REGION 5
CHICAGO, IL 60604

December 20, 2023

Via E-mail

Denice Nelson
Johnson Controls
5757 N. Green Bay Ave.
Milwaukee, WI 53209

Subject: Vapor Intrusion Workplan Review with Comments
Tyco Safety Products - Ansul Stanton St Fac
U.S. EPA ID NO. WID006125215
1 Stanton Street
Marinette, WI 54143

Dear Ms. Nelson,

The Environmental Protection Agency (EPA) and the Wisconsin Department of Natural Resources (WDNR) has reviewed the Vapor Intrusion Workplan dated and received on March 17, 2021, submitted for this facility. Prior to the workplan being approved, the following comments will need to be addressed:

Comments:

1. Develop a separate Conceptual Site Model (CSM) as it relates to volatile organic compounds (VOCs) and vapor intrusion (VI). The current CSM is developed for groundwater, soil, and sediment contamination that resulted from arsenic-salt waste piles and does not consider all migration pathways that are relevant to VOCs and VI. The CSM must include an assessment of preferential pathways, e.g. utilities, to meet the requirements of Wis. Admin Code NR716.11(5)(a).

    a. An evaluation should be performed to determine if the current and/or historic underground utilities may be acting as a preferential pathway for contaminant migration and should include information on how utilities were abandoned. Guidance document RR-649 provides information on investigating human-made preferential pathways.

    b. VI must be reevaluated as site conditions change, including but not limited to utility modifications, and building construction or use. For example, building 14 has been modified (Groundwater Containment and Treatment System improvements) and must be reassessed for VI.

2. Tyco has proposed a screening process to determine which buildings should be assessed for VI. The screening process does not meet requirements outlined in RR-800. Buildings are considered occupied even when used infrequently. When VOCs are used or stored inside a building, the potential for VI of all contaminants of concern must still be evaluated, including those not currently in use (e.g. TCE).

a. The screening process did not include preferential pathways. An evaluation of preferential pathways must be included in the VI assessment; indoor air sampling may not be used as screening criteria in lieu of this assessment as indicated on page 4. The potential for in-pipe vapor migration should be assessed and include an evaluation of sanitary sewer(s) connected to buildings that utilized VOCs. Guidance document RR-649 provides information on performing an in-pipe sanitary investigation.

b. The use of VOCs in a building does not preclude it from a vapor assessment. Any buildings that screen in based on other factors, such as proximity to residual VOC contamination in soil and/or groundwater, must be evaluated. WDNR does not allow preemptive mitigation of vapors in lieu of sampling, and the presence of a vapor barrier does not eliminate the need for a vapor evaluation. Vapor barrier information should be submitted to EPA and WDNR and should include the barrier's specifications as they pertain to mitigation of chemical VI and resistance to degradation by the contaminants of concern for the site, along with barrier installation documentation.

3. Use the most recent VOC data available including data from the 2023 sampling event. Tyco asserts that the total mass of VOCs is decreasing. To demonstrate the trends of all compounds, evaluate the total VOC mass and degradation by-products as additional data is collected.

4. The attenuation factor used for each building should be based upon the media sampled, the building use (residential/commercial/industrial) and the proximity of the groundwater table to the building slab. Refer to WDNR guidance document RR-0136 for groundwater vapor risk screening levels (VRSLs).

    a. WDNR includes attenuation factors for different media and building use. Each building should be evaluated for whether it would be considered residential, small commercial, or large commercial. Evaluation should include factors such as building size and use, ceiling heights, HVAC operations and air exchange rates, etc.

    b. All calculations must be redone with the correct attenuation factors, and then the locations and list of analytes reevaluated based on the results.

5. EPA and WDNR are requesting that additional indoor air sampling be performed using passive samplers over a duration of 7 to 14 days, with 10 days being the preferred sampling duration. Samples should only be analyzed for contaminants of concern.

    a. Provide sampling workplan(s) that include the building layout and construction, preferential pathways (e.g. utilities), proposed sampler type, sample locations, number of samples, and frequency of events (minimum of three events with one round performed during the heating season). If sump(s) are present, these should also be sealed with headspace vapor sample collected following the protocol in RR-986. A multiple lines of evidence approach must be taken when sub-slab sampling is not possible.
        i. Please note that when the concentration of TCE in groundwater is greater than the Preventive Action Limit (PAL), and groundwater is in contact with the building foundation, indoor air sampling is required.

6. Assumptions regarding the significance of VOC discharges including TCE at the site cannot be made.

a. In 2018, the concentration of TCE in MW045M was 1,700 ppb. While VOC contamination in mid depth wells may not contribute to VI, site specific activities including groundwater pumping to prevent flooding, may impact the migration of contaminants from mid to shallow depths.

b. Using a concentration of 100 ppm (2019) in one well does not demonstrate the scale of historical discharges or impacts considering the concentration in MW045M was 1,700 ppm.

c. The statement on page 4, 3rd paragraph "…and the groundwater concentrations measured historically have not exceeded 100 ug/L." is false and should be removed. The assumption that no discharges to soil have occurred in the last two decades is similarly unsubstantiated.

If you have any questions about this review, please contact me via phone at (312) 353-4374 or through email at Kleinberg.Andrew@epa.gov.

Sincerely,

Andrew Kleinberg
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