



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

March 5, 2015

REPLY TO THE ATTENTION OF:

LU-9J

Via E-mail and Certified Mail 7009 0320 0006 1468 2448
Return Receipt Requested

Mike Slenska
Three Rivers Management for
Beazer East, Inc.
Manor Oak One, Suite 200
1910 Cochran Rd.
Pittsburgh, PA 15220

Re: Review w of November 26, 2014
Human Health Risk Assessment,
Former Koppers Company Wood-
Treating Site, Carbondale, IL
U.S. EPA ID NO. ILD 000 819 946

Dear Mr. Slenska:

EPA required that Beazer East, Inc. (Beazer) complete a human health risk assessment for the former Koppers Wood-Treating Site in Carbondale, IL, based on current information. Beazer had prepared an earlier risk assessment when the regulatory lead for the Site was the Illinois EPA, shortly after the Remedial Investigation was completed (1991). The current risk assessment incorporates recent dioxin/furan data, current conditions, and proposed re-use plans for the property. This letter contains EPA's comments on the November 26, 2014 Human Health Risk Assessment (HHRA Report) submitted by ARCADIS on behalf of Beazer East, Inc.

Beazer and EPA collaborated on certain aspects of the HHRA during its development. In particular, we reached agreement on a number of key assumptions and provided reviews of draft reports. Some of EPA's comments and recommendations on the November 2014 document below were discussed during an EPA conference call with ARCADIS and Beazer on January 29, 2015.

In general, we found that the HHRA Report was successful in following through on the previously approved Work Plan (September 25, 2014). However, the HHRA must be revised to provide clarification on a number of topics and certain sections must be expanded to make the HHRA Report a more complete and supported "stand alone" document.

General Comments

Section 2.0 Hazard Identification

The second paragraph states that groundwater will not be addressed in HHRA “... *because exposure to COPCs in groundwater is not anticipated under any receptor scenarios.*” This statement should be expanded to cover the reasons or rationale for why there are no concerns over receptor exposure to groundwater on-site or to groundwater migration and exposure off-site. The potential or lack of potential for groundwater use and exposure on-site should be explained, including whether groundwater could be contacted during site maintenance or site re-development activities. The report should explain any off-site groundwater migration, ingestion as drinking water and other exposure routes, as well as current use-restrictions and/or other drinking water sources that would preclude groundwater use.

Section 2.1.1 Soil

The report should be revised to include a definition of “surface soil.”

Section 2.3 Screening of Compounds of Potential Concern

This Section states that maximum detected soil and sediment concentrations were conservatively screened against the EPA regional screening levels (RSLs) (USEPA 2014a) or against USEPA’s Dioxin PRGs. If maximum concentrations of a constituent were found to be below the RSLs/PRGs, then that constituent was not included as a COPC and was not retained in the HHRA.

However, EPA noted that almost all of the site constituents subjected to screening were detected at high frequency (i.e., generally > 40%). Therefore, based on EPA Risk Assessment Guidance for Superfund (RAGS), an argument could be made that all of the detected constituents should be included in the HHRA risk and hazard estimates. Consequently, this Section should be expanded to explain the rationale and validity of completing the screening level exercise vs including COCs detected at a high frequency. Some data sets (Table 1 – Table 8) having multiple constituents below a screening level were eliminated as COPCs. The document should be revised to explain the significance of eliminating those COPCs in terms of understanding the quantitative estimates of human health risk.

Section 3.0 Exposure Assessment

This Section describes the elements of a complete exposure pathway from a contaminant source to a potential human receptor, which are summarized in the bullet points on page 10. This Section would benefit from the addition of a Conceptual Site Model (CSM) diagram that displays the linear progression from contaminant source/release mechanism to a secondary source such as soil, migration pathway to a

to a receptor and a human exposure route. An example of a CSM diagram is shown as Figure A-2 in the EPA Soil Screening Guidance (http://www.epa.gov/reg3hwmd/risk/human/rb-concentration-table/documents/SSG_nonrad_user.pdf). EPA recommends that the information currently contained in Table 13 of the HHRA Report should be incorporated into the CSM Model. (Table 13 could be retained as a means for referring to the specific-receptor quantitative risk and hazard estimates shown later in the HHRA Report.)

Section 3.3 Potential Exposure Pathways and Receptor Populations

Consistent with the USEPA letter dated March 14, 2014, the HHRA report must explain the conclusions about the neighborhood south of the site. The report must explain why the constituent sampling results and other lines of evidence for the neighborhood led to a conclusion that site contaminants are not contributing to significant contaminant exposure.

In the March 2014 letter, EPA requested that: “... *The risk assessment document should contain a description of the contaminant characterization that Beazer completed in the neighborhood, including a description of the sampling design (e.g., the rationale for sample locations) and data collection activities. The risk assessment document should include Beazer’s sampling results and this letter in an appendix or attachment. In addition, the risk assessment should make reference to the sampling results from 2005 (EPA and IEPA with Beazer’s splits) and 2006 (City of Carbondale).*”

In addition to the description requested above, the current HHRA Report may refer to the additional lines of evidence that EPA cited to support a conclusion that the area south of the site is not contaminated with wood-treating chemicals.

Specific Comments

Section 2.1 On-Site Data

This Section should be expanded to provide a summary which includes information on the soil sample collection methodology and the rationale for selecting sample locations. The information should refer to the EPA approved sampling work plans and the EPA approved QAPP document(s).

Section 2.3 Screening of Compounds of Potential Concern

Paragraphs 1 and 2 explain that RSLs for screening contaminants for sediment exposure were adjusted to account for the possibility of 16 days per year of exposure to sediments either on-site or off-site.

From a quantitative standpoint, it is not clear how the RSLs were adjusted from the

commercial/industrial default RSLs to site-specific RSLs of 16 days per year. EPA could not locate any exposure scenario for sediment exposure that used a 16-day per-year exposure frequency. The document should be revised to explain the basis of the revised RSLs or refer to where those scenarios are discussed in the HHRA Report. (Note that we were able to locate scenarios that used 16 days per year for soil exposure: e.g., site trespasser.)

Section 3.3 Potential Exposure Pathways and Receptor Populations
Table 15 EXPOSURE POINT CONCENTRATION SUMMARY - SITE SOIL
Figure 1 EXPOSURE AREAS

For the receptor described as the current/future on-site adult maintenance worker/caretaker, it is not clear how the exposure unit area was defined for the report.

In particular:

- 1) which Exposure Areas in Figure 1 is this receptor assumed to frequent?
- 2) is the exposure unit area based on a combination of Thiessen Polygons shown in Figure One?
- 3) if the COPC soil data within the Thiessen Polygons were used to derive a 95%UCL value, how was that calculation performed, and
- 4) is that 95% UCL the same as the *“Spatially-weighted 95th percentile upper confidence limits (UCLs) on the mean”* cited in the footnote of Table 15?

For improved transparency, the HHRA Report should be revised to answer the above questions.

Section 3.4.1 Soil and Sediment

The first paragraph states: *“Because of its high moisture content, sediment is not likely to be entrained in the air as dust. Thus, only the potential ingestion and dermal contact pathways were evaluated for sediment.”*

However, we could not determine that potential ingestion of sediments was covered in the Exposure Assumptions Table (Table 14) or the Cancer Risk and Hazard Summary tables.

Section 3.4.4 Potential Human Receptors and Exposure Assumptions

This Section states: *“Exposure assumptions for on-Site and off-Site receptors considered to have potentially complete pathways are presented in Table 14. These assumptions are consistent with estimating a reasonable maximum exposure (RME), which is are [sic] representative of a [sic] high-end exposures.”*

This Section needs some further explanation. It is not clear why the selected exposure assumptions (i.e., numerical exposure factors) are consistent with estimating an RME

which will, by definition, result in determining a high-end exposure. In particular, we recall through conference calls with ARCADIS and review of the HHRA Work Plan that site-specific exposure concentrations and exposure factors were proposed for nearly every exposure scenario evaluated in the HHRA Report.

Section 3.4.4.6 Future On-site Solar Farm Maintenance Worker

The first paragraph states: *“The worker is assumed to be exposed to surface soils at the Site 1 ½ days/week for 50 weeks/year.”*

We recall discussing the Exposure Frequency (EF) with Beazer for the solar maintenance worker during the development of the HHRA Work Plan. Assuming the selected EF is based on some known experience at a solar farm of similar size and complexity to the one planned for the Former Koppers site, the HHRA report should be revised to provide a reference or discussion to support the selected EF value to enhance the transparency of the document.

Section 6.4 Risk Characterization

We noted that site-specific exposure factors were employed for most exposure scenarios and sub-chronic toxicity factors were employed for some COPCs. This part of Uncertainty Analysis should provide additional explanation for why the risk characterization and risk estimates should be regarded as conservative and protective estimates. Revise the document to provide the basis for concluding that each exposure scenario results in an RME estimate, and to explain why, therefore, the “... risk and hazard estimates presented in this HHRA likely greatly overstate potential risk for most, if not all, receptors.”

COPC Risk Screening Tables

Table 2: Sediment COPCs; Table 6: Sediment COPCs; Table 8: Sediment COPCs

For these three Tables, revise the document to explain how the Screening Concentrations for TCDD-TEQ were derived or calculated.

Exposure Point Concentration Summary Tables

Table 15: (EPC for Site Soil)

It is not clear whether the numerical values in this Table refer to the combination of all COPC data across the entire site, or to a subset of data for a specific receptor who may experience soil contact. The report should be revised to identify how the data were applied to specific exposure scenarios to generate risk and hazard estimates.

Table 16 and Table 17: Exposure Point Concentration Summary – Proposed Solar Use Area Soil and Exposure Point Concentration Summary – Future Proposed Solar Use Area Soil

The difference between the PROPOSED SOLAR USE AREA (Table 16) and the FUTURE PROPOSED SOLAR USE AREA (Table 17) is unclear. The two Tables display different UCL Concentrations for the Constituents.

Revise the document to reconcile the discrepancy or explain the difference between the tables.

TABLE 26 (EPC for Off-site Fish consumption scenario)

For TCDD-TEQ, the Arithmetic Mean is listed as 2.1E-07 mg/kg. It is unclear how the Maximum Concentration could be a lower value (i.e., 1.6E-07 mg/kg). (We noted that the Maximum Concentration values for the other COPCs in the same Table do not follow that pattern.) The table appears to be in error as Table 10 lists the maximum detected value for TCDD-TEQ in fish as 3.1E-07 mg/kg and the minimum detected value as 1.6E-07 mg/kg. Please determine whether an error was made in calculating risk using the minimum instead of the maximum EPC value and revise the document accordingly.

TABLE 27 (EPC for Deer Consumption Scenario)

Regarding the column labeled "Soil EPC" - Are the values presented in the column calculated in a previous Table? If so, identify the table. If not, revise the document to explain the origin of the values.

Thank you for providing the HHRA report. Please revise the document for submittal to EPA by April 30, 2015. If you would like to discuss these comments we will arrange a telecon. Please call me if you have any questions at 312-886-3020.

Sincerely,



Carolyn Bury
Project Manager

cc: Jim Moore, IEPA
electronic cc: Paul Anderson, ARCADIS
Jeff Holden, ARCADIS
Mario Mangino, EPA
Bhooma Sundar, EPA