



RICK SNYDER  
GOVERNOR

STATE OF MICHIGAN  
DEPARTMENT OF ENVIRONMENTAL QUALITY  
LANSING



DAN WYANT  
DIRECTOR

August 21, 2012

Ms. Amy L. Hoeksma  
Vice President/Operations Leader  
ARCADIS U.S., Inc.  
10559 Citation Drive, Suite 100  
Brighton, Michigan 48116

Dear Ms. Hoeksma:

SUBJECT: RCRA Facility Investigation (RFI) Phase 2, Characterization Stage Scope of Work (Report); RACER Lansing Plants 2 & 3; MID 980 700 827; and Plant 6; MID 005 356 928

The Michigan Department of Environmental Quality (MDEQ) has reviewed the subject Report that was received on July 19, 2012, pursuant to Part 111, Hazardous Waste Management, of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended (Act 451).

Based on that review, RMD staff has the following comments:

General Comments

1. It is the MDEQ's understanding that, although it is not specifically addressed in the Report, ARCADIS will be performing an investigation of the on-site storm sewer system to determine if contaminated groundwater is potentially venting to surface water above the groundwater surface water interface (GSI) criteria via the storm water system. It is recommended that the specifics of the conceptual plan regarding this investigation be reviewed by the MDEQ to ensure it is approvable upon completion.
2. It is the MDEQ's understanding that any additional investigation that may be required regarding the ambient air and inhalation pathways (ambient air, indoor air, and particulate soil inhalation) will be conducted at a later date after the final delineation of soil and groundwater has been completed.
3. As communicated in previous comments by the MDEQ, at some point in the investigation, a more complete understanding of groundwater flow directions and gradients and contaminant fate and transport will need to be developed as part of the Conceptual Site Model. This task is very important to determine the long-term potential for any off-site migration in the shallow groundwater as well as any downward migration of shallow contamination into the bedrock aquifer that is currently utilized by the city of Lansing as a drinking water source. In addition, RACER should consider implementing a pumping test to conclusively demonstrate the lack of hydraulic connection between the shallow groundwater and the deeper sand/bedrock aquifer.
4. As communicated in previous comments by the MDEQ, the drinking water protection (DWP) standard for 1,4-dioxane is likely to be reduced by an order of magnitude as part the Part 201, Environmental Remediation, of Act 451 criteria changes currently scheduled to be implemented in December 2013. Given this schedule and the presence of the

compound throughout the shallow groundwater at the site, RACER should conduct its evaluation of 1,4-dioxane (including the potential for off-site migration) using the current best estimate of what the new DWP criteria will be; which is 8.5 micrograms per liter ( $\mu\text{g/L}$ ).

5. RACER must provide laboratory data packages, with basic quality assurance/quality control, to audit and for public records purposes. Since these are likely to be quite large, they should be provided on disc.
6. There are no current or proposed borings in the southeast corner of the site (Plant 6). Since the groundwater flow is potentially to the southeast, some investigation of the groundwater in this area is required to document groundwater conditions there and to determine if any contaminated groundwater is migrating off-site. This could be completed as part of the delineation phase of the investigation.
7. Due to the site-wide presence of 1,4-dioxane in the shallow groundwater as well as the expected lowering of the drinking water criteria to 8.5  $\mu\text{g/L}$ , each of the site-wide perimeter metals borings proposed for metals that encounter water should also be analyzed for 1,4-dioxane in groundwater.
8. Area 10 Evaluation: Benzo-a-pyrene was detected above the Part 201 nonresidential direct contact criterion in soil. No groundwater samples have been collected in this area for semivolatile organic compounds (SVOC) analyses. Future work must include SVOC analysis for groundwater at or near the location of the direct contact exceedence.
9. Area 14 Evaluation: The summary information in Table 1 of the Report indicates that the only deep groundwater exceedences of Part 201 criteria are due to manganese; however, the data (MW-91-2, including historical data) seem to indicate additional exceedences of arsenic, chromium, and lead. This issue should be clarified and additional investigation proposed if necessary. Additionally, the model does not include all of the historical data collected in the area; it should be clarified as to whether or not these data change the results of the evaluation so that no additional data in the area is required.
10. Area 16 Evaluation: The proposed additional borings should include analysis of volatile organic compounds (VOCs) (including 1,4-dioxane) since no VOC or 1,4-dioxane data have been collected at this location, and they have the potential to be present given the nature of the area of interest (AOI).
11. Area 18 Evaluation: Soil samples are proposed to delineate SVOC exceedences in shallow soils. The groundwater samples from this area may or may not be located downgradient of the soil exceedences. The proposal should be clarified to either demonstrate that additional groundwater sampling is not required (because the existing samples were collected downgradient of the impacted soils) or at least one groundwater sample should be collected from beneath the impacted area.
12. Area 19 Evaluation: The proposed additional borings should include analysis of VOCs (including 1,4-dioxane) since limited VOC or 1,4-dioxane data have been collected at this location, and they have the potential to be present given the nature of the AOI.

13. Area 20 Evaluation: No groundwater samples have been proposed for this area. It is MDEQ's understanding based on our August 13<sup>th</sup> telephone discussion that groundwater sampling will be conducted at a later date during the delineation phase.
14. Site-Wide Groundwater Evaluation: The site-wide groundwater investigation must consider the potential for off-site migration of shallow contaminated groundwater via utility corridors that represent potential preferential migration pathways.

Should you have questions or require further information, please contact me at 517-373-7397; quackenbushp@michigan.gov; or MDEQ, P.O. Box 30241, Lansing, Michigan 48909-7741.

Sincerely,



Peter Quackenbush  
Senior Environmental Engineer  
Hazardous Waste Section  
Resource Management Division  
517-373-7397

cc: Mr. Dave Favero, RACER Trust  
Mr. Patrick Curry, ARCADIS U.S., Inc.  
Mr. Joe Cisneros, U.S. Environmental Protection Agency, Region 5  
Mr. Joe Rogers/John McCabe/Mary Carnagie, MDEQ  
Corrective Action File