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July 18, 2008

Mr. James Hosch
Wisconsin Department of Natural Resources
1401 Tower Avenue
Superior, WI 54880

Re: Koppers Site – Superior, Wisconsin
Response to May 28, 2008 Letter

Dear Mr. Hosch:

This letter responds to comments provided by the Wisconsin Department of Natural Resources (WDNR) in a May 28, 2008 letter to Beazer East, Inc. (Beazer) regarding the ecological risk assessment (ERA) approach identified for the off-property portion of the referenced Site. The ERA approach was described in the "Off-Property Ecological and Human Health Risk Assessment Approach Memoranda, Koppers Inc. Superior, Wisconsin Facility – Off-Property Area" which was prepared by AMEC Earth & Environmental (AMEC), and submitted to the WDNR on September 24, 2007. WDNR's comments apply specifically to Site-related constituents associated with sediments in Crawford Creek.

WDNR comments were categorized into the following topics:

- Comments on use of "Exposure Point Concentrations (EPCs)"
- Comments on the sole use of "Equilibrium Partitioning Sediment Benchmarks (ESBs)"

Each topic is discussed below, including a brief reiteration of the nature of the WDNR comment followed by Beazer's response.

Comments on use of "Exposure Point Concentrations (EPCs)"

One main comment falls under this topic.

Summary of WDNR Comment: *Because benthic organisms have a very limited range of contaminant exposure, the nearest sample would typically be representative of their exposure. A calculation of an EPC by arithmetical averaging of samples or other averaging method over an area which exceeds the typical range of benthic organisms is inappropriate. The Department may consider the use of a mean based on the 95% upper confidence limit for select species where appropriate for the site.*

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Beazer Response: Beazer concurs with WDNR that most benthic organisms have a limited home range and that the majority of their potential exposure to constituents in sediments comes from sediments in a relatively local area. Beazer had not intended to evaluate potential risks to benthic macroinvertebrates using arithmetic average sediment concentrations. Arithmetic average concentrations will be used to evaluate potential risks for higher trophic level species that are assumed to forage over an area whose constituent concentration is represented by multiple sampling points.

Comments on the use of “Equilibrium Partitioning Sediment Benchmarks (ESBs)”

Two main comments fall under this topic. Each is addressed separately below.

1. ESBs require analysis for 34 polynuclear aromatic hydrocarbons (PAHs)

Summary of WDNR Comment: *According to EPA’s “Procedure for the Derivation of Equilibrium Partitioning Sediment Benchmarks (ESBs) for the Protection of Benthic Organisms: PAH Mixtures”, ESBs require analysis for 34 PAHs. Have all 34 PAHs been collected at the Site? The WDNR would consider fewer PAHs if a strong correlation is demonstrated between the EPA recommended 34 PAHs and a lesser quantity of analyzed PAH compounds at this site.*

Beazer Response: Sediments at the Site have not been analyzed for all 34 PAHs identified in the above cited EPA document. However, publications are available that could be used to estimate the potential toxicity of a mixture of PAHs based upon 16 rather than 34 PAHs, so analysis of 34 PAHs is not necessary to use the equilibrium partitioning approach. Additionally, as described below in the response to WDNR’s second comment, Beazer has conducted sediment toxicity tests and benthic macroinvertebrate community surveys at several sites where wood treating-derived PAHs were the primary constituents of concern. Findings at these other sites are relevant to this Site, as described below.

2. No single line of evidence should be used to drive decision-making.

Summary of WDNR Comment: *The Department considers exceedances of ESBs and Consensus Based Sediment Quality Guidelines (CBSQGs) a trigger for the need for additional data. Toxic properties including ultraviolet phototoxicity should be accounted for. Because the site exceeds CBSQGs the Department requires a weight of evidence approach which considers chemistry, toxicity, and benthic community studies from affected sites and non-affected reference sites in determining the need for further action at the site. The use of ESBs and the Department’s Consensus Based Sediment Quality Guidelines are appropriate methods as a component of the weight of evidence approach but no single line of evidence should be used to drive decision-making.*

Beazer Response: As noted above, Beazer has conducted sediment toxicity tests and benthic macroinvertebrate community surveys at several sites where wood treating-derived PAHs were the primary constituents of concern. Based upon the findings at those sites, Beazer has derived concentrations of PAH in sediments that are protective of the benthic macroinvertebrate



community¹. Those protective concentrations are based upon all of the lines of evidence described in the WDNR's comment (chemistry, toxicity, and benthic community studies) including phototoxicity. Given the consistency of findings between the other wood treating sites at which Beazer has conducted sediment investigations and assessments, Beazer is confident the sediment benchmarks derived from these multi-site studies can provide an additional point of comparison that is directly relevant to this Site and protective of the benthic macroinvertebrate community at this Site. By incorporating the weight of evidence inherent in these multi-site studies, Beazer does not believe additional sediment and benthic community characterization is required at this Site.

With this letter, Beazer believes all of WDNR's comments on the off-property ERA and HHRA Technical Memoranda have been addressed. Once Beazer receives confirmation from WDNR that additional comments on the Technical Memoranda are not forthcoming, Beazer will begin preparing the Ecological and Human Health Risk Assessment to evaluate potential risks to the receptors identified in the Technical Memoranda.

Please feel free to contact me or Jane Patarcity with any additional comments or questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul Anderson", with a long horizontal flourish extending to the right.

Paul Anderson
Vice President
Technical Director, Risk Assessment

cc: John Robinson, WDNR
Mark Gordon, WDNR
Tom Janisch, WDNR
Jane Patarcity, Beazer
Jeff Holden, ARCADIS
David Bessingpas, ARCADIS
Henry Nehls-Lowe, WDHFS
Bob Egan, USEPA Region V
Vicki Drake, Douglas County Department of Health and Human Services

¹ Paul Anderson, Arjun Nair, Jane Patarcity and Ken Cerreto. 2006. Toxicity of Creosote-Derived PAH in Sediment. Society of Environmental Toxicology and Chemistry 25th Annual Meeting. November 5-9, 2006. Montreal, Canada.