being addressed through natural attenuation) or remove a direct contact risk if there will be enough surface barriers to prevent exposure. The DNR must approve of the assessment and any actions taken before case closure can be considered.

As part of the evaluation you may choose to reexamine contaminant concentrations in soil gas under the building to determine if a vapor intrusion risk is still present. Earlier sub-slab samples did not indicate an extensive area of impacted soil vapor was present, it may be reasonable to collect sub-slab vapor samples to determine if conditions have changed over time. If sampling does not indicate that vapor concentrations pose a significant risk the requirement to conduct a remedial action would no longer apply. The collection of sub-slab vapor samples using high purge volume sampling could be used for this purpose if collected far enough from the outer walls of the building so results are not influenced by outdoor air. You may consider collecting indoor air samples as you proposed, in addition to the sub-slab samples, to assess the current risk of vapor intrusion.

Closure assessment

An addendum to the Report should be prepared with updated figures and a discussion as to how the above items were addressed, and a proposal to conduct further investigation or remediation or request closure. Documentation submitted in support of a closure request must identify and discuss the presence of non-chlorinated volatile organic contaminants in soil and groundwater, lead in soil, and any other contaminant discovered on this property not specifically addressed by the two closed LUST cases.

We appreciate your efforts to protect the environment at this site. If you have any questions regarding this request, please contact me by calling (262) 574-2166, or by email at paul.grittner@wisconsin.gov.

Sincerely,



Paul Grittner
Hydrogeologist
Remediation & Redevelopment Program

cc: Steve Swenson – SM&A/Terracon (steves@st-ma.com)
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