



Soil Sampling on Private Properties

Introduction

Soil surveys and sampling activities on private and commercial properties are being planned for the Pines Area of Investigation. This edition of Pines Update (#22) is dedicated to providing you with information on where we are in the investigation program, and to inform you of what these new field activities are and how they will be performed. We will need your help in getting formal agreements to access private property to conduct this work.

Background and Status of RI/FS Process

The Pines Area of Investigation is the subject of an environmental study under the Superfund Alternative Program administered by the USEPA Region 5. In the Area of Investigation, coal combustion by-products are present:

- Yard 520 is a closed Restricted Waste Facility permitted by the Indiana Department of Environmental Management (IDEM) where coal combustion by-products have been disposed. Yard 520 is located in the western portion of the Area of Investigation.
- Coal combustion by-products were used as road base and as fill material by the Town of Pines and property owners within the Area of Investigation both in rights-of-way and on private properties.

In 2004 and 2005, Brown Inc., Ddalt Corp., Bulk Transport Corp., and Northern Indiana Public Service Company (NIPSCO) (the Respondents) completed a project to extend Michigan City's municipal water service from Michigan City to designated areas in the Town of Pines.

In April 2004, the USEPA and the Respondents signed an Administrative Order on Consent (AOC II) to conduct a Remedial Investigation and Feasibility Study (RI/FS) at the Area of Investigation. The purpose of the work was to investigate the extent of coal combustion by-products and the constituents related to coal combustion by-products. The RI was conducted between 2004 and 2007 and the results are summarized in the approved RI Report. The Human Health Risk

Assessment (HHRA) and the Ecological Risk Assessment (ERA) evaluated both chemical and radiological risks associated with constituents derived from coal combustion by-products at the Area of Investigation. The HHRA and ERA have been approved by the USEPA, and are available on the agency's website (www.epa.gov/region5/cleanup/pines). [See also Pines Update #21.]

The Respondents are in the process of completing the Feasibility Study (FS). In the FS, the results of the RI and Risk Assessments are interpreted, and potential further actions are identified and evaluated. The Draft FS was provided to USEPA in phases in 2012 and 2013 according to AOC II.

The Draft FS includes a conceptual approach for additional sampling to be conducted on selected properties. Although USEPA has not yet provided comments on the Draft FS, the USEPA did provide feedback to the Respondents on the scope of the additional sampling. Based on that feedback, a Supplemental Soils Characterization Work Plan for the Pines Area of Investigation has been developed and provides the detailed soil sampling plan. The plan has been submitted to USEPA for review and approval. This Pines Update describes the additional sampling planned.

Purpose of Soil Sampling

The objective of the proposed soil sampling is to verify the residential exposure scenario results presented in the approved HHRA. To meet this objective, three data collection tasks will be conducted:

1. Sampling to verify the results of the coal combustion by-products visual inspection program conducted as part of

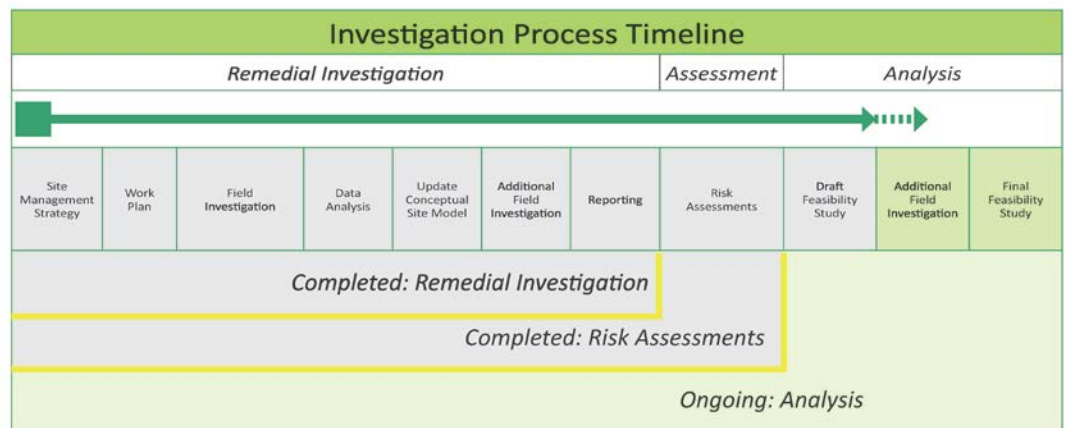


Figure 1: RI/FS Process

the RI (refer to Pines Update #17);

2. Radiological (gamma) surveys of background areas and properties within the Area of Investigation; and,
3. Sampling of surface and subsurface soils at selected properties located within the Area of Investigation.

A stepwise approach to conducting these tasks has been developed with USEPA, and is described in this Update.

Access Agreements

Most of the land within the Area of Investigation is not owned by or under the control of the Respondents. Where feasible, sample locations will be selected within public rights-of-way; however, access agreements will be needed between the Respondents and individual property owners to perform the majority of the additional field investigation. Access agreements, when signed, give permission to environmental technicians from AECOM, the Respondents, and the USEPA (and their contractors) to enter the property to conduct the soil studies. If access is granted, AECOM will contact property owners prior to beginning work on their property.

Properties to be Evaluated

Soil survey and/or soil sampling activities are currently planned at the following properties (see Figure 2):

- Ten properties selected to be representative of background soil sampling conditions (e.g., geology, proximity to roads) in order to approximate conditions at the properties identified during the coal combustion by-product visual inspections.
- Forty-five properties previously identified as containing coal combustion by-products during the visual inspections.
- Thirteen properties included as part of the October 2009 Gamma Count Rate Survey provided by the P.I.N.E.S. Group. The properties selected from this survey are those within the boundary of the Area of Investigation and those that are not already included within the 45 properties referenced above. These properties are being included at the request of USEPA in response to a community request.

Sampling Process

Step 1: Preliminary Assessment

A Preliminary Assessment will be conducted on all of the “Properties to be Evaluated” referenced above where access is granted by the property owner to identify potential issues or features that may affect performing the gamma surveys and sampling, such as tree cover and the layout of structures and open ground. In addition, features that may support the selection of soil sample locations (i.e., play areas, gardens, driveway composition) will be identified.

Step 2: Coal Combustion By-product Visual Inspection Verification

A total of 15 soil samples will be collected from locations where coal combustion by-product visual inspections were previously completed. During these visual inspections, the estimated coal combustion by-product content of each sample was recorded. Samples will be collected and submitted to a laboratory for particulate matter analysis in order to confirm the percentages estimated during the visual inspections. This sampling will be conducted generally at the same time as the preliminary assessment phase, as described in Step 1 above.

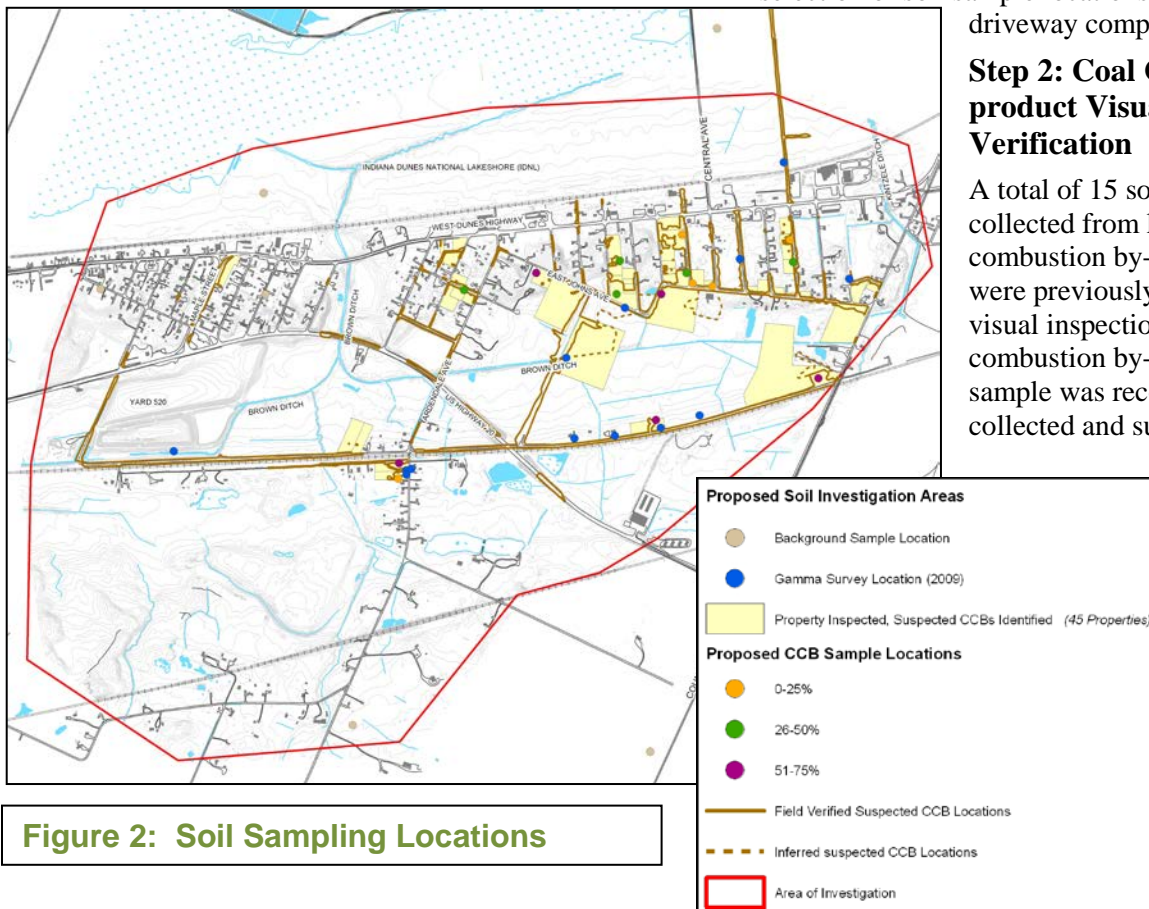


Figure 2: Soil Sampling Locations

Step 3: Gamma Surveys

Two types of gamma surveys will be conducted: a sodium iodide (NaI) gamma walk-over survey and a gamma dose rate survey. Data for both types of surveys will be collected using devices mounted to a rugged carriage similar to a baby stroller that will be manually pushed by the technicians. The devices will collect data while the carriage is rolled over the ground surface similar to a lawn and garden spreader. In some areas, the devices may be hand-carried. The objective of these gamma surveys is to establish gamma levels for the background areas, and then to compare these background responses to the property-specific gamma levels to see if there are significant differences. The gamma surveys will be conducted on all of the "Properties to be Evaluated" referenced above for which access is granted by the property owner.

Step 4: Identify Soil Sampling Locations

The information from the gamma surveys and the coal combustion by-product verification studies will be compiled and evaluated to aid in the identification of appropriate properties for soil sampling. Soil sampling will be conducted on nine properties, including three to be selected based on the results of the gamma surveys, three to be selected based on the results of the coal combustion by-product visual inspection program, and three to be selected with input from the community. These nine properties will be selected from the 45 properties referenced above under the "Properties to be Evaluated" section for which access is granted by the property owner.

The USEPA will participate in the property selection and will have final approval of the locations. The gamma surveys results will also be reviewed with USEPA to determine if any other locations may warrant additional sample collection.

Step 5: Private Property Soil Sampling

Soil samples will be collected from the nine properties selected in Step 4. In general, each property will be divided into four approximately equally sized quadrants, two in the front yard and two in the back yard. Figure 3 provides an example of the sampling locations for a typical property.

Additional quadrants will be used to address three specific property uses (i.e., a vegetable garden, an unpaved driveway where coal combustion by-products are present, and a child's play area, based on presence of swing sets or other outdoor play equipment). Within each quadrant, approximately five equally spaced sample locations will be identified. Samples collected at each of the five locations will be composited over specific depth intervals, such that one sample from each sampling depth from each quadrant

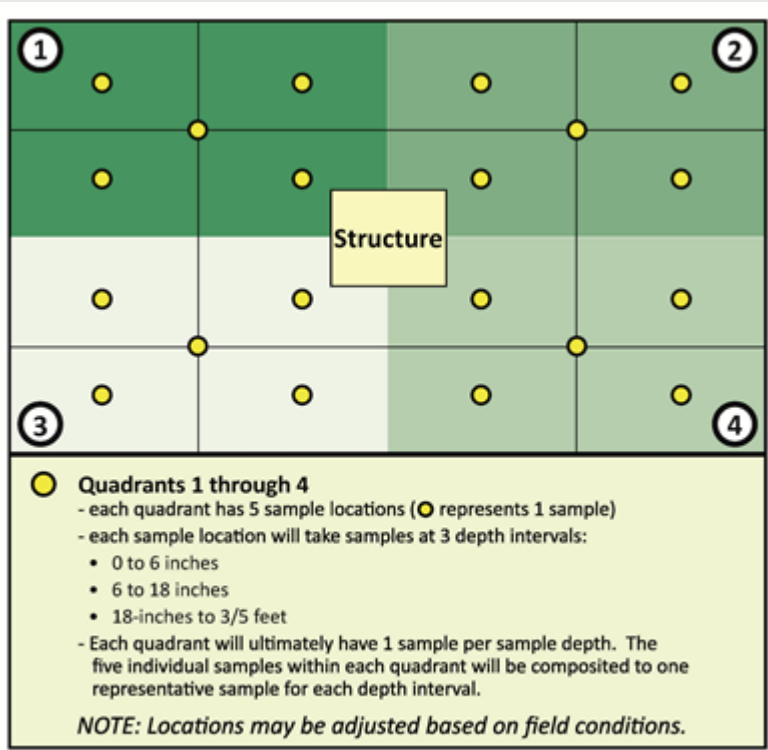


Figure 3: Example Soil Sampling

will be obtained. Soil from specific depths at a minimum of 20 locations, as shown on Figure 3, will be collected on each property; however, the volume of the soil samples will be very small. Samples will be collected using hand tools carried by the sampling crew.

The constituents to be addressed by the property-specific sampling have been identified based on the results of the HHRA and discussions with USEPA. These are:

Aluminum, Arsenic, Chromium (total), Chromium (hexavalent), Cobalt, Iron, Thallium, Vanadium, and Radionuclides

The previous USEPA-approved analyses of coal combustion by-product and background soil samples included 12 radionuclides expected to be present in coal combustion by-products. However, the USEPA has requested, and the Respondents have agreed, that the constituents to be addressed in the property sampling will include a complete library of gamma-emitting naturally occurring radioisotopes plus Cesium-137.

Reporting

Once the data are collected, validated and evaluated, a report of the results will be prepared. Approximately twelve weeks after soil samples collected from the nine selected properties are analyzed we expect to release a draft report to USEPA detailing the findings of the work consistent with

USEPA protocol. Land owners whose properties were sampled can also obtain a copy of the information specific to their property at that time.

Next Steps

The results of the soil sampling plan will be compared to the results of the background sampling and surveys, and will be used to confirm the results of the HHRA. The schedule for this work will be determined with USEPA.

We are committed to providing the community with information about this project and involving the community. A separate Pines Update will be provided to the community with a summary of the results of the additional soil sampling.

The documents cited in this update can be found on U.S. EPA's website (www.epa.gov/region5/cleanup/pines) and all previous Pines Updates can be found online as well (<http://pinesupdate.com/>).

Safety Corner

The sampling program described in this Pines Update will require the use of survey and/or sampling equipment, and our technicians will need to have enough room to conduct the work in a safe manner and to ensure the integrity of the data collection. Safety tape and signs will be deployed at designated work areas throughout the course of this investigation.

During the work, community members will not be allowed inside marked off safety zones. While we understand the public's interest in this project, for your safety we must request that all warnings and directions given by the on-site technicians are followed. These measures are being taken to protect your safety and the safety of the technicians.

As a reminder, employees of AECOM will be conducting the sampling, with oversight by USEPA and their contractors. The AECOM field team will be identifiable by photo identification badges and vests displaying the AECOM name.

Safety is our #1 Concern!

Safety is the number one priority during the field investigation. If you have questions or concerns about the field work, please contact us – contact information is provided in the “Our Commitment...” box below.

Our Commitment....

NIPSCO and Brown are committed to keeping you informed on the progress of the investigation of the Pines Area of Investigation. Look for future *Pines Updates* to update you to our progress. We also have a website to provide continual updates on the project:

www.pinesupdate.com

Please contact the Communications Coordinator at the address listed below to be placed on the mailing list.

**Communications Coordinator
Brown Inc.
720 W. US Hwy 20
Michigan City, IN 46360**

If you have questions regarding the sampling discussed in this Pines Update, please contact:

**Lisa Bradley, AECOM
978-905-2131 or
lisa.bradley@aecom.com**

Pines Update #22, Nov 2013

Communications Coordinator
720 W. US Hwy 20
Michigan City, IN 46360