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June 15, 2004

Reference No. 13968

Mr. Brad Stimple
U.S. EPA, REGION 5, ERD
25089 Center Ridge Road
Westlake, OH 44145

Dear Mr. Stimple:

Re: Upstream Parcels Removal Action Work Plan Addendum No. 4
Soil Verification Sampling
Bailey's Branch and Pleasant Run Removal Action
Bedford, Indiana

Attached for your review, please find revised pages presenting updated soil verification sampling procedures for sidewall sampling from the Upstream Parcels Removal Action Work Plan (July 18, 2003). These verification sampling procedures will be utilized for the Upstream Parcels Removal Action until United States Environmental Protection Agency (U.S. EPA) approves a return to utilization of the original sidewall sampling procedures included in the approved Work Plan. As discussed, we will continue to evaluate whether to similarly amend the Downstream Parcels Removal Action Work Plan as we proceed with the removal work.

Should you have any questions on the above, please do not hesitate to contact us.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

for Jeff Daniel

SR/rcc/30
Encl.

c.c.: Peter Ramanauskas(U.S. EPA)
Stacey Delareintrie (Tetra Tech)
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CY Jeng (Environ)
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collected from the non-industrial parcels will be analyzed for PCBs to determine if the applicable cleanup criterion for PCBs of 1.8 mg/kg has been achieved on a 95 percent UCL of the mean basis throughout each approximate ½ acre grid of the affected area of the property. A rapid turnaround time for PCB analysis will be utilized for all verification sample analysis to minimize the time that the excavated area is required to remain open.

The proposed procedure for floodplain soils within the non-industrial parcels involves the following steps:

1) For each 200 foot section of creek, an approximate ½-acre area will be surveyed along the creek. The area will be approximately 100 feet wide and 200 feet long oriented lengthwise, roughly parallel to the creek. If the excavation limit is extended beyond the limits of the ½-acre area by more than 50 feet in each direction, an additional ½-acre area will be added to provide coverage for the additional acreage. If the excavation limits extend less than 50 feet beyond the limit of the ½ acre, the area will be extended to include the entire excavated area. Each area will be subdivided into 8 blocks. The approximately 50 by 50 foot blocks may be enlarged to meet the geometry of the creek or the contaminated area. Figures 3.1 and 3.2 identify the layout of the verification sampling grid on the Site. Where the excavation width is less than 150 feet, the verification sampling grid will be centered on the excavation rather than the creek.

2) Within each ½-acre area, excavate soil from locations where existing site characterization data show PCBs at concentrations exceeding 1.8 mg/kg. Excavation will be conducted to the extent appropriate to achieve a 95% UCL of 1.8 mg/kg based on post-excavation samples for the ½-acre area. Post-excavation samples will consist of a 5-point composite sample collected from the top 4" of the ground surface at each of the eight blocks. Blocks excavated entirely to bedrock will be considered to have zero residual PCBs in soil for calculating the 95% UCL soil PCB concentration.

3) For areas downstream of the Site Source Control barrier outside of Outfall 002 where the depth of the outermost side wall of the excavation is greater than 6 inches, soil samples will also be collected from the side walls for every 25 linear foot section as a 5-point composite sample with sample aliquots collected approximately every 5 linear feet of sidewall. For all other areas covered by this work plan, for side walls greater than 6 inches in height a 5-point composite sidewall sample will be collected for every 50 linear foot section, with sample aliquots collected approximately every 10 feet. Alternatively, for areas downstream of the Site Source Control barrier outside of Outfall 002 the U.S.

EPA may approve collecting the 5-point composite sidewall sample for every 50 linear foot section consisting of aliquots collected every 10 feet.

4) In each ½-acre area, composite sample analyses will be reviewed to ensure that no composite result exceeds 5 mg/kg PCBs. Should any result exceed this limit, additional excavation will be performed in the corresponding block. If no composite sample exceeds 1.8 mg/kg, then the ½-acre area meets the cleanup criterion and no further excavation will be necessary.

5) If one or more composite samples exceed 1.8 mg/kg (and no composite sample exceeds 5mg/kg), then the 95% UCL on the mean of the composite sample concentrations will be calculated using all composite samples (base and sidewall samples) collected from each of the ½-acre areas.

The 95% UCL will be calculated using a nonparametric bootstrap method, since the verification sample concentrations may not be normally or lognormally distributed. Current U.S. EPA guidance recommends the use of nonparametric methods (including nonparametric bootstrap methods) in favor of methods recommended in older guidance, especially for situations where the probability distribution of a data set is not normal or is difficult to identify (U.S. EPA 2002).

The nonparametric methods do not rely on assumptions about the distribution of the data and are reliable for a wide range of distributions including normal and lognormal data. Bootstrap procedures are robust nonparametric methods that can be used to construct approximate confidence limits for the population mean. In these procedures, repeated samples are drawn with replacement from a given set of observations to produce samples that are the same size as the given set of observations. The process is repeated a large number of times (e.g., thousands) to ensure adequate accuracy.

Among the different variations of the bootstrap procedures method, the bias-corrected and accelerated (BCa) percentile method is generally considered to be the most robust and reliable for calculating confidence intervals when the underlying distribution of the data is unknown or difficult to verify (Efron and Tibshirani 1998). For this reason, the BCa method will be used for calculating the 95% UCLs for each ½-acre area. In addition, GM will provide the results of 95% UCL calculations using the "simple" bootstrap percentile method at U.S. EPA's request.

If the 95% UCL on the mean is at or below 1.8 mg/kg, the area meets the cleanup criterion and will be backfilled and re-vegetated. If the 95% UCL exceeds 1.8 mg/kg, additional excavation and re-sampling will be performed at the grid(s) with the highest PCB concentration(s) as necessary to achieve a 95% UCL of 1.8 mg/kg. Sample

collection procedures outlined in the SAP (Appendix C) will be followed. Quality Assurance/Quality Control (QAQC) procedures will be followed for all soil sample analysis as outlined in the QAPP. All laboratory analytical results will be validated in accordance with the QAPP; however, preliminary data will be used to evaluate verification samples. Any sample location with analytical results determined to be unusable during data validation will be re-sampled and analyzed, and the 95% UCL will be recalculated using the new data.

3.7.5 SOIL REMOVAL FOR INDUSTRIAL PARCELS

The procedure for removing stream bank soil on the industrial parcels involves the following steps:

1) Excavate soil from locations where existing site characterization data show PCBs at concentrations exceeding 5.3 mg/kg. Excavation will be conducted to the extent appropriate to achieve a concentration of 5.3 mg/kg based on individual post-excavation composite samples, or to a maximum depth of 2 feet and maximum of 25 feet from the stream channel.
2) In areas where the excavation depth is less than 2 feet or the excavation width is less than 25 feet from the stream channel, 5-point composite samples will be collected from the top 4" of the ground surface at approximate 10-foot spacing along 50-foot segments. If the concentration of a composite sample exceeds 5.3 mg/kg and the maximum depth and width limits have not been reached within the segment represented by the composite sample, additional soil removal and re-sampling will be conducted for that segment.
3) Excavated areas shall be graded such that no material exceeding 5.3 mg/kg is within 2feet of the final ground surface elevation and no material exceeding 1.8 mg/kg is within 1 foot of the final ground surface elevation. A double row of silt fence will be placed on the uphill side of the covered areas. Each silt fence row will be keyed into the soil a minimum of 6 inches.
4) Soil remaining within 25-feet of the center of the stream channel above 1.8 mg/kg PCBs will be covered with 1-foot of clean soil and re-vegetated. A double row of silt fence will be placed on the uphill side of the covered areas. Each silt fence row will be keyed into the soil a minimum of 6 inches.

Sample collection procedures outlined in the SAP (Appendix C) will be followed. Quality Assurance/Quality Control (QAQC) procedures will be followed for all sample

analysis as outlined in the QAPP. All laboratory analytical results will be validated in accordance with the QAPP.

3.7.6 BACKFILLING/FINAL GRADING

Excavations will be backfilled with clean fill from an off-Site source consistent with the restoration plan for the Upstream Parcels as discussed in Section 3.8.6. Fill material will be characterized prior to importation to ensure it is acceptable, based on PCB analysis. Fill material will be placed in excavations to below the pre-existing grade and compacted using appropriate compaction equipment as directed by CRA's representative. The remaining thickness will be backfilled with topsoil. The final grading will be constructed during completion of the RA to be consistent with pre-existing grades and to match the existing grades outside the limits of excavations and promote appropriate surface water drainage. Following completion of backfilling activities, the disturbed areas will be restored with vegetation. Appropriate erosion controls will be utilized until the vegetation has been established to provide erosion control.

Once an excavation area has been determined to meet the cleanup goal, the excavation will be backfilled as soon as is practical. Following backfilling, restoration activities for that area will be completed as soon as practical utilizing native species. However, some restoration activities, such as tree planting and some re-seeding may need to be completed in the appropriate season (to promote/allow growth).

3.8 CREEK SEDIMENT REMOVAL AND HANDLING

Coincident with soil excavation as presented in Section 3.7, creek sediments will be removed. Creek sediment removal includes, as necessary to meet the 1 mg/kg PCB cleanup criteria, removal of creek bank soils located horizontally within 2 feet of these creek banks and vertically from ground surface down to the depth of sediment removed. The creek flow will be temporarily diverted around the work zone. It is anticipated that the length of the diversion will typically be 50 ft to 100 ft, although the contractor may elect to utilize longer diversions up to 500 feet. Once the creek flow diversion has been implemented, sediments will be removed as discussed below.

3.8.1 SEQUENCE

Creek sediments will be removed within a work zone after the impacted soil excavation is completed.

3.8.2 CREEK FLOW DIVERSION

A hydrologic model has been developed by CRA for the Bailey's Branch Creek. This model has been utilized to determine creek diversion options for the areas requiring excavation. Section 4 presents a summary of the storm water model for Bailey's Branch Creek.

The modeling identifies that for the purposes of evaluating creek diversion options, the Watershed can be generally divided into two types of areas. The area of Pleasant Run upstream of Peerless Road, including Bailey's Branch and other tributaries are areas with no associated floodplain, or very limited floodplain area. The relevant creek diversion alternatives for the Upstream Parcels are discussed below.

The storm water model developed for the Site will be utilized to determine flows for bypass pipe sizing and to design temporary or permanent creek bypass channels. Within the upper reaches of Bailey's Branch and along other tributaries insufficient floodway width, and the presence of bedrock at or near the ground surface, make the re-channelization of the creek in these areas impractical.

The creek would be divided into manageable sections and the flow diverted around each section, moving upstream to downstream. Diversion would be completed either by bypass pumping, or gravity diversion piping. Under either of these methods, the upstream and downstream ends of the area to be cleaned up would be isolated by temporary berms across the creek. The creek flow will pond on the upstream side of the upstream dam where an inlet to the diversion pipe or pump intake would be placed. The flow would then be diverted around the active work area and re-introduced to the creek downstream of the second diversion berm. The second diversion berm is constructed to prevent backflow into the work area and contain any potential releases from the work area.

Creek excavation and restoration activities in areas being diverted by this method would be completed in a manner that would allow the flow from significant storms to bypass the work areas without causing mobilization of impacted materials from the work area.

This is accomplished by ensuring restoration of disturbed areas to protect the creek channel on a daily basis.

3.8.3 REMOVAL METHODS

Sediment will be removed from the dry creek bed using small earth moving equipment or by manual labor.

3.8.4 SEDIMENT HANDLING

Sediment handling will be kept to a minimum to minimize potential fugitive emissions. Whenever possible, the contractor will place removed sediment directly into transportation units to minimize fugitive emissions and multiple handling. Due to limited access and the topography along the creek, it will be necessary to utilize small equipment to remove PCB impacted sediment to the support facility locations where the sediment can be loaded into standard size transport units. Care will be taken when transporting sediment from the active work zones to prevent soil tracking.

3.8.5 VERIFICATION

For verification that cleanup criteria have been met in the creek channel, each 100-foot section of creek in which material removal is completed will be evaluated as follows:

1) Creek Bed Verification Sampling - A 5-point composite sample will be collected consisting of sediment samples at approximate 20-foot spacing from the creek bed. In the event that insufficient remaining deposits of sediment are present in the creek bed to collect a 5-point composite, the number of sample points may be reduced accordingly. In the event the entire creek bed within the 100-foot section consists of bedrock without sediment deposits, the creek in that 100-foot section will not require verification.
2) Creek Bank Verification Sampling - A 5-point composite sample will be collected from each side of the creek bank consisting of soil samples at approximate 10-foot spacing along 50-foot lengths. Alternatively, the creek bank soil may be removed to a distance of 2 feet horizontally from the creek bank, to the depth of the creek excavation without the need for verification sampling.
3) The results of each composite sample will be compared directly to the cleanup criteria for the creek (1 mg/kg PCBs).

Additional material removal and re-sampling will be completed if the cleanup criteria is exceeded in a composite sample.

Sample collection procedures outlined in the SAP (Appendix C) will be followed. QAQC procedures will be followed for all sample analysis as outlined in the QAPP. All laboratory analytical results will be validated in accordance with the QAPP.

3.8.6 RESTORATION

A Restoration Plan, which will include mitigation plans, if required, will be developed as part of the detailed design phase of the project. Wetland and habitat evaluations were completed in the Watershed which identified that regulated wetlands do not exist in the Upstream Parcels, with the exception of a small area in the area north of AOI 4. The Restoration Plan will also consider the post cleanup use of each area of the Watershed.

The Restoration Plan will be prepared to support requirements from United States Army Corp of Engineers (U.S. ACE), IDEM, and Indiana Department of Natural Resources (IDNR) for work in floodways and the creek channel, and wetlands.

The Restoration Plan may include any, or all, of the following components, as appropriate, based on Site-specific delineation:

- re-vegetation in upland areas with native plant species to the extent possible, after review with the Parcel owner; and
- habitat improvements in on-Site locations.

3.9 TRANSPORTATION AND STAGING

This section describes the procedures to be employed during the RA to ensure compliance with appropriate federal, state, and local regulations for any material that is removed, transported, and staged. Procedures outlined in the Site WMP (Appendix D) will be followed for the transportation, staging, and disposal of materials from the Upstream Parcels.

A material tracking form will be used to track the movement of each load of excavated material after it leaves the support facility(s) for the Upstream Parcels. Transport vehicles appropriately licensed to transport designated materials will be utilized to transport material over public roads. Records will be kept at both the excavation and the staging area or disposal facility to ensure all loads arrive at the correct destination.

During the transportation activities over public roads, the contractor will ensure that the transportation is conducted in compliance with federal, state, and local regulation concerning shipping materials, including the following:

- that the number for each transport vehicle/container is displayed visibly;
- that the received box of the transport vehicle/container is clean of loose debris or foreign material prior to loading;
- for vehicles transporting PCB impacted material the receiving box or container will be lined with a minimum of one layer of 6-mil polyethylene sheeting continuous along the bottom and sides. The liner shall be placed on the floor, run up the sides, and draped over the sideboards. The liner will be neatly pushed into the corners to prevent tearing during loading and transport. If the contractor can demonstrate that the receiving box is of leakproof construction, an impermeable cover is placed over the container, and that the receiving box or container is made of materials which can be decontaminated, then the lining requirements can be waived;
- that the materials are loaded in a manner which will not damage the properly placed polyethylene liner; and
- following loading, the liner will be folded over the loaded materials prior to securing with an approved tarpaulin in a manner to prevent loss of materials or fugitive dust emissions.

Flag persons shall be employed as necessary to ensure safe entrance to and exit from public roadways.

Prior to leaving the Site, each transport vehicle that has entered the exclusion zone will be decontaminated. The decontamination will be conducted to remove all material on the tires and axles and material on the vehicle resulting from loading operations. Transportation vehicles will also be decontaminated following off-loading at the consolidation area.

Material removed from the Site will be transported directly to the consolidation area with out change to either the route or mode of transportation. The transportation will be

conducted to comply with the requirements outlined in the WMP. Transport vehicles will be marked and placarded in accordance with applicable regulations as outlined in the WMP.

The contractor will prepare daily reports summarizing all materials transported from the Upstream Parcels to the consolidation areas including total volume of material transported, and descriptions of the materials transported with material tracking forms. Notification of receipt of material will be conducted through signed material tracking forms. Any material transported off-Site for disposal will be manifested, as appropriate, and the signed manifests tracked.

3.10 FUGITIVE AIR EMISSIONS MONITORING

The contractor will be required to monitor for fugitive air emissions from soil excavation, handling, and backfilling operations as well as operations at the Consolidation Areas. Air monitoring at the work zone boundary locations will be monitored in accordance with Section 12.0 of the HASP. If the perimeter monitoring of Total Suspended Particulates (TSP) concentrations, identified in Section 2.0 of the AAQMP presented in Appendix E, are exceeded at the consolidation area boundaries or the work zone boundary locations for the Upstream Parcels, particulate control measures will be implemented. The TSP criteria is 67 percent in excess of the upwind ambient TSP air concentration. Control measures may include:

- minimizing work areas;
- reducing levels or types of activity at the Site until the weather becomes more suitable; and
- spraying areas with paper mulch, foam, and/or water for odors and/or dust control.

The contractor will conduct boundary monitoring at the EZ and support facility locations and the Consolidation Area to establish a baseline (i.e., background) to evaluate the impacts of Site activities on air quality prior to initiating RA activities. The baseline monitoring shall be conducted before initiating excavation activities on a regular basis for a minimum of 3 days.

3.11 AMBIENT AIR QUALITY MONITORING

CRA will undertake a perimeter air-monitoring program to evaluate potential public exposure to fugitive air emissions resulting from the RA at the Upstream Parcels. The perimeter air monitoring program is in addition to air monitoring for contractor health and safety, including personnel air monitoring, being conducted by the contractor as described in Section 3.10.

Perimeter air monitoring will consist of TSP and PCBs as outlined in the AAQMP presented in Appendix E. TSP sampling will be completed using U.S. EPA's Reference Method for Determination of Suspended Particulate Matter in the Atmosphere (High-Volume Method) (40 CFR Part 50 Appendix B).

PCB sampling will be completed utilizing U.S. EPA Method TO-4A [Compendium Method TO-4A Determination of Pesticides and Polychlorinated Biphenyls in Ambient Air Using High-Volume Polyurethane Foam (PUF) Sampling Followed by Gas Chromatographic / Multi-Detector Detection (GC / MD), January 1999]. Both the filter and PUF will be analyzed for PCBs. Action levels to determine when mitigation measures are necessary are provided in Sections 2.4 and 3.4 of the AAQMP.

3.12 WATER MANAGEMENT DURING CONSTRUCTION

The contractor will provide an on-Site surface water runoff collection and on-Site storage system for the following:

i) surface water and / or stormwater contacting disturbed work areas;

ii) water collected from construction dewatering;

iii) groundwater entering excavation areas;

iv) surface water collected from the temporary soil stockpile facility; and

v) wastewater from the personnel and equipment decontamination facilities.

Dense non-aqueous phase liquid (DNAPL) and light non-aqueous phase liquid (LNAPL) are not anticipated to be present in water collected from the above mentioned sources. However, as a precaution, all collected water may be pumped through an oil / water separator prior to transportation to the GM Powertrain wastewater treatment facility or approved off-Site facility. If DNAPL or LNAPL is encountered it will be placed into a tank for temporary storage. Once a sufficient volume of water has been collected and characterized, as required by the Facility NPDES permit, the water will be

transported for disposal in the GM Powertrain wastewater treatment facility or at an approved off-Site facility. All transport, storage, and disposal methods outlined in the WMP will be followed for collected DNAPL and LNAPL, in the unlikely event any is collected.