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**Revitalizing Auto Communities
Environmental Response Trust**

March 23, 2012

Ms. Michelle Kaysen
USEPA Region 5
77 West Jackson Blvd
Mail Code DE-9J
Chicago, IL 60604-3507

RE: Supplemental Memo
Corrective Measures Proposal
RCRA Corrective Action
Former GM Delco Plant 5 Kokomo, Indiana USEPA ID No. IND000806844

Dear Ms. Kaysen:

In an email from you dated February 23, 2012, EPA stated that, "The December 6, 2011 Corrective Measures Proposal submitted by RACER for the Former GM Delco Plant 5 in Kokomo, IN, is acceptable for the purpose of proceeding to the Statement of Basis," and noted two outstanding issues:

1. The cancer unit risk factor for PCE has been revised in IRIS and will change the groundwater and soil gas performance standards.
2. The reference to "cumulative risk estimates" in Appendix C was previously discussed between Bhooma Sundar and Francis Ramacciotti in May 2011. It was agreed during that discussion, and others, that a cumulative risk assessment will not be an acceptable decision point for exceedances of groundwater or soil gas performance standards. EPA's preferred decision criteria is appropriate tiered sampling; soil gas, sub slab, indoor air, etc.

EPA also stated that RACER may address these issues in a supplemental memo to EPA, rather than revising the Corrective Measures Proposal (CMP), and this memo will be incorporated into the administrative record and the Statement of Basis. This supplemental memo documents RACER's response to the two EPA comments (PCE Revised Criteria and Cumulative Risk Estimates), as discussed with you and Bhooma Sundar on 3/1/2012.

PCE Revised Criteria

The groundwater and soil gas vapor intrusion screening criteria for tetrachloroethylene (aka perchloroethylene or PCE) presented in Appendix B of the CMP were revised to reflect the changes in the cancer unit risk factor and the reference concentration for PCE (Integrated Risk Information System, February 10, 2012). These revised criteria are presented in the attached Tables B-1, B-2 and B-3. The supporting documentation for the derivation of the revised PCE

groundwater vapor intrusion criteria are the USEPA Johnson & Ettinger modeling spreadsheets (USEPA, 2004); these spreadsheets are also attached as an update to the 2011 CMP. The soil gas vapor intrusion criteria were derived as before using Equations 95, 96, 103 and 104 of the Indiana Department of Environmental Management (IDEM) Remediation Closure Guide (May 2011) and IDEM's default attenuation factor of 0.1.

The revised criteria for PCE are higher than previously calculated, based solely on changes in toxicity factor values, and are summarized below:

Groundwater and Soil Gas Vapor Intrusion Screening Criteria for Tetrachloroethylene (PCE)		
	December 2011 CMP	Revised Value March 2012
Off-Site Groundwater, within plume, Commercial/Industrial	3.95 mg/L	33 mg/L
Off-Site Groundwater, within plume, Residential	2.35 mg/L	23.8 mg/L
Off-Site Groundwater, outside of plume, Commercial/Industrial	2.05 mg/L	21 mg/L
Off-Site Groundwater, outside of plume, Residential	1.49 mg/L	15 mg/L
Off-Site Soil Gas, Commercial/Industrial	210 ug/m ³	1754 ug/m ³
Off-Site Soil Gas, Residential	41 ug/m ³	417 ug/m ³

Cumulative Risk Estimates

Appendix C of the CMP describes the proposed vapor and groundwater monitoring program. Groundwater and soil vapor data will be compared to the groundwater and soil gas vapor intrusion screening criteria (from Appendix B) to identify the need for additional data collection. These additional data may be necessary to ensure that groundwater and soil gas monitoring meets the corrective measures endpoints in Table 5 of the CMP, which states, "Where an off-site vapor intrusion pathway is complete, demonstrate that exposure medium (soil vapor or indoor air, as appropriate) concentrations are below the cumulative target risk level of 1×10^{-5} and the target hazard index of 1."

Appendix C describes the use of the Appendix B screening criteria and separately the use of cumulative risk estimates to demonstrate that a corrective measures endpoint has been met. For the purpose of **establishing screening criteria**, the target cancer risk for each individual chemical is 1×10^{-5} and the target non-cancer hazard index is 1 so that additional data will be collected if the chemical concentration exceeds the screening criterion. For the purpose of **confirming a corrective measures endpoint**, the concentrations of site-related chemicals detected in groundwater at a particular location combined, have to meet the cumulative target cancer risk of 1×10^{-5} and the target non-cancer hazard index of 1.

If you have any questions on this letter, please call me at the number below.

RACER Trust



Robert W. Hare, P.E. CHMM
Cleanup Manager (IL, IN, KS, MO, NJ, WI)

C: Glynda Oakes, IDEM Office of Land Quality
Howard County Health Department
Carey Stranahan, City of Kokomo
Glen Boise, Kokomo Howard County Plan Commission
Kokomo Public Library (Public Information Repository)
Micheal Hill, Chief Operating Officer, RACER Trust (w/o attachment)
Sarah Fisher, ARCADIS

Attachments

Table B-1: Groundwater Vapor Intrusion Screening Criteria
Table B-2: Groundwater Vapor Intrusion Screening Criteria
Table B-3: Soil Gas Vapor Intrusion Screening Criteria Summary
USEPA Vapor Intrusion Modeling Spreadsheets