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REVISED WORK PLAN FOR ENVIRONMENTAL RESPONSE ACTIVITIES

407-09 Vernon Avenue and 5018 Alexander Avenue East Chicago, Indiana

Prepared For:

City of East Chicago, Indiana
Redevelopment Department
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REVISED WORK PLAN FOR ENVIRONMENTAL RESPONSE ACTIVITIES
407-09 VERNON AVE. AND 5018 ALEXANDER AVE.
EAST CHICAGO, INDIANA

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1.0 INTRODUCTION

The City of East Chicago has retained Weaver Boos Consultants North Central, LLC to prepare this Revised Work Plan for properties located at 407-09 Vernon Avenue and 5018 Alexander Avenue in East Chicago, Indiana. This Revised Work Plan is being submitted in response to the United States Environmental Protection Agency (USEPA) correspondence dated July 29, 2010 that conditionally approved the previous Work Plan dated July 9, 2010. USEPA comments have been incorporated into the Revised Work Plan in accordance with the USEPA July 29, 2010 correspondence. This August 12, 2010 Revised Work Plan is intended to supersede the previous July 9, 2010 Work Plan.

This Revised Work Plan has been prepared in accordance with Superfund Lead-Contaminated Residential Sites Handbook, dated August 2003 issued by the United States Environmental Protection Agency (USEPA). Referenced procedures were developed to provide defensible and quality data are collected and reported. These quality assurance procedures are included within a Quality Assurance Project Plan (QAPP) attached as **Appendix A**. Applicable staff working on this project will also have appropriate health and safety training as specified in OSHA, 29 CFR 1910.120. The health and safety requirements applicable to this project are included in a Health and Safety Plan (HASP) attached as **Appendix B**. The Scope of Work will be conducted upon USEPA approval of this Work Plan in accordance with the schedule presented herein.

1.1. Background

The City of East Chicago, Indiana (the City) is located along the south shore of Lake Michigan in Northwest Indiana and is part of the greater Chicago metropolitan area. The city has a total area of 15.6 square miles. On April 8, 2009 the USEPA placed an area of the City on the National Priorities List (NPL). The area is comprised of approximately 240 acres and is bounded by Chicago Ave. on the north, Parish Ave. on the east, 149th and 151st St. on the south, and Aster Ave. on the west. The USEPA Region 5 Superfund Program began the remedial investigation of the site on June 26, 2009. USEPA must perform a remedial investigation (RI) and feasibility study (FS) before a Record of Decision (ROD) can be issued. The ROD will specify the actual remediation that will be undertaken at the Superfund site. Given the size and regulatory nature of a Superfund RI-FS, this process is anticipated to last a minimum of one to two years.

The City of East Chicago has planned to implement redevelopment work at the two subject properties, which are located within the area designated as a Superfund site. The work calls for, among other things, the rehabilitation and redevelopment of housing throughout the

neighborhood with primarily single-family development and townhomes near commercial blocks. The City has used various forms of U.S. Department of Housing and Urban Development (HUD) funding for this effort.

Before the City became aware of specific requirements related to the Superfund process, it targeted these two vacant lots in the Superfund area for redevelopment with modular single-family homes. In order to redevelop these lots, it is necessary to first excavate soils for a foundation. USEPA has indicated that it is willing to let the City proceed with redevelopment efforts in this area provided the City funds these efforts, follows proper USEPA protocols, and the USEPA approves the Work Plan.

Representatives from Weaver Boos, the City of East Chicago, and USEPA and their contractor Sullivan International Group, Inc. (Sullivan) convened a meeting on June 21, 2010 at the USEPA Region 5 offices in Chicago, Illinois to discuss remediation activities at the subject sites. In general, the meeting addressed the proposed characterization and profiling activities, remediation methodology, the confirmation sampling approach, and HASP requirements. As a result, the following proposed Work Plan has been developed in consultation with the USEPA representative.

1.2. Facility Description

The properties consist of two single family lots located at 407-09 Vernon Avenue and 5018 Alexander Avenue. Both are located in the residential neighborhood of Calumet. Soil excavation and construction of a foundation for a modular home has been previously initiated at 5018 Alexander. Although no work has started on 407-09 Vernon Avenue, the City has committed to purchasing the modular home for this site as well.

1.3. Project Overview

The proposed remediation activities were developed to address suspected lead impacts to the shallow fill material that are related to the Superfund site. Based on the June 21, 2010 meeting with the USEPA, these lead impacts are assumed to be limited to the upper 1-3 feet of fill material. The term fill material and shallow soil are used interchangeably in this Work Plan and QAPP. Remedial efforts will include removal of the approximate upper two feet of shallow soil present at each of the subject properties. The shallow fill material will be excavated using an appropriately sized backhoe. The backhoe will load fill material into haul trucks or roll off containers pending transportation to an appropriate offsite disposal facility. Upon removal,

confirmation samples will be collected from the underlying native soils. Weaver Boos will prepare a report summarizing the completed activities. The report will demonstrate that remediation activities have been conducted in accordance with a USEPA approved Work Plan.

The Work Plan has been subdivided into the following components:

- Lead Characterization;
- Waste Disposal Profiling Activities;
- Remediation Activities; and
- Schedule of Activities.

The following provides a summary of the remediation activities proposed for implementation to address lead concentrations exceeding the applicable USEPA residential soil clean up level of 400 mg/kg at the subject properties.

2.0 LEAD CHARACTERIZATION

Lead characterization will not be conducted at the subject properties in support of this remediation implementation. Lead characterization outlined below will be conducted at properties that the City seeks to develop in the future, which are located with in the USEPA designated Superfund Site area. The data gathered during these efforts will be used to assess the need for remediation and to refine the scope of remediation, if necessary. The following includes the proposed methodology for sampling shallow fill material.

2.1. Lead Characterization Activities

Soil characterization sampling will be implemented in accordance with the site characterization requirements for residential yards described in the Superfund Lead-Contaminated Residential Sites Handbook, dated August 2003.

Future lead characterization efforts will be dependent on the size of the properties. For residential lots with a surface area of less than 5,000 square feet, five point composite samples will be collected from the front yard, back yard, and side yard (if the size of the side yard is substantial). For residential lots with a surface area greater than 10,000 square feet, the property will be divided into four quadrants of roughly the same surface area and five point composite samples will be collected from each of the four quadrants, which would include a front yard, a back yard and two side yards. The probes will be advanced to depths of approximately 2 feet below ground surface and will be approximately equally spaced within the respective quadrants of the yard. Composite soil samples will consist of aliquots from the same approximate depth interval within each quadrant (i.e., ground surface- 6", 6"-12", 12"-18", 18"-24").

Based on the June 21, 2010 meeting, results will be compared to the USEPA residential soil clean up level of 400 mg/kg. If sample results are below this USEPA clean up level, it will be assumed that no excavation is necessary in that specific quadrant of the property (i.e., front yard, back yard, and/or side yards). In addition, the depth of excavation will be assessed based on these results in accordance with the USEPA guidance document. Should results exceed this USEPA clean up level, it will be assumed that the shallow fill material at this part of the property will be excavated for offsite disposal.

The sampling equipment, sampling methodology, decontamination, custody procedures, and analytical procedures for analysis of lead to be implemented during the lead characterization sampling activities are described in the QA Project Plan included in **Appendix A**.

3.0 WASTE PROFILING ACTIVITIES

3.1. Waste Profiling Activities

The following includes the proposed approach for conducting waste profiling activities at each of the subject properties. Concurrent with lead characterization activities, Weaver Boos will collect one composite sample from each property for purposes of waste profiling. The composite sample from each property will be comprised of aliquots from probes advanced during the lead characterization activities. A sample will be collected from one of the soil probes advanced at each quadrant from the entire depth of the probe. These four samples, one from each quadrant will be composited into one sample for waste profiling.

The samples will be submitted for laboratory analysis of various parameters as required by the disposal facility. Depending upon input from the disposal facility, at this time, it is assumed that the analysis will be comprised of total lead, the Toxicity Characteristic Leaching Procedure (TCLP) testing for the eight RCRA metals, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), flashpoint, paint filter, total phenol, reactive sulfide, reactive cyanide, and pH. The list of parameters may be modified based on future discussions with the disposal facility.

Results will be used to assess the disposal profile. If the sample results are below hazardous waste standards, then the fill material will be managed as non-hazardous waste. If the sample results are above hazardous waste standards (for lead), then additional waste profile samples will be collected in order to better define the extent of hazardous lead impacts. Upon receipt of analytical data, Weaver Boos will prepare the waste profile forms in support of securing approval for offsite disposal at an appropriate facility.

The sampling equipment, methodology, decontamination, custody procedures, and analytical procedures to be implemented during the waste profile sampling are described in the QA Project Plan included in **Appendix A**.

4.0 REMEDIATION ACTIVITIES

Remediation technologies will include use of a backhoe, haul trucks, and utility tools for excavation, transportation and offsite disposal. The following is a discussion concerning the feasibility and performance of this technology proposed for remedial action implementation.

4.1. Scope of Work

The scope and extent of the proposed remedial action for the subject properties (407 Vernon and 5108 Alexander) will include the removal of the top two feet of shallow soil present at each of the subject properties. Based on the area of the properties of approximately 10,000 square feet and an excavation depth of approximately two feet, then approximately 750 to 1,000 in place cubic yards of shallow fill material will be removed from the properties. Upon excavation, confirmation soil samples will be collected as discussed below.

4.2. Soil Excavation/Disposal

At this time, it is expected that the fill material will be characterized and transported/disposed as non-hazardous waste to the Laraway Recycling & Disposal Facility located in Elwood, Illinois. However, if the fill material exhibits characteristics of hazardous waste, measures may be undertaken in the field to stabilize material for purposes of rendering the material non-hazardous by reducing leachable metal concentrations to below the TCLP regulatory lead concentration of 5.0 mg/L.

Excavation and disposal activities will proceed in the following general manner for non-hazardous fill material:

1) Prior to excavation, access points will be assessed based on entry and exit feasibility of equipment and truck traffic.

2) Fill material will be excavated in the areas designated based on site characterization results. One backhoe will be used for the removal and loading efforts.

3) Excavation will be advanced to approximately two feet below ground surface or until the native underlying sand is encountered.

4) Excavated fill material will be loaded onto appropriately sized hauling trucks permitted to transport material as either non-hazardous or hazardous waste.

5) Upon reaching the desired depths, confirmation samples will be collected from the floor of the excavation as discussed below in **Section 4.3**.

6) If soil samples exhibit concentrations in excess of the USEPA clean up level of 400 mg/kg and the fill material has been excavated two to three feet, then the data will be reviewed further as discussed below in **Section 4.3**.

Prior to excavating hazardous fill material for loading, it will be treated in-place to render it non-hazardous (i.e., stabilize the soils) using the following methodology:

1) A fixation agent (Free Flow) will be imported to the site and unloaded directly onto the hazardous waste fill material.

2) Using a backhoe, the fill material will be mixed together with the fixation agent in an approximately three percent by weight ratio to the hazardous fill material.

3) Upon stabilization, confirmation samples will be collected from the in-situ soil and analyzed on a 24 hour turnaround time for TCLP lead to demonstrate that the fill material no longer exhibits hazardous waste characteristics.

4) This material would then be profiled as a treated non-hazardous Special Waste and will be transported to the Newton County Landfill located in Brook, Indiana, or to the Laraway facility mentioned above.

4.3. Confirmation Sampling Activities

Confirmation samples will be collected from the bottom of the excavation. Based upon discussions with USEPA during June 21, 2010 meeting, no sidewall samples will need to be collected at the property boundaries. Analytical results will be compared to the USEPA residential soil clean up level for lead. Excavation floor samples will be collected on a 40 by 40 foot grid pattern. Based on the area of excavation, it is expected that approximately seven floor samples will be collected from each property (a total of fourteen (14) floor samples). Confirmation soil samples will be collected for lead laboratory analysis pursuant to the field and analytical procedures specified in the QAPP in **Appendix A**. The confirmation samples will be containerized and analyzed in a consistent manner as discussed above for the waste characterization samples. Confirmation samples will be submitted for standard laboratory turnaround time.

Based on the June 21, 2010 meeting, data obtained from the confirmation samples will be compared to the USEPA residential soil clean up level for lead of 400 mg/kg. According to the USEPA July 29, 2010 correspondence, "*If confirmation samples are collected and are above 400 ppm. Additional excavation is not required as long as at least two feet of soil have been removed initially and at least two feet of clean backfill is added to the property. Additionally, if confirmation samples are above 400 ppm, EPA may require the installation of a visual barrier at the bottom of the excavation.*" Therefore, excavation will extend to at least two feet below existing grade regardless of the confirmation sample results. If necessary, the visual barrier will likely include a woven geotextile material that will be placed on the floor of the excavation.

4.4. Backfilling Activities

After the impacted fill materials have been removed from the properties, the developer will import clean fill to raise the finished grade up to level that will provide positive drainage and minimize ponding on the property. Should the developer import virgin stone to use as backfill, then no testing of the material would be necessary. Should the developer import soil from an offsite source, then the imported soil will be analyzed to confirm it meets the latest available version of USEPA's "Regional Screening Levels (RSL) for Chemical Contaminants at Superfund Sites", found at: http://www.epa.gov/region9/superfund/prg/. The laboratory analysis will include sampling for the eight RCRA metals, Volatile Organic Compounds, Semi-Volatile Organic Compounds, Polychlorinated Biphenyls, and Pesticides. No fill material will be accepted if concentrations of constituents of concern are identified above the applicable screening levels.

4.5. Report Preparation

Weaver Boos will prepare a Completion Report summarizing the completed activities. The Completion Report will include the information acquired during the field activities and will append significant documents (i.e., site plans, tables, laboratory data, etc.). The Completion Report will demonstrate that remediation activities have been conducted in accordance with this Work Plan. The Completion Report will be submitted to the USEPA and IDEM.

5.0 SCHEDULE OF ACTIVITIES

Based on the assumed volume of fill material, it is believed the excavation, loading, and transportation activities will be completed in approximately five days. Upon completion of remediation activities, the excavation will be backfilled with clean fill material. The Completion Report will be submitted for review by the City of East Chicago and USEPA approximately three to four weeks after completion of field activities.

FIGURES

APPENDIX A

QUALITY ASSURANCE PROJECT PLAN

APPENDIX B

HEALTH AND SAFETY PLAN