Addendum To RCRA Facility Investigation Work Plan
C&D Technologies
200 Main Street
Attica, Indiana
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C&D Technologies (C&D) has retained URS Corporation (URS) to develop and implement environmental investigative programs for C&D's Attica Indiana Facility located at 200 West Main Street, Attica, Fountain County, Indiana (the Site or Facility). This Addendum to the RFI Work Plan submitted to EPA on September 25, 2007 describes the proposed changes and comments suggested by EPA Region 5 in a meeting held at C&D Technologies Attica, Indiana facility on October 18, 2007 and comments submitted to Bhooma Sunda (U.S. EPA Region 5, Project Manager) on October 18, 2007 from Brian P. Freeman (U.S. EPA Region 5) on C&D Technologies RFI QAPP Revision 1 Submittal 9/25/07. C&D and URS responses to EPA comments and suggestions are listed below.

1) Response to EPA question on why C&D did not propose to sample the area of a diesel spill identified as Spill #3 in CCR.

EPA had concern that a March 3, 1983 spill #3 (approximately 10 to 30-gallons of diesel fuel) mentioned in the Current Conditions Report (CCR) on page 19 had not been accounted for in the RFI Plan. EPA interpreted from the CCR that the spill #3 occurred in the southwest expander mill warehouse truck dock area and was not covered in the RFI Plan. However, based upon subsequent review of the spill incident, including reviewing historical photographs and the description of the affected storm drain near outfall (003), C&D believes that the spill occurred on the northeast side of the property at the old Grid Warehouse Truck Dock Bay #2 as opposed to the southwest expander mill. According to Figure 5 (Expansion Map) of the CCR, the truck dock was demolished in 1998 when the existing small parts casting building was constructed over the area during Phase I of the C&D facility expansion. It would be very difficult to find the exact location of the spill in the existing building; however, any remaining impact from the 1983 spill should

be detected by soil samples CD-SB-17 and CD-SB-18 near Outfall 003, which C&D has already identified in the RFI Work Plan. Therefore, no additional modification to the existing plan is proposed.

2) Soil Borings/Sample Grouping

EPA suggested that C&D group together several sets of soil borings/samples and several of the Areas that are presented on Figure 2-2 that are in close proximity of each other. C&D is proposing the following grouping of Areas for data review and statistical evaluation:

A) Areas 1, 4, 6, and 8

B) Areas 5 and 11

C) Areas 2 and 3

D) Areas 9, 12 and 16

E) Areas 10, 12, and 13

F) Area 15

Area 7

In addition, certain soil borings/samples have been co-located as appropriate, based on these groupings. These groupings of Areas are shown on revised Figure 2-2.

3) Revised Figures 2-2 and 4-1

C&D has attached revised versions of Figures 2-2 and 4-1. These revisions include the grouping of Areas, soil borings and samples; a clearly marked boundary for Area 16; additional 3 (for a total of 7 new) monitoring wells on the west-southwest side of the facility, and the AOC locations have been marked more clearly.

4) Background Sampling

C&D is proposing to collect background soil samples from 7 locations approximately two miles northeast of the facility from an undeveloped area that is used for agriculture. The general soil type (Battleground silt loam) and geology (riverbank/floodplain) appears to be similar to that encountered at C&D. The soil samples will be collected at depth intervals of 0 to 1 ft and 4 to 5 ft.

Based on C&D/URS experience of wind blown particulates from the indoor battery manufacturing process, it is highly unlikely that lead oxide would ever be emitted into the upper atmosphere and transported a distance of two miles from the site. The lead oxide used in the facility is transferred into storage silos that are located inside the facility and not exposed to outdoor air. C&D has a policy that requires the lead oxide delivery truck to drive inside the facility and wait until the hanger door is closed before connecting to the lead oxide silos and transferring the lead oxide. Any resulting air from the lead oxide processes goes through baghouses prior to being emitted and very unlikely to reach the upper atmosphere. Therefore, the amount of lead oxide that has a chance to become airborne is limited.

A C&D employee is the owner of the property where the proposed background soil borings are located. The owner has granted C&D/URS permission to collect background samples from this location. Futhermore, according to the owners, the proposed location has historically only been used for agricultural purposes.

C&D/URS looked into collecting samples from several prevailing up-wind (southwest) locations of the facility, but the locations evaluated within a several mile radius have been exposed to historical manufacturing operations and were not satisfactory for collecting background data.

5) Off-Site Soil Sampling

C&D is proposing to collect 7 surface soil samples from 0 to 1 ft depth in various areas along C&D's Ice House property area and adjacent areas of the City of Attica's property on the northeastern and northwestern side of the facility. C&D chose these sample locations based on the prevailing wind direction from the southwest (USDA, 2003). C&D is proposing to analyze the soil samples for Appendix IX Metals. The locations of the proposed soil borings/samples are shown on the attached Figure 4-2.

C&D is also proposing to collect 5 soil samples at a depth interval of 0 to 1 ft depth in various areas between the toe of the landfill (Area 8) and the Wabash River on the river bank (River Bank Samples). The locations of the proposed soil borings/samples are shown on the attached Figure 4-1.

6) Addition of EPA Appendix IX Analyses

Appendix IX analyses for total metals, volatiles, and semi-volatiles have been added to approximately 25% of soil samples. Additionally, C&D will analyze approximately 35% of soil samples for pH. pH will be also performed on-site for each of the existing and new monitoring wells.

7) Monitoring Wells

C&D is proposing to install 4 shallow groundwater monitoring wells adjacent to the existing deeper monitoring wells. (The adjacent shallow wells will be installed next to MW-1, MW-2, MW-3, and MW-4. An adjacent shallow well is not proposed at MW-5). C&D is also proposing to install 3 additional shallow groundwater monitoring wells along the western side of the property in Areas 8 and 15. These proposed monitoring well locations are shown in the attached Figure 4-1. Upon completion of the RI activities, the monitoring well network will consist of the 5 existing deeper wells and 7 new shallow wells (approximately 40 to 50 feet).

The following equipment will be used for monitoring well installation:

- Hollow stem auger (HSA) drill rig equipped with 4 ¼ - inch augers, stainless-steel split spoon, and associated drill tooling.
- Submersible pump (Whaler ® or similar) for monitoring well development.
- Well construction materials – 2-inch diameter, flush-jointed, PVC (NSF Standard 14) well casing and well screen, filter sand, bentonite chips, Portland cement grout mixture, and concrete for well pad.
- Potable water.

Upon reaching the terminating depth (to be determined by field observation and onsite geologist), soil borings will be converted to 2-inch monitoring wells. The monitoring

wells will be constructed as follows according to the *RCRA Groundwater Monitoring: Technical Guidance Document*:

- A minimum of 0.5 feet of filter sand will be placed in bottom of borehole for footing of the well casing.
- The screened interval will be placed in the well first. The length of well screen will be long enough to effectively monitor the desired depth interval and will be, at a minimum, 5 feet in length.
- Sufficient well casing will be added to the screened interval to bring the monitoring well to ground surface.
- Filter material will be placed around the well screen up to approximately two feet above the top of screened interval. The filter material will be added either by tremie pipe or poured. During installation, the augers will be slowly retracted to prevent potential bridging problems with the filter material.
- A bentonite pellet seal will be placed over the filter pack to minimum thickness of two feet above the top of filter pack or desired depth. The seal will be hydrated with potable water and allowed to set eight hours or the manufacturer's recommended hydration time, whichever is longer.
- The annular space above the bentonite seal will backfilled from bottom to top using a tremie pipe with cement grout/bentonite slurry to within two feet of ground surface via tremie pipe. The cement grout/bentonite slurry will be allowed to set for 24 hours prior to well completion.
- The surface will be completed with a two-foot by two-foot wide by four-inch thick concrete pad with a secure well vault. The concrete pad will be sloped away from the well vault to avoid water accumulation within the well vault. A locking well cap will be used to seal the well casing.
- The well may also be completed as a stick-up well in which a metal riser encasing the well casing will be extended to two to three feet above ground surface. The metal casing will be locked and four metal protective bumper posts (bollards) will be installed at each corner of the concrete well pad. The base of the bollards will be set at a depth of 2 ft bgs and anchored with concrete. Upon completion, the bollards and metal well casing will be painted with yellow hazard paint.

Each monitoring well will be developed to create an effective filter pack around the well screen using a submersible pump (Whaler, Monsoon, or similar) and proper surging techniques. During development, the submersible pump will be raised and lowered throughout the screened interval to ensure that all sediments and fines have been removed to the extent possible. Development will be considered complete when the desired turbidity level is reach and field parameters (pH, specific conductance, temperature, and dissolved oxygen) have stabilized.

Groundwater samples will be collected from the 5 existing monitoring wells and the 7 new shallow wells (see Figure 4-1). Groundwater samples will be collected using a stainless steel bladder pump equipped with a disposable polyethylene bladder and disposable polyethylene tubing. Prior to sample collection, static groundwater elevations will be recorded at each onsite monitoring well for potentiometric purposes using an electronic water level indicator.

Groundwater samples will be collected using low-flow (minimum drawdown) sample collection techniques. The bladder pump will be positioned in the middle of the screened interval. Purge rates will be set between 100 and 500 mL/min to minimize drawdown. The water level elevation will be monitored during purging to ensure water table drawdown does not exceed 0.5 ft. Water quality parameters will be monitored during purging using a water quality meter equipped with a flow-through cell. Groundwater samples will be collected once water quality parameters have stabilized (± 0.1 pH, ± 3% for conductivity, ± 10% mV for redox potential, and ± 10% for turbidity and dissolved oxygen).

Upon stabilization, the monitoring well discharge line will be disconnected from the flow-though cell and groundwater samples will be transferred to the appropriate laboratory provided sample container.

Water samples will be preserved as follows:

- VOC analyses will be collected in three VOA vials without headspace, preserved with HCl, and shipped cooled under ice to 4.0 +/-2.0 deg. C.
- Samples for Total Metals will be collected in 500 ml. plastic bottles preserved with HNO3 to pH <2.0.
- Samples for dissolved metals will be pumped through an in-line 0.8 um filter (not supplied by the lab) and the filtrate will be collected in a 500 ml. plastic bottle and preserved with HNO3.

Further details with the installing, developing and sampling of monitoring wells can be found in the RFI Work Plan's Field Sampling and Analyses Plan (pages 1-7 through 1-14) and the RFI Quality Assurance Project Plan (QAPP) pages 4-1 through 4-4.

8) RFI Work Plan Tables 4-1 and 4-2

C&D has attached revised versions of Tables 4-1 and 4-2. Table 4-1, RFI Analytical Parameters for Soil Samples, has been revised to reflect the grouping of samples mentioned above, the addition of Appendix IX analyses, addition of PCBs analyses in Areas 1, 8, 9 and 15, addition of pH analyses and off-site soil samples. Table 4-2, RFI Analytical Parameters for Groundwater Sampling, has been revised to include the 3 additional shallow wells on the southwest side of the facility and the addition of performing Appendix IX analyses (for VOCs, SVOCs and total metals) and dissolved lead on the 12 monitoring wells (5 existing wells and 7 proposed wells).

9) QAPP Comments

Human health risk-based screening tables for soil have been revised to show the Appendix IX analyses, and the human health risk-based screening levels for soil samples were changed from EPA Region IX Preliminary Remediation Goals (PRGs) to IDEM Residential Default Closure Levels. For the ecological risk screening evaluation, soil ecological screening values (ESVs) will be compiled from the following sources in order of priority, as available:

- Lowest of the ecological soil screening levels (EcoSSLs) for the protection of plants and invertebrates (U.S.EPA 2007)
- U.S.EPA Region 5 Ecological Screening Levels
- NOAELS from another U.S.EPA Region
- Lowest of the ORNL soil screening benchmarks for plants and soil invertebrates (Efroymson et al. 1997a, b)

NOAELS from other sources (references will be provided)

Ground Water Screening Levels (Table 3.1) have been revised to show the Appendix IX analyses, and the human health screening levels for ground water were changed from EPA Region IX to IDEM Residential DCL screening levels.

To evaluation potential ecological exposures in the Wabash River via migration of groundwater, surface water ESVs will be used as surrogate values and applied to groundwater in wells located adjacent to the river. The preferred source of screening values for groundwater will be USEPA Region 5 Ecological Screening Levels).

C&D has proposed more sampling in Areas 1, 4, 8, and 13 due to the nature of the processes (i.e., Area 13 former oxide mill) that were being and are currently (i.e., Area 1 Wastewater Pretreatment Plant) being performed in these areas and also that documented releases have occurred in these areas. Additionally, C&D is installing seven new monitoring wells along with five existing monitoring wells to study groundwater conditions at the facility. There is no surface water at the facility being sampled except for storm water which is already being sampled on each qualifying event.

C&D will use the approved U.S. EPA Method 5035A (SW-846 3rd Edition, July 2002) and as well as IDEM's "Supplemental Guidance for the Use of Method 5035A" for sampling and collecting VOC in soils. The Terra Core sampler is included in the method and C&D intends to immediately preserve all VOC samples in the field.

C&D, as stated above, is collecting soil samples in all Areas and at least one soil boring set of samples from each Area will be analyzed for Appendix IX (VOCs, SVOCs, and metals) analytes. PCBs will also be analyzed in Areas 15, 11, and 9. Since C&D is a battery plant and does not perform micro circuit production, the majority of the metals used in battery manufacturing are covered by the RCRA metals. As stated, C&D is performing at least one Appendix IX metals analyses in every area and in some areas more than one Appendix IX analysis.

C&D assumes that EPA has assigned Brian P. Freeman as the U.S. EPA QA Person and C&D will send a double-blind PE sample to Test America, North Canton as requested by EPA.

C&D will add the Qualifiers D, B and E to procedures for laboratory data validation to the data review and change in the QAPP document the reference to Waste Pesticides and Toxics division to Remediation and Reuse Branch, Land and Chemical Division.

10) Human Health and Ecological Risk Evaluation

Section 3.3.2 has been changed to reflect that the ecological risk evaluation will be conducted in general accordance with the 8-step process outlined in Ecological Risk Assessment Guidance for Superfund (EPA 1997). A figure has also been added depicting the 8-step process. The table in Section 3.3.2 outlining selection of screening values has been changed consistent with EPA recommendations. In addition, the assessment "Viability and Function of the Benthic Invertebrate Community" has been added to the text. The table in Section 3.3.2 incorporates use of groundwater to screen this endpoint; the relevant pathway is groundwater transport to porewater of the sediments.

Ecological and Human Health Conceptual Exposure Models (Figures 3-3, 3-4, and 3-6, as appropriate) have been changed to present pathways of windblown particulate deposition to surface soils, and subsequent exposures to surface soils. In addition, a complete pathway from groundwater to sediments of the river has been added.