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Date:

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Arcadis Project No.:

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Subject:

Response to Comments – 2013 RFI Pathway Analysis

RACER Trust, Plants 2, 3 & 6, Lansing, Michigan

The following acknowledges and provides a response to Michigan Department of Environmental Quality (MDEQ) comments regarding the pathway analysis completed as part of the Resource Conservation and Recovery Act Facility Investigation (RFI) Phase 2 Activities Summary Report (Arcadis 2013, Appendix F). The comments were provided by Ms. Debra MacKenzie-Taylor and transmitted to RACER Trust on December 20, 2017. Comments and responses as follows:

Page 1, Section 1, 3rd Paragraph – There will need to be a plan to maintain conditions so that ecological receptors are not attracted to the site.

Response: Much of the site is currently covered by former building slabs or crushed concrete / asphalt and there is a limited amount of vegetated areas, thereby reducing the potential for ecological receptors to inhabit the Site. The Declaration of Restrictive Covenant (DRC) for the Site will limit future use to nonresidential and the Site is zoned Heavy Industrial so the potential for ecological habitat being created is minimal.

Page 4, Section 2.1.3.1, 2nd Paragraph – Check zoning for allowed uses.

Response: The Site is currently zoned “Heavy Industrial”, which allows for use as a child day care by “Special Condition” and for residential purposes by “Special Land Use Permit.” The DRC for the Site will prohibit all uses of the Property that are not compatible with or are inconsistent with the exposure

assumptions for the nonresidential cleanup criteria established pursuant to Section 324.20120a(1)(b) of NREPA.

Page 7, Section 2.1.3.2, Last Paragraph – May need to assess recreational users for park near Plant 3.

Response: Two parks, West Side Park and Dunnebacke Park, are located east of Plant 3, adjacent to the railroad tracks. Dunnebacke Park to the north is across from Areas 17 and 18, which have exceedances of criteria in soil; however, the areas of exceedances are covered by former building slabs and parking lot areas. Therefore, these exceedances are not likely to have impacted soil at Dunnebacke Park. West Side Park to the south is across from Area 16, which is not currently covered, and Area 19, which is covered. Concentrations of metals and polycyclic aromatic hydrocarbons (PAHs) in soil at Area 16 exceed the Direct Contact Criteria (DCC) and/or Particulate Soil Inhalation Criteria (PSIC). Based on these, exceedances, in February 2015, Arcadis prepared and submitted to MDEQ a letter evaluating exposure for potential recreational users at the West Side Park near the southeast corner of Plant 3.

To evaluate potential risks to human health from exposure to concentrations of metals and PAHs in soil at Area 16, an exposure area (or “decision unit”) was identified around Area 16. The decision unit encompassed the southern portion of the grassy area around Area 16 where soil samples have been collected. This area is approximately 2.9 acres. Soil data collected in the decision unit were evaluated to determine if potentially unacceptable conditions are present at the nearby West Side Park, located to the east of Area 16 beyond the railroad property. To identify appropriate MDEQ screening criteria, potential receptors were identified and include maintenance workers, baseball players and observers, and other users of the park. Based on these potential receptors, soil data were conservatively compared to 2013 residential MDEQ soil criteria including DCC, Volatilization Soil Inhalation Criteria (VSIC), and PSIC.

Current surface soil conditions in the 2.9-acre decision unit around Area 16 are not expected to have impacted the adjacent properties at concentrations that would be a concern for residential receptors. However, consistent with the draft Corrective Measures Study (CMS), ARCADIS recommended that, in addition to site-wide soil management, the DRC for Plant 3 include the maintenance of clean soil cover over the Area 16 decision unit. Based on review of the Area 16 soil analytical data, the top 2 feet of the existing soil is suitable to be soil cover for the area. The DRC will require that, following any excavation or other intrusive activity, including removing, altering or disturbing the barrier, that could affect the integrity of the barrier, must be restored with a barrier that provides at least an equivalent degree of protection as the original barrier within fourteen (14) days of completion of the work. Repair and/or replacement of the barrier must be completed unless additional sampling is conducted that demonstrates that a barrier in the specified area is no longer necessary in accordance with the applicable provisions and requirements of Part 111 of NREPA.

Based on the results of the screening-level risk assessment, the concentrations of constituents on the RACER property do not pose an unacceptable risk to recreational users at West Side Park.

Page 11, Table 1, Direct Contact Criteria – Direct Contact Pathway requires both a land use restriction and an exposure barrier unless exceedances are at sufficient depth.

Response: Exceedances of the direct contact criteria in shallow soil (less than 4 feet below ground surface [bgs]) at the Site will be evaluated through the use of statistical analyses. If warranted in specific areas, an exposure barrier will be proposed and identified in the DRC for the Site. In addition, the DRC will include a site-wide soil management provision that will require management of all soil in accordance with applicable laws.

Page 14, Section 2.3, 2nd Bullet – Methyl acetate maximum concentration in soil presented in the Table [4] is 1,810 µg/kg, not 1.810.

Response: The maximum concentration of 1.810 micrograms per kilogram (µg/kg) is a typo and should be 1,810 µg/kg.

Page 14, Section 2.3, 5th Bullet – Location and depth of the soil and groundwater samples with 1,1-biphenyl.

Response: Twelve soil samples in Areas 1, 5-2, 5-3, 9, and 17 and ranging in depth from 1 to 13 feet bgs exhibited detected concentrations of 1,1-biphenyl, a semi-volatile organic compound (SVOC), ranging in concentration from 40 µg/kg to 4,000 µg/kg. MDEQ does not have criteria for 1,1-biphenyl; however, there are United States Environmental Protection Agency (USEPA) Regional Screening Levels (RSLs) for 1,1-biphenyl for soil and tap water. The industrial soil RSL (a combination of the direct contact and inhalation exposure routes) for 1,1-biphenyl (adjusted to be consistent MDEQ's target risk of 1×10^{-5} and hazard level of 1) is 200,000 µg/kg, and the soil protection of groundwater RSL is 148 µg/kg (adjusted to account for a dilution and attenuation factor [DAF] of 17 per MDEQ criteria). The detected concentrations of 1,1-biphenyl in soil exceed the soil protection of groundwater RSL. However, as summarized below, with the exception of two samples, 1,1-biphenyl has not been detected in groundwater at the Site, indicating that 1,1-biphenyl is not leaching to groundwater. Further, the DRC will not allow installation of wells for drinking water.

In groundwater, 1,1-biphenyl was detected in two samples collected from temporary wells within the shallow perched groundwater in Area 1 in 2012 at a maximum concentration of 20 micrograms per liter (µg/L). Note, these two samples were filtered (i.e., dissolved) groundwater samples. The USEPA tap water RSL is 0.83 µg/L and the USEPA commercial Vapor Intrusion Screening Level (VISL; adjusted to be consistent with the MDEQ default temperature of 10 degrees Celsius and a target risk of 1×10^{-5} and hazard level of 1) is 340 µg/L. The two groundwater detections exceed the USEPA tap water RSL, but do not exceed the commercial VISL. Four permanent monitoring wells (MW-01(2), MW-02(2), MW-03(2), and MW-12-17) have been installed in Area 1 within the shallow perched groundwater and a total of 26 samples have been collected from these monitoring wells and analyzed for SVOCs, including 1,1-biphenyl, since 2011. 1,1-Biphenyl has not been detected in any of the 26 samples. In addition, 744 unfiltered groundwater samples have been collected from the Site and analyzed for 1,1-biphenyl without detections.

Based on the available soil and groundwater data for the Site, 1,1-biphenyl in soil is not present at concentrations exceeding direct contact criteria (based on USEPA RSLs) and is generally not leaching to groundwater at detectable concentrations. The DRC will not allow installation of wells for drinking water. Therefore, 1,1-biphenyl is not a concern for the Site.

Page 15, Cyclohexane Bullet - If there are areas where cyclohexane is above vapor intrusion screening levels (or other screening levels/criteria), this parameter needs to be included as part of the basis for the VI land use controls. Note: maximum detections in Areas 7, 9, and 17 not provided.

Response: Cyclohexane was detected in 36 groundwater samples collected since 2011 and in 39 soil samples. The maximum detected concentration of cyclohexane in groundwater, 113 micrograms per liter (µg/L) does not exceed the August 2017 proposed Tier 1 Groundwater Screening Level for vapor intrusion of 290 µg/L. However, concentrations in soil do exceed the August 2017 proposed Tier 1 Soil Screening Level for vapor intrusion of 320 µg/kg. Concentrations of cyclohexane greater than 320 µg/kg were present in 11 soil samples collected from Areas 7, 9, and 17.

The planned DRC for the Site will include a Site-wide soil vapor management requirement that the vapor intrusion pathway be evaluated prior to future construction or occupancy of buildings on the Site.

Page 15, Methylcyclohexane Bullet – Evaluate the data more closely.

Response: Methylcyclohexane was detected in 74 soil samples and in 37 groundwater samples collected since 2011. MDEQ does not have criteria (current or proposed) for methylcyclohexane, as toxicity values are not readily available. If methylcyclohexane is evaluated against cyclohexane criteria as a surrogate, the following conclusions can be made. The maximum detected concentration of methylcyclohexane in groundwater, 51 micrograms per liter (µg/L) does not exceed the August 2017 proposed Tier 1 Groundwater Screening Level for vapor intrusion of 290 µg/L. However, elevated concentrations in soil do exceed the August 2017 proposed Tier 1 Soil Screening Level for vapor intrusion of 320 µg/kg. Concentrations of methylcyclohexane greater than 320 µg/kg were present in 27 soil samples collected from Areas 2, 5-3, 5-6, 5-7, 7, 9, and 17.

The planned DRC for the Site will include a Site-wide soil vapor management requirement that the vapor intrusion pathway be evaluated prior to future construction or occupancy of buildings on the Site.

References

Arcadis. 2013. Resource Conservation and Recovery Act Facility Investigation (RFI) Phase 2 Activities Summary Report. Michigan Plants 2, 3 & 6 Industrial Land. April.