



December 11, 2023

Roers Companies
c/o: Shane LaFave
110 Cheshire Lane, Suite 120
Minnetonka, MN 55305
Via Email Only to shane@roerscompanies.com

Subject: Remedial Action Options Report Review
Community Within the Corridor - East Block
2748 N. 32nd Street, Milwaukee, WI 53210
BRRTS #02-41-263675, FID #241025400

Dear Mr. LaFave:

On November 16, 2023, the Wisconsin Department of Natural Resources (DNR) received *Revised Remedial Action Options Report* (Report) prepared by K. Singh & Associates, Inc. (K. Singh) on behalf of Community Within the Corridor (CWC) for the subject site. The Report was submitted in response to the DNR's September 7, 2023, *Remedial Action Options Report Review* letter, which did not approve the RAOR and requested that an updated RAOR be submitted that incorporated the feedback provided in the letter. Below is a summary of the reports that were submitted by CWC (excluding weekly progress reports), and the written responses provided by DNR since the September 7, 2023, letter was sent.

- September 14, 2023: *Soil Sampling Plan in Response to WDNR Review of Remedial Action Options Report* submitted by K. Singh on behalf of CWC.
- September 22, 2023: Email from DNR providing preliminary feedback on the September 14, 2023, submittal.
- September 22, 2023: Email from K. Singh on behalf of CWC providing updates to the soil sampling plan that incorporates DNR's September 22, 2023, feedback.
- October 6, 2023: *Soil Sampling Plan Review* letter from DNR providing concurrence with the updated soil sampling plan.
- October 10, 2023: *Column Sealing Options Report* submitted by K. Singh on behalf of CWC.
- October 24, 2023: *Column Sealing Options Report Review* letter from DNR generally approving the columns sealing plan with comments.
- October 26, 2023: *Soil Borings Report for Hotspot Areas* submitted by K. Singh on behalf of CWC. Trichloroethene (TCE) soil data collected from Building 1B was the highest concentrations of TCE identified at CWC East Block to-date.
- November 7, 2023: Email from DNR providing feedback on the trichloroethene (TCE) soil data presented in the October 26, 2023, submittal. In consideration with the TCE data presented, the DNR strongly recommended that deeper soil excavations occur and that a destructive technology (e.g., reductive dechlorination) be applied to the areas of highest TCE soil contamination.

The DNR reviewed this *Revised Remedial Actions Options Report* under the technical assistance fee of \$1,050 that was submitted with the original *Remedial Action Options Report* on July 25, 2023. The Report

requests DNR review and approval of the Report. The DNR reviewed the Report for compliance with Wis. Admin. Code chs. NR 722 and 724, and concurs with the remedial strategy and provides the below comments and recommendations to incorporate and/or consider.

Report Overview

In summary, the Report indicates that the following remedial action plan will be implemented:

- Excavation and disposal of approximately 412 tons of contaminated soils that are characteristic of both hazardous and non-hazardous waste. Excavations are planned to 4 feet below ground surface (ft bgs). K. Singh indicates that remedial excavations deeper than 4 ft bgs are not feasible as they have determined that deeper excavations could undermine the structural integrity of the foundation of the building.
 - Following remedial soil excavations and prior to backfilling activities, the Report indicates that the K. Singh will “raise the temperature in the area to maximize volatilization of TCE.”
 - The Report indicates that, “feasibility of utilizing limited chemical injection to dechlorinate residual TCE in areas of greatest concentration of TCE” is still being evaluated.
- The use of engineered barriers across the site to prevent direct contact and infiltration of groundwater and will include the existing building, asphalt and concrete surfaces, and a soil cap consisting of 1.5 ft of clean fill and 0.5 ft of topsoil and/or vegetation.
- Groundwater remediation through natural attenuation. Long-term groundwater monitoring is planned to demonstrate a stable or receding groundwater plume prior to case closure.
- Mitigation of sub-slab vapors and long-term remediation of the TCE contamination beneath the building through utilization of the existing vapor mitigation and extraction system that exists across the entire site building.
- Implementation of a column sealing program to interrupt these potential vapor migration pathways.

Report Review

The DNR understands that parts of the remedial action plan selected by CWC are underway, as detailed in the submittals listed in the introduction paragraph of this letter and in CWC’s recent weekly progress reports. More specifically, the planned remedial soil excavations are underway. Therefore, the DNR provides the below comments and recommendations with the understanding that CWC has already initiated their selected remedial action plan.

Selected Remedial Action Plan

1. The information presented in the Report indicates the selected remedial action plan will reduce the mass and concentration of TCE present beneath the site building, which is required under Wis. Admin. Code § NR 726.05(8)(b). However, the DNR cannot concur with the assumptions and calculations used by K. Singh to provide an estimate of the mass of TCE that is present in soil at the site and the estimate of the mass of TCE that will be removed during remedial soil excavations. The DNR provides the following comments on the estimates provided in the Report:
 - a. The use of the median value of 1.1 mg/kg TCE in soil at the site is not appropriate in these calculations as it is not representative of site conditions. The concentration of TCE is highly variable across the site and this value does not adequately represent the concentration of TCE in the areas with the highest concentration. Calculations for mass removal should be revised by specific excavation area and included in the construction documentation or as-built report, as requested in the *Next Steps* section of this letter below.

- b. Table 1 of the Report, *Estimated Additional Soil Excavation Volumes and TCE Mass*, indicates a unit rate of 1.75 tons per cubic yard. According to EPA's, *Standard Volume-to-Weight Conversion Factors*, standard mass calculations should assume 1.3 to 1.4 tons per cubic yard. Based on DNR's review of the Report, it appears that mass removal volumes are overestimated by approximately 25%, which correlates to an overestimation of TCE mass removal. Please provide updated mass removal volumes with the final disposal manifests within the construction documentation or as-built report.
2. The DNR understands that K. Singh has determined that an excavation deeper than 4 ft bgs could undermine structural integrity of the building. Should this interpretation change, the DNR recommends that CWC consider deeper excavations utilizing benching or trench boxes to target deeper intervals because soil data submitted on October 26, 2023, indicates that some of the highest TCE concentrations are at or below 4 ft bgs (e.g., GP-10). As suggested in the DNR's email dated November 7, 2023, this action will increase the mass removal of TCE soil contamination.
3. The Report indicates that chemical injections to promote dechlorination are still being considered by CWC. The DNR continues to recommend that soil excavations be paired with a targeted destructive technology (e.g., reductive dechlorination). The destructive technology should be applied to the areas of highest identified soil contamination regardless of the vertical limits applied for the remedial soil excavation. If benching or trench boxes as noted above can be utilized, this could facilitate application of a reductive chemical additive to the areas with the greatest contaminant concentrations. DNR approval is required prior to implementation of this specific remedial action, per Wis. Admin. Codes § NR 140.28, NR 812.05, and NR 205.08. Therefore, if this remedial action is selected, please submit an infiltration/injection request at your next earliest convenience with the applicable technical assistance fee of \$700 for DNR review and response.
4. The Report indicates that after soil excavation is completed in an area, but before backfilling occurs, the temperature in the area will be raised to maximize volatilization of TCE. The DNR does not recommend that this action occur without performing a detailed evaluation of worker safety, the potential for absorption of the TCE vapors by building materials, and the emissions of the vapors to outdoor air and the applicable requirements under the Wis. Admin. Code ch. NR 400 series. Further, any soil that exhibits characteristics of hazardous waste that is excavated during the remedial soil excavations may not be present inside the building during this action, as the storage and treatment of hazardous waste on-site cannot occur unless prior DNR approval is granted, per Wis Admin Code § NR 670.079.
5. As outlined in the *Site Investigation Status* section of this letter below, additional monitoring wells will be needed to establish the limits of the groundwater plume that has been identified in the northern courtyard of the site. These additional monitoring wells will be necessary to establish enough monitoring points to evaluate natural attenuation of groundwater contamination and to evaluate potential receptor pathways that may require further assessment and/or response action. Once groundwater investigation is complete in this area of the site, CWC should evaluate whether monitored natural attenuation is still an appropriate remediation method. The DNR recommends referencing DNR guidance document RR-699, *Understanding Chlorinated Hydrocarbon Behavior in Groundwater: Guidance on the Investigation, Assessment and Limitations of Monitored Natural Attenuation for additional information*, to determine what natural attenuation parameters should be measured.
6. Following soil remediation activities and before vapor mitigation system (VMS) commissioning occurs, a robust sealing effort should be performed throughout the site building to seal any potential preferential pathways. Specifically evaluate the brick-and-mortar walls and potential cracks in this building feature to

determine whether these walls are a migration pathway for vapors. Seal any building features as may be appropriate.

7. The Report requests that the DNR consider VMS commissioning to be complete after two successful commissioning events. A minimum of three successful commissioning events are necessary to demonstrate that the VMS is successfully preventing vapor intrusion and will ensure that indoor air concentrations will not exceed established vapor action levels. The commissioning process should be designed to be robust and sufficient to provide reliable, representative data. On November 28, 2023, *Proposed Plan for 2nd Round of Commissioning of Vapor Mitigation System* was submitted by K. Singh on behalf of CWC. The DNR will provide a detailed review and response to VMS commissioning plan in separate written correspondence.
8. The Report indicates that TCE concentrations within sub-slab vapors were measured to be below the applicable vapor risk screening level in August 2023. Sub-slab vapor data collected during unmitigated sub-slab building conditions is used to determine whether a building has a vapor intrusion risk and whether the sub-slab must be mitigated to prevent potential vapor intrusion risk. Sub-slab vapor data collected during VMS operation is influenced by the operation of the VMS and will not be considered by the DNR during its future reviews of VMS operations.

Site Investigation Status

As identified in the DNR's *Site Investigation Review* letter, dated December 22, 2021, site investigation has not yet been approved by the DNR. More specifically, the groundwater investigation and sewer vapor investigation are not complete. Below are additional comments on the site investigation status:

1. Groundwater contaminated with chlorinated volatile organic compounds (CVOCs) at MW-2 located in the northern courtyard of the site appears to be present within a perched groundwater table that exists within that fill interval immediately below the ground surface. Groundwater contamination at MW-2 remains laterally undefined. Install additional monitoring wells that are appropriately screened within the fill interval to laterally define the groundwater contamination at MW-2. Consider installing monitoring wells to the north, east and west of MW-2 to determine whether groundwater contamination may extend off-site and to help to evaluate potential off-site migration pathways and receptors of the contamination.
2. The DNR requests that manhole sample locations Sanitary Manhole 25 (EB-IA-1), Sanitary Manhole 26 (EB-IA-2), and Sanitary Manhole 19 (EB-IA-3) be sampled again as TCE exceeded 10% of the sanitary sewer gas screening level at all of these locations during the May 2021 sampling event. The DNR recommends that the sewer vapor samples be collected using passive samplers for a minimum duration of one-week. For additional information on investigating utilities as a preferential vapor pathway and sewer vapor sample collection, you may reference DNR guidance document RR-649, *Guidance for Documenting the Investigation of Human-made Preferential Pathways Including Utility Corridors*. Please include information on the flow direction of the sanitary sewer in W. Center St. and N. 32nd St. rights-of-way and locations of historical sewer laterals (if available) in future reports, where applicable.

Documentation

Please provide the following documentation and revisions in future submittals, as may be applicable:

1. The boring logs submitted in original *Remedial Action Options Report* are all for sample location GP-1. Please provide updated boring logs to show all borings logs for GP-1 to GP-16.

2. The detailed engineering notes/legends present at the top of several figures in the Report appear to limit the available space to provide more relevant site data. Please remove these features from future figures and/or move them to separate page(s), as needed.

Next Steps

In consideration of administrative code requirements, the DNR is requesting the implementation of the following schedule:

- Per Wis. Admin. Code § NR 716.14, submit all sampling results within 10 days of receiving laboratory data.
- Per Wis. Admin. Code § NR 716.09, submit a site investigation work plan within 60 days of the date of this letter in response to the *Site Investigation Status* section of the letter. Submit the applicable technical assistance fee if you would like to request DNR review of and response to the work plan.
- Per Wis. Admin. Code § NR 724.15, submit a construction documentation or as-built report within 60 days after the date that construction of all interim remedial actions is completed. This report should include a detailed narrative and supporting photo documentation on the sealing efforts that are performed for various building features, such as columns, walls, floors, and other building features. This report should also include operation and discharge information for the sumps at the site. The interim operating, maintenance, and monitoring (OM&M) plan included in this report should discuss how the sealing efforts will be inspected and maintained. Refer to the DNR's October 6, 2023, *Soil Sampling Plan Review* letter for additional details on further recommendations and/or requirements of this interim construction documentation or as-built report.

The DNR appreciates the actions you are taking to restore the environment at this site. If you have any questions regarding this site or this letter, please contact me, the DNR Project Manager, at (414) 435-8021 or jane.pfeiffer@wisconsin.gov.

Sincerely,



Jane K. Pfeiffer
Project Manager – Hydrogeologist
Remediation & Redevelopment Program

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