



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

OCT 06 2015

REPLY TO THE ATTENTION OF:

LU-9J

Via E-mail and Certified Mail 7009 1680 0000 7671 1319

Return Receipt Requested

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

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

Dear Mr. Slenska:

Thank you for submitting the draft revised Human Health Risk Assessment Report dated April 27, 2015 ("April HHRA Report"), presented in a red-line/strikeout format. Beazer prepared the April HHRA Report in response to EPA's March 5, 2015 review of Beazer's draft Human Health Risk Assessment Report, dated November 26, 2014 ("November HHRA"). The HHRA documents were prepared by your consultant, ARCADIS U.S., Inc.

Our discussion on September 10, 2015 established that any portion of the April HHRA Report that was not revised (red-line/strikeout) defaulted to the November HHRA version. Accordingly, the final submittal will be completed by combining the two HHRA versions. We discussed Appendix B which was omitted from the April HHRA. Contrary to your understanding at the time of our call, Appendix B is new and not found in the November HHRA. Therefore, Beazer should provide EPA with Appendix B in advance of submitting a completed document.

The additions and revisions to the HHRA enhanced the document and contributed to its transparency. Figure 2, Conceptual Site Model (CSM), which is also new and not previously reviewed by EPA, is an essential figure for the report. EPA has the following comments on the CSM.

Figure 2. Conceptual Site Model

1. Add a column for “Primary Constituents of Concern” after “Potential Sources” and list the Site COCs, including creosote as a DNAPL.
2. The CSM does not include DNAPL and its migration pathway to receptors; the constituent and its pathway must be added.
3. Change “Potential Sources” to “Sources.”
4. Under “Potential Sources,” the word “possible” must be struck from the text in the box that states “possible releases during historic operations as a wood-treating facility.” Releases have been documented and described in Beazer documents. Therefore, the word “possible” is inaccurate.
5. Under “Primary Media,” change the box with the words “onsite soil” to “on-site surface and subsurface soil.”
6. Add “gravity” under Potential Transport Mechanisms to account for DNAPL migration around the Site in the subsurface and on the surface, including into the waterways.
7. For *off-site soil south of the site*, the current/future adult and child resident exposure pathway status should be changed from “incomplete” to “complete but insignificant.” EPA’s analysis of neighborhood soil concluded that exposure to contaminants of interest is complete but insignificant based on the COC concentrations observed in off-site soil. A footnote could be added in the CSM figure explaining the rationale.
8. For *off-site soil west, north, and east of the site*, the current/future adult and child resident exposure pathway status should be changed from “incomplete” to “complete but insignificant.” Land-use in these areas includes farms, light commercial/industrial and undeveloped areas.
9. There should be a way to capture *off-site surface water and sediment west, north, and east of the site* for the current/future adult and child resident exposure pathway status. Land use in these areas includes farms, light commercial/industrial and undeveloped areas. For example, exposures to Smith Ditch, which runs from the Site to private property (farmland) to the north, were evaluated in the HHRA. Exposures to Smith Ditch water and sediment would be “complete” and presumably “insignificant.”

Other than a typo on page 6, second paragraph which states, “of the on-Site of off-Site” EPA has no further requests for revisions. We request a telecon to discuss the CSM

revisions prior to your submission of the (complete) revised HHRA or you may submit an interim revised CSM figure for EPA's review. Please submit the final HHRA by October 30, 2015.

Addressing Uncertainty Regarding Fish Ingestion

The HHRA presented an analysis concluding that consuming fish from the reach of Crab Orchard Creek (COC) closest to the Site was not associated with a significant level of elevated health risk. The analysis reported no significantly elevated long-term cancer risk or noncancer health hazard from consuming 8.1 grams per day of fish from COC. The fish used in the HHRA analysis were collected and analyzed for the purpose of establishing the baseline conditions for the Monitored Natural Recovery remedy. The fish data represented a very small sample set of three "edible" sized catfish which were caught in 2008. The fish were caught close to the Site near the area where Piles Fork creek discharges to COC. An assumption put forward by Beazer for the HHRA was that COC had low fish productivity and was probably not fished much due to its inaccessibility (steep banks and location). Beazer also noted the lack of fishing evidence near the Site such as lines entangled in vegetation and other fishing debris. Those assumptions applied to the reach of COC closest to the Site, which EPA accepted.

The very small sample size described above is the basis for significant uncertainty regarding the evaluation of fish consumption from COC. Therefore, as a precautionary measure to ensure protection of human health and with the availability of updated toxicity values for dioxin/furan compounds, in 2012, EPA provided Illinois EPA with the data from Beazer's 2008 fish sampling/analysis event and an evaluation of edible fish tissue contaminant concentrations in Crab Orchard Creek. Illinois EPA shared the fish contaminant data with the Illinois Fish Contaminant Monitoring Program (IFCMP). The group performed an analysis of fish consumption based on their methodology *Protocol for a Great Lakes Sport Fish Consumption Advisory*, Great Lakes Sport Fish Advisory Task Force, 1993; ("Great Lakes Protocol"). The analysis demonstrated a risk from consuming fish due to the measured dioxin/furan levels. Based on the results, the Illinois Department of Public Health imposed a fish consumption advisory for COC in Jackson County, which recommended limiting consumption to one meal per week of channel catfish based on dioxin/furan contamination (in addition to the methyl mercury advisory for all Illinois waters).

The fish consumption advisory offsets some of the uncertainty in the HHRA fish consumption analysis and provides a measure of protection for consumers of fish from COC. The uncertainty in the HHRA stems from a number of factors from the 2008 fish sampling including the small data set derived from a single sampling event, the small size of edible fish, and the limited extent of the fish sampling reach compared to the potential for migration of Beazer-specific contaminants within COC or fish with an elevated body burden moving within COC.

When EPA discussed the uncertainty associated with the small data set with Illinois EPA

in 2013, the State offered to let EPA or Beazer participate in its routine sampling program for COC and to analyze fish for dioxin/furan congeners. The State's routine sampling location is at Dillinger Road Bridge, which is between one and two river miles downstream of the Site. Not far downstream of the Site, the COC becomes wider. At Dillinger Road the creek is easily accessed for fishing from the bridge and the banks, yields game-sized fish, and is used regularly for fishing. In addition, landowners along COC downstream of the Site where it is wider/deeper and more accessible than it is near the Site may use it for fishing.

During the State's most recent sampling event, the game-sized fish collected in COC were carp and smallmouth buffalo. Catfish, the species evaluated by Beazer in the HHRA, were not caught during this event. As catfish and carp have similar life habits (i.e., are bottom-dwelling species, exposed to sediment-bound contaminants, prone to bioaccumulation of contaminants, and caught for consumption) the analysis of carp could have been completed by Beazer and provided as evidence related to consumption risks. However, while Beazer had the opportunity to analyze fish aliquots from the Illinois EPA sampling event, Beazer elected not to do so because only catfish were used in the HHRA.

The HHRA presented evidence that fish consumption at the COC reach closest to the Site is not associated with a significant level of elevated health risk. However, it should be recognized that the fish consumption advisory covers a wider reach of the COC, and that data gaps still exist. Dillinger Road Bridge is a confirmed fishing location identified by the State. To fulfill its responsibility for protecting public health, EPA must address the uncertainty in Beazer's current evaluation of fish consumption for COC based on the finding that game-sized fish (carp and smallmouth buffalo and potentially catfish) could be regularly caught downstream of the facility at Dillinger Road Bridge.

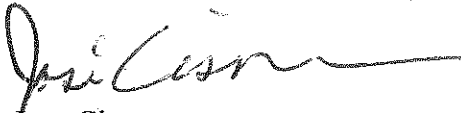
In order to address the fish consumption advisory and health risk uncertainties for Crab Orchard Creek, EPA will require that Beazer include fish sampling in its Monitored Natural Recovery sampling plan and analyze the fish for dioxin/furan congeners and arsenic. The resulting data will be reviewed by the IFCMP. EPA and the IFCMP are currently developing an exit strategy for the fish advisory that will be incorporated into the monitored natural recovery (MNR) remedy and identify the end point for Beazer's fish sampling requirements.

The EPA will approve the revised HHRA with the caveat that, because the current fish consumption exposure analysis is encumbered with uncertainty, and given the importance of human health protection, Beazer must include an analysis of Site contaminant fish body-burden in its MNR remedy. We anticipate that the MNR remedy plan will include an exit strategy based on a determination to be made by the IFCMP that will allow Beazer

to discontinue monitoring fish body burden.

Please contact Carolyn Bury of my staff if you have any questions about this letter at
(312) 886-3020

Sincerely,



Jose Cisneros

Chief

Remediation and Re-use Branch

cc: Jim Moore, IEPA
Tom Hornshaw, IEPA
e-cc: Paul Anderson, ARCADIS
Dave Bessingpas, ARCADIS
Jeff Holden, ARCADIS

