TETRA TECH

August 25, 2015

Mr. Scott Miller
Remedial Project Manager
U.S. Environmental Protection Agency, Region 4
61 Forsyth Street, SW
Atlanta, GA 30303-3104

Subject: **Responses to Draft EPA Comments on:**
Pre-Design Investigation Work Plan: Design Track 2
Cabot/Koppers Superfund Site
Alachua County, Florida

Dear Mr. Miller:

On behalf of Beazer East, Inc., we are providing herein responses to your May 29, 2015 draft comments on the *Pre-Design Investigation Work Plan: Design Track 2* (Tetra Tech, May 2015). We are also providing an updated version (Version 2) of the *Work Plan* for review. The updated version incorporates the responses to comments.

Please note that the investigation work described in the *Work Plan* is for purposes of designing the components of Design Track 2 including the cutoff wall and stormwater management system. Significant prior investigation work has been completed to characterize DNAPL source areas, on-Property soils, and sediment concentrations in Springstead Creek.

The attached *Work Plan* has been updated to show a revised cutoff-wall alignment (Figure 6) that leaves approximately 50 feet between principal source areas and the cutoff-wall alignment, reducing the importance of uncertainty in the source-area boundary definitions. The updated Work Plan also identifies additional laboratory testing during mix design and includes additional sediment analysis, as requested.

If you have any questions regarding these responses or the revised *Work Plan*, please contact Mitchell Brourman or me.

Sincerely,

Gregory W. Council
Principal Engineer

TETRA TECH
1165 Sanctuary Parkway, Suite 270, Alpharetta, GA 30009
Tel 770.619.9950 Fax 770.619.9903 www.tetratech.com

Cutoff Wall

EPA Comment #1
Section 2.1.1 - Please describe for what purpose the information obtained from the Standard Penetration Test (SPT) testing will be used. The SPT sampler collects relatively small amounts of soil and it may be limiting in the amount of soil available for compositing for the mix design testing. A sonic rig may be more appropriate for collecting the volumes of soils needed for the mix design testing.

Response:

The objective of the SPT testing is to provide an indication of soil resistance (blow counts or N values) and to advance a split-spoon soil sampler for determination of soil stratigraphy including depth to the middle clay of the Hawthorn Group. The soil resistance provides an indication of degree of difficulty in excavating the trench needed for the cutoff wall. Soil samples will be analyzed in the laboratory to determine other relevant geotechnical properties for design and retrieved soil will provide material for mix testing, in accordance with Section 2.3 of the Work Plan. The SPT samples are 2 feet long and 2 inches in (outside) diameter. Per standard practice, a small sample of the retrieved soil is retained in a sample jar for laboratory analysis, but the entire retrieved column can be saved if it is needed for mix testing, per field determination. The Tetra Tech design team has used this sampling technique successfully for past designs of cutoff walls in similar hydrogeologic settings.

EPA Comment #2

Section 2.2 – Please describe the rationale that will be used for selecting the contingent boring locations, such as the distance from the original boring and the plan for working around surface obstructions. For example, if dense non-aqueous phase liquid (DNAPL) impacts are found to extend to the western edge of the CSX right-of-way, will additional contingent borings be completed on the opposite side of the right-of-way or will access be obtained from CSX to complete contingent borings within their right-of-way?

Response:

Locations of contingent borings will be determined on an as-needed basis by the design team, based on the conditions encountered at the original (DNAPL-impacted) boring(s) and any other relevant information such as conditions at other borings installed during prior investigation activities. Subsurface obstructions will generally be avoided. The distance from the original boring(s) will likely be between 10 ft and 100 ft. Please note that the revised (attached) Work Plan (see Figure 6) includes a revised cutoff-wall route that is approximately 50 feet outside the principal source areas which will reduce the likelihood of needing contingent borings.

The cutoff wall will be designed to encircle the four principal source areas to contain the vast majority of DNAPL impacts on the Property. However, it is recognized that some minor DNAPL-impacted material may be present outside the cutoff wall.

*Regarding the CSX property: In 2009, thirteen characterization borings were installed in the Hawthorn Group along the eastern Property boundary, which is the western edge of the CSX right of way (*Supplemental 2009 Hawthorn Group Investigation and Monitoring Well Installation Report*, GeoTrans, August 14, 2009). These borings demonstrated that extensive ongoing DNAPL migration is not occurring in the vicinity of the eastern Property boundary. Four of the thirteen borings installed along the Property boundary encountered evidence of minor historic DNAPL migration. Relatively thin residual/stained DNAPL zones were detected in the Upper Hawthorn in three borings installed to the east of the former Process area; staining was also detected in one Lower Hawthorn boring installed downgradient of the former Drip Track area. All remaining borings had no evidence of historic and/or current DNAPL migration. Hence, the results of this investigation indicated that on-going off-Property DNAPL migration is not currently occurring and that historic DNAPL impacts along this Property boundary were relatively minor.*

Nevertheless, if eastern Property boundary borings indicate the need for contingent boring further east, they will be installed. The location will depend on conditions encountered at the original (DNAPL-impacted) boring(s) and

any other relevant information such as conditions at other borings installed during prior investigation activities. It is assumed that access for borings will be provided by CSX if required, as has been done in the past.

EPA Comment #3

Section 2.2 – In the event that the borings installed are found to have DNAPL impacts directly above or in close proximity to the Hawthorn Group middle clay, it would be beneficial to collect soil samples from both the impacted materials and the middle clay for laboratory analysis of the site contaminants of concern (COCs) and the leaching potential from each in order to assess to what degree the contaminants are leaching into and through the middle clay.

Response:

The purpose of the investigation described in this Work Plan is to enable the completion of design work for the cutoff wall and stormwater improvements. For these purposes, groundwater contaminant concentrations at boring locations are not needed. Furthermore, laboratory analyses for COCs is not informative for DNAPL impacted soil that, by definition, contains high concentrations of PAHs. In order to minimize the potential for cross-contamination, soil borings will not be advanced into the middle clay where significant impacts are observed at shallower depths.

Where groundwater impacts are observed at groundwater wells below the middle clay of the Hawthorn Group, these impacts will be addressed by other measures identified in the Amended Record of Decision (ROD), which are part of Design Track 5. The ROD identifies treatment of impacted areas in the Lower Hawthorn by chemical treatment (in-situ geochemical stabilization [ISGS] or injection of chemical oxidation reagents) and the ROD identifies hydraulic containment of groundwater impacts for the Upper Floridan Aquifer.

EPA Comment #4

Section 2.3 – Is it assumed that the barrier wall installation will be completed via in situ means (i.e., deep soil mixing or cutter soil mixing)? If ex situ mixing applications are to also be considered, additional soils testing beyond what is described is warranted.

Response:

Ex-situ mixing is the method most likely to be employed for cutoff-wall construction. The Work Plan has been revised to indicate that, as part of the laboratory soil-bentonite mix study, the density of the soil-bentonite mixture, the density and Marsh funnel viscosity of the bentonite slurry, and the pH of the mixing water will be documented. Specifications for these properties will be stipulated in the design along with requirements for construction quality assurance (CQA). Filtrate loss will also be measured as part of the design effort to make sure that the bentonite is of good quality.

EPA Comment #5

Section 2.3.1 – We recommend also performing the index and engineering properties testing on the composited soil mixes prior to using them in the mix testing. This will allow a comparison to be made between the composited mix and individual SPT samples collected. Additionally, it may also be useful to also complete the mix design testing on soils solely from a more permeable zone to assess the worst case scenario expected to be encountered.

Response:

The Work Plan has been updated to indicate that moisture content and grain-size distribution will be measured for the composite soil sample to document that the composite soil sample is representative of the soil strata that will be encountered in the cutoff-wall construction. The hydraulic conductivity of the soil-bentonite mixture will be determined by the added bentonite, not the native soils. The soil-bentonite mixture will be homogenized in the

field during construction, and appropriate CQA steps will be defined to ensure that zones of high permeability (which would be due to low bentonite content) do not form.

EPA Comment #6

Section 2.3.2 – We recommend that all groundwater used in the cutoff wall mix design for both the mixing fluid and the permeant be analyzed for site COCs prior to its use in testing. This will help to ensure that the concentrations in this groundwater are representative of expected conditions and to eliminate this as an unquantified variable in the event that the results obtained indicate that alternate water sources need to be evaluated.

Response:

Permeant groundwater quality (in terms of COC concentrations) is well defined by existing data from groundwater monitoring wells within and near the planned cutoff wall route. Impacted groundwater, obtained from Site wells, will be used as the permeant in the mix testing. There is also existing data to define COC concentrations of treatment-plant influent and effluent, which are candidate mixing fluids. Other potential mixing fluids will be essentially free of Site COCs (e.g. tap water). The concentration of certain ions (e.g. calcium) which may inhibit bentonite swelling (and therefore cutoff-wall performance) in groundwater and candidate mixing fluids may be tested during design, as indicated in Section 2.3.2 of the Work Plan. Additionally, the updated version of the Work Plan (attached, see Section 2.3.2) includes testing to ensure that mix performance is not inhibited by the sodium permanganate-based ISGS fluid used for source-area treatment.

Off-Property Sediment Sampling and Analysis

EPA Comment #1

Please add dioxin total equivalents (TEQ) to the analytes for sampling in the drainage ditch. As you are aware, the surface water that drains from the Koppers Site has these compounds present in it, and we need to confirm that there are not concentrations of these compounds exceeding human health and ecological criteria in sediments.

Response:

In the updated Work Plan, dioxin has been added to the analyte list for samples taken from the MSY ditch. Arsenic has also been added per request of the Florida Department of Environmental Protection.

EPA Comment #2

The current workplan stipulates only that sediment sampling will be done in the drainage ditch leading from the Site to Springstead Creek. While this approach is an acceptable first-cut at characterizing sediments that may have contamination exceeding cleanup criteria, it may be necessary to sample directly in Springstead Creek if the sampling done here does not demonstrate that the sediments at the closest point to Springstead Creek meet cleanup criteria and/or human health and ecological criteria.

Response:

Comment noted.