US EPA RECORDS CENTER REGION 5
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EPA-Approved Test Pit/Trench Investigation Letter Work Plan

Karen Cibulskis to: Quigley, Steve, KBrown, jrc, Loney, Adam, Almeida, Luis, Paul Jack, roger.mccready 05/06/2008 05:21 PM

Cc: mankowski.matthew, vanderpool.luanne, matt.justice, mark.allen, brett.fishwild, tccampbell, nash.thomas, david.boehnker

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Hi Steve.

Attached is the EPA-approved Test Pit/Test Trench Investigation Letter Work Plan. The test pit/trench work plan has been modified to remove EPA's comments from the body of the document, make the changes we discussed on the phone, and make a few other language changes that do not change the scope of the work.

If CRA agrees with these changes, please make the attached redline/strikeout corrections in the work plan and resubmit it as a .pdf for EPA's records. It would also help if you could change the letter heading to "Final Test Pit/Test Trench Investigation Letter Work Plan" or something similar to avoid any confusion.

Also, concerning CRA's note to EPA: EPA has indicated several times that the South Dayton Dump and Landfill Site is a landfill and EPA's presumptive remedy for a landfill is containment. EPA's Streamlined Risk Assessment for the Site supports this approach. Since landfill materials may be a heterogeneous mixture of waste, intensive, systematic landfill contents sampling and laboratory analysis with human health and ecological risk assessment would be needed to demonstrate that any part of the landfill does not need a cap or that something less than a solid waste compliant cap would be protective of human health and the environment and support an ARARs waiver. The work proposed in the EPA-approved Test Pit/Test Trench Investigation Letter Work Plan does not include this type of work. EPA also does not agree that this type of work is needed to conduct a FS or to support a ROD for this Site. However, EPA does agree that if there are any specific, valid uncertainties about a particular area of the Site, these uncertainties can be addressed during RD/RA.

I will start working on the landfill gas work plan and hope to get EPA's comments on that to you next week.

In the meantime CRA should at least be able to get started on revising the parts of the FSP and QAPP (including FSP and QAPP SOPs) consistent with the EPA approved leachate, groundwater, geophysical and test pit/trench work plans and EPA's changes on the first part of the FSP.

Thanks again for all of your work on this. If you have any questions please feel free to contact me via email or at 312-886-1843. Also, I will be out of the office on Thursday and Friday but back in on Monday.

Karen.

EPA-Approved-Test-Pit-05-06-08.doc

March 17, 2008 Reference No. 038443

Karen Cibulskis
Remedial Project Manager
United States Environmental Protection Agency
Region V
77 West Jackson Boulevard
Mail Code SR-6J
Chicago, IL 60604

Dear Karen:

Re: Test Pit/Test Trench Investigation
South Dayton Dump and Landfill Site, Moraine, Ohio (Site)

This Letter Work Plan presents the scope of work for a test pit and test trench investigation of parts of the Site. Conestoga-Rovers & Associates (CRA) has prepared this Letter Work Plan on behalf of the South Dayton Dump and Landfill Potentially Responsible Party Group (PRP Group).

This Letter Work Plan is based on the February 12 and 27, 2008 discussions between the PRP Group and United States Environmental Protection Agency (USEPA) regarding the additional data that the PRP Group would like to collect for the Feasibility Study (FS). The Letter Work Plan also incorporates comments from the USEPA on a draft that was discussed at the February 27, 2008 meeting. The Letter Work Plan incorporates comments received from USEPA on April 15, 2008.

The objectives of the test pit and test trench excavation and sampling are as follows:

- collect data to assist in identifying the nature and delineating the extent of various types of landfilled materials above the water table;
- collect data to assist in characterizing landfill materials above the water table;
- collect data to assist in characterizing leachate from unsaturated landfilled material;
- assess areas of the Site previously identified as specific areas of concern [i.e., Valley Asphalt drum removal area, Valley Asphalt former underground storage tank (UST) area (a.k.a. Dayton Recycling), Custom Delivery UST area, Lot 4423, etc.); and
- identify Site areas, which may require further investigation (for example leachate sampling and analysis, groundwater quality investigation, or other delineation work).

The test pit and test trench investigations will be completed after the Land Survey, Bathymetry Survey, and Geophysical Investigation, and Leachate Seep Investigation have been completed. A schedule, including a Gantt chart, for the investigative activities to be completed at the Site in 2008 was provided to USEPA on March 11, 2008. The locations of the test pits and test trenches may be adjusted based on the results of these previously mentioned investigations and upon consultation with the USEPA.

TEST PITS/TEST TRENCHES

Test pits and test trenches are proposed in locations where the PRP Group would like to collect additional information about the depth and nature of the fill material above the water table. The information will be used to verify the limits of fill and to assist in characterizing the nature of the landfilled materials present in the areas investigated. ~~*THE SITE IS A LANDFILL AND EPA'S PRESUMPTIVE REMEDY FOR A LANDFILL IS CONTAINMENT. EPA'S STREAMLINED RISK ASSESSMENT FOR THE SITE SUPPORTS THIS APPROACH. SINCE LANDFILL MATERIALS MAY BE A HETEROGENEOUS MIXTURE OF WASTE, INTENSIVE, SYSTEMATIC LANDFILL CONTENTS SAMPLING AND LABORATORY ANALYSISIS WITH HUMAN HEALTH AND ECOLOGICAL RISK ASSESSMENT WOULD BE NEEDED TO DEMONSTRATE ANY PART OF THE LANDFILL DOES NOT NEED A CAP OR THAT A SOIL CAP WOULD BE PROTECTIVE OF HUMAN HEALTH AND THE ENVIRONMENT AND SUPPORT AN ARARS WAIVER. THE WORK PROPOSED IN THIS LETTER WORK PLAN DOES NOT DO THIS. [Note to USEPA: The work proposed in this Letter Work Plan, together with the work proposed in the other Letter Work Plans is intended to provide additional data for the Site, which will assist the PRP Group and USEPA in determining whether a Presumptive Remedy is appropriate for the entire Site or if there are portions of the Site, where further investigation and, potentially, an alternative remedy would be more appropriate.]*~~

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Six test pits will be excavated in the central portion of the Site ~~to determine the types and depth of fill in these locations and to characterize the fill~~. Twenty-three test trenches will be excavated throughout the Site ~~to determine the types and depth of fill in these locations and to characterize the fill at these locations~~.

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The locations of the test pits and test trenches will be finalized based on the results of the geophysical investigation (the USEPA may be asked to approve moving, relocating, or adding test pit and test trench locations based on field observations, geophysical investigation results, etc.). The nature and depth of fill material above the water table will be visually identified and recorded. Test trenching will focus on the perimeter of the PRP Group's preliminary direct contact presumptive remedy area, which was defined in the RI/FS Statement of Work and the area immediately beyond the perimeter. In addition, the test trenching will assist in identifying and characterizing fill material at locations along the western embankment of the Site.

Excavations will be completed to the depth of the water table, where possible (as limited by the ability of the excavator to reach the depth of the water table, the stability of the walls of the excavation, and/or the presence of obstructions). If an obstruction is encountered during the excavation of a test trench, the location of the trench will be adjusted to avoid the obstruction. If excavation to the water table is not possible due to the depth of the water table or the stability of the fill material, the PRP Group will consider the need for additional investigation at the location in question during future investigation work. The potential impacts from saturated fill materials will be assessed as part of the groundwater investigation proposed for the Site (under separate cover). The utility of this information to the FS is discussed above.

Test pits and test trenches will be excavated in the locations shown on Figure 1. As noted above, the locations of the test pits and test trenches may be adjusted based on the results of the Land Survey, Bathymetry Survey, and Geophysical Investigation, and the Leachate Seep Investigation and upon consultation with the USEPA. Each test pit will be approximately 6 feet long by 3 feet wide and will extend to the water table, if the excavation can be completed safely to that depth (i.e., stable slopes and excavation sidewalls, no buried structures, etc.) and the excavator is capable of reaching that depth.

Each test trench will be approximately 30 feet long by 3 feet wide, and will extend to the water table (if this can be excavated safely) and horizontally to the visual limit of fill. If the horizontal limit of fill is not determined in any planned 30-foot trench, to the extent practical (i.e., where not impeded by the presence of surface structures, property boundaries, unstable slopes or side walls, buried structures, etc.), the test trench lengths will be extended to attempt to visually locate the edge of the fill. This visual limit (both lateral and vertical) will be determined by the presence of undisturbed native soil in the excavation. CRA will also note if fill material appears to consist of re-located spoils from the gravel extraction operation versus undisturbed native material; however, the presence of relocated spoils will not be used as an indicator that other wastes have not been disposed at an individual location. Test trench excavation will continue in these areas to the depth of native material or the maximum reach of the excavator, whichever is less. ~~*IF CRA IS INDICATING THE PRESENCE OF RELOCATED SPOILS FROM THE GRAVEL EXTRACTION OPERATION WOULD BE USED INSTEAD OF UNDISTURBED NATIVE MATERIAL TO INDICATE THE VERTICAL LIMIT OF FILL EPA DOES NOT AGREE WITH THIS APPROACH. EVEN IF THE RELOCATED SPOILS FROM THE GRAVEL EXTRACTION OPERATION WERE DEFENSIBLY DEMONSTRATED TO BE UNCONTAMINATED AT A LOCATION, THERE COULD BE ADDITIONAL WASTE UNDER THIS LAYER WITH UNACCEPTABLE LEVELS OF CONTAMINANTS. FOR EXAMPLE, IN MW-204, THERE WAS A LAYER OF "CLAY: BROWN; SOME FINE SAND; SEVERAL COBBLES", "COARSE SAND AND CLAY" AND "CLAY AND FINE SAND" FROM ABOUT 9 TO 17 FEET BGS, FOLLOWED BY A LAYER OF "CLAY AND BLACK FOUNDRY SAND"*~~

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~~*BELOW THIS AT 18 FEET BGS. THIS IS CONSISTENT WITH EPA'S CONCERNS ABOUT THE LANDFILL BEING A HETEROGENEOUS MIXTURE OF WASTE MATERIAL.*~~

The nature and depth of fill material will be visually identified and recorded. The procedures and equipment to be used to excavate trenches and visually characterize the fill material are described below.

TEST PIT AND TEST TRENCH EXCAVATION PROCEDURES

An excavator or extended reach backhoe will be used to excavate the test pits and test trenches. The reach of the excavator or backhoe will be at least 18 feet. Data regarding conditions at depths greater than those that can be reached by the excavator may be obtained during vertical aquifer sampling and monitoring well installation. The PRP Group will provide the details of any soil sampling during VAS and any revisions to the Field Sampling Plan and Quality Assurance Project Plan to EPA for review and approval prior to conducting this work. The PRP Group will also submit any revisions to the Health and Safety Plan (HASP) to EPA for review prior to conducting this work.

~~*TABLES, FIGURES AND THE VALLEY ASPHALT WELL LOG INDICATE THERE COULD BE AS MUCH AS 30 TO 33 FEET OF FILL ABOVE THE WATER TABLE IN SOME TEST PIT AND TRENCH LOCATIONS. PLEASE CLARIFY WHETHER THE EXCAVATOR OR EXTENDED REACH BACKHOE USED FOR TEST PITS IN THESE AREAS WILL BE ABLE TO REACH TO DEPTHS OF UP TO 30 TO 33 FEET DEEP. HOWEVER, EPA RECOGNIZES THIS WORK IS NOT NEEDED TO SUPPORT EPA'S PRESUMPTIVE REMEDY FOR THE SITE.*~~

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The test pit excavation procedures are as follows:

1. Each test pit will be assigned a unique identification number. Prior to starting the test pit excavations, the locations of each test pit and test trench will be staked in the field using the locations identified on Figure 1. As noted above, the locations of the test pits may be adjusted based on the results of the Land Survey, Bathymetry Survey, and Geophysical Investigation, and the Leachate Seep Investigation and upon consultation with the USEPA; ~~*AREN'T THESE LOCATIONS SUBJECT TO CHANGE BASED ON THE GEOPHYSICAL SURVEY/LEACHATE INVESTIGATIONS AS STATED ABOVE?*~~

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2. The area immediately adjacent to the test pit will be covered with two layers of 6-mil polyethylene sheeting for stockpiling excavated ~~waste and~~ fill. The polyethylene sheeting and excavation spoils will be placed downwind of field personnel and in such a manner that water runoff from the waste material will be directed back into the excavation. If possible, fill/waste material temporarily stockpiled on the liners will be backfilled into the open excavations before the contractor leaves the Site for the day. If

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the waste material cannot be backfilled at the end of the workday, the contractor will ensure the material is covered securely with a polyethylene liner to control potential emissions and to minimize the exposure of the material to rainwater. The contractor will also ensure that temporary fencing is placed around the stockpiled material and the open excavation; ~~*WON'T TEMPORARY FENCING BE NEEDED AROUND ANY EXCAVATION LEFT OPEN OVERNIGHT AND STOCKPILES?*~~

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3. The test pits will be approximately 3 feet wide and will extend to the depth of the water table, where possible and feasible (as limited by the ability of the excavator to reach that depth, the stability of the walls of the excavation, and/or the presence of obstructions). The lengths of individual test pits will be determined in the field by the field representative based on conditions encountered during excavation. If obstructions are encountered and sidewalls are stable, then the width or length of the test pit may be expanded to aid in excavating to depth. Excavation at each location will be completed in a controlled manner so as to minimize damage to any potentially intact drums. If a test pit cannot be excavated to the surface of the water table due to obstructions or sidewall instability, and the excavation equipment is capable of reaching that depth, the test pit will be relocated 50 feet (or a lesser distance if appropriate) from the original location and attempted again. If, during the excavation of a test pit, PID or vinyl chloride readings above the action levels in the HASP are recorded, excavation of the test pit will cease and the Site Supervisor (SS) will evaluate what actions (i.e., upgrade in level of personal protection equipment or termination and backfilling of test pit) are appropriate. If during the excavation of a test pit, combustible gas, oxygen,, hydrogen sulfide, carbon monoxide, or radiation readings exceed (or in the case of oxygen fall below) an action level, the test pit excavation will be immediately stopped and the text pit backfilled, provided it is safe to do so. The test pit will be relocated 50 feet (or a lesser distance if appropriate) from the original location and attempted again. The location will be documented, and, if appropriate and safe to do so, may be investigated further during other investigative activities at the Site (i.e., Groundwater Investigation, Landfill Gas/Soil Vapor Investigation, etc.); ~~*PLEASE EXPLAIN WHAT PROCEDURES WILL BE UNDERTAKEN IF A LOCATION MUST BE ABANDONDED DUE TO HIGH PID, VINYL CHLORIDE, OR GAS READINGS.*~~

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4. CRA will observe the materials excavated and record the nature of the materials on a test pit stratigraphy log. ~~*PLEASE PROVIDE SOME DISCUSSION TO EXPLAIN HOW THE DEPTH OF ANY FILL INTERVAL/NATIVE SOIL IN THE TEST PITS/TRENCHES WILL BE ACCURATELY MEASURED. FOR EXAMPLE, CAN THE EXCAVATOR ONLY EXCAVATE OUT MATERIALS FROM 0-2 FEET, THEN 2-4 FEET, 4-6 FEET, ETC SO IT IS CLEAR WHAT MATERIAL CAME FROM WHAT INTERVAL? HOW WILL THIS BE CONFIRMED?*~~ The test pits will be excavated in two to three foot increments to aid in accurately determining the depth of discrete layers of fill material and the fill

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material/native material interface. Where appropriate, and where it is safe to do so, CRA will measure the depth of the test pit excavation where specific layers of fill material are encountered and the total depth of the excavation. The observations will include a visual description of the types of material (i.e., undisturbed native soil, spoil from quarry operations, domestic refuse, industrial refuse, metallic debris, ash, fly ash, construction and demolition debris, foundry sand, asphalt, slag, or other appropriate description) and, if possible, a Unified Soil Classification System (USCS) description. Soils will be logged using the USCS by an on-Site geologist. Soil classification methods will include visual assessment, texture assessment, dry strength tests, toughness tests, and dilatancy tests, as appropriate depending on the nature of the soil encountered. The visual classification of waste materials is, by its very nature, somewhat arbitrary. The on-Site geologist will be experienced in performing such observations, which will be based on the physical nature of the material encountered. As detailed below, samples of distinct fill materials will be retained in the event that the classification of specific materials needs to be revisited in future. ~~*PLEASE EXPLAIN WHICH METHODS THE GEOLOGIST WILL USE FOR THE FIELD CLASSIFICATION.*~~ Photographs of the material will also be included; ~~*THE VISUAL CLASSIFICATION OF WASTE TYPES DESCRIBED HERE IS ARBITRARY. PLEASE PROVIDE SOME CRITERIA FOR THESE DESCRIPTIONS, INCLUDING PHYSICAL CHARACTERISTICS, AS WELL AS THE ASSURANCE THAT THE FIELD GEOLOGIST WILL HAVE THE EXPERTISE TO RECOGNIZE THESE VARIOUS FILL TYPES. ALSO, WHAT DOES CRA MEAN BY "WASTE FILL" SINCE MANY OF THESE MATERIALS ARE CONSIDERED "WASTE FILL". PERHAPS CRA MEANS "OTHER INDUSTRIAL WASTE?" WHAT IS FOUNDRY SAND CONSIDERED? WHAT IS ASPHALT CONSIDERED?*~~

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5. Empty drum overpacks will be maintained at the Site during excavation. Should an intact waste container be damaged during excavation the drum management procedures presented in Attachment A will be implemented; and

6. Each test pit will be backfilled with the excavated materials in reverse order to that in which they were removed. The test pits will be restored to match surface conditions prior to excavation. During backfilling of the test pit, the bucket of the excavator will be used to compact the material as it is placed in the excavation in order to ensure that any expansion of the materials that occurs during excavation is reversed and the test pits can be restored to grade. ~~*SINCE THE EXCAVATED MATERIALS MAY EXPAND TO A GREATER VOLUME THAN THE EXCAVATION, PLEASE EXPLAIN WHAT ACTIONS WILL BE TAKEN TO ENSURE THE PITS/TRENCHES WILL BE RESTORED TO GRADE?*~~

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~~*PLEASE DESCRIBE THE PROCEDURES THAT WILL BE USED TO PROTECT THE GENERAL PUBLIC AND ON-SITE COMMERCIAL/INDUSTRIAL WORKERS FROM POTENTIAL EMISSIONS DURING TEST PITS/TRENCHING.*~~

Access of the general public and on-Site commercial/industrial workers to the investigative locations will be restricted by the SS and air monitoring will be used to ensure that any emissions generated during test pitting activities do not pose a risk to the general public or on-Site workers. On-Site commercial/industrial workers will be notified in advance of intrusive activities that may have the potential to generate emissions, where these intrusive activities are located proximally to an active on-Site commercial/industrial facility.

Test trenches will be excavated in the same manner as detailed above for test pits except that test trenches will be excavated to the top of the water table in a continuous length of up to 30 feet or the horizontal limit of fill (if undisturbed native soil is encountered before reaching 30 feet) as discussed above. ~~*PLEASE PROVIDE SOME ADDITIONAL CLARIFICATION. IF THE TRENCH STARTS IN FILL, WILL THE TRENCH CONTINUE AWAY FROM THE PRPS' DIRECT CONTACT PRESUMPTIVE REMEDY AREA (DC-PRA) FOR A MAXIMUM OF 30 FEET OR LESS THAN 30 FEET IF UNDISTURBED NATIVE SOIL IS ENCOUNTERED IN LESS THAN 30 FEET? WHAT IF UNDISTURBED NATIVE SOIL IS STILL NOT ENCOUNTERED IN THE 30 FOOT TRENCH? WILL CRA STOP AT 30 FEET ANYWAY (EPA'S UNDERSTANDING FROM FEBRUARY MEETING BUT NOT CONSISTENT WITH PREVIOUS SECTION WHICH INDICATES CRA WILL CONTINUE EXCAVATING)? OR IF THE TRENCH STARTS IN FILL WILL CRAMOVE THE TRENCH 30 FEET (OR OTHER DISTANCE) AWAY FROM THE PRPS' DC-PRA AND START AGAIN?*~~

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~~*WHAT HAPPENS IF THE TRENCH STARTS IN UNDISTURBED NATIVE SOIL? WILL CRA THEN TRENCH UP TO 30 FEET TOWARD THE PRPS' DC-PRA OR LESS THAN 30 FEET IF FILL IS ENCOUNTERED IN LESS THAN 30 FEET? WHAT IF FILL IS STILL NOT ENCOUNTERED IN 30 FEET? WILL CRA CONTINUE TOWARD THE PRPS' DC-PRA OR STOP AT 30 FEET EITHER WAY? OR IF THE TRENCH STARTS IN UNDISTURBED NATIVE SOIL WOULD CRA MOVE THE TRENCH 30 FEET (OR OTHER DISTANCE) TOWARD THE PRPS DC-PRA AND START AGAIN? PLEASE CLARIFY.*~~

~~*WHERE WILL CRA START AND WHAT DIRECTIONS WILL TRENCHES IN OTHER SITE AREAS (E.G., VALLEY ASPHALT, LOT 3753, 4423, ETC.) BE EXCAVATED SINCE THE TRENCHES ARE SHOWN TO BE 150 FEET ON THE FIGURE BUT MAY ACTUALLY ONLY BE AS LONG AS 30 FEET. WOULD THEY BE EXCAVATED 15 FEET ON EITHER SIDE OF THE STARTING POINT (CENTER OF 150 FOOT TRENCH SHOWN ON FIGURE?) IN THE DIRECTIONS SHOWN ON THE FIGURE?*~~

To the extent possible given the available data for the Site, CRA will attempt to start the excavation in areas of fill (i.e., non-native) material and continue the excavation towards the presumed location of native material. If fill is encountered at the start of the trench, the trench will be excavated in the presumed direction of native material, e.g., away from the PRP Group's direct contact presumptive remedy area. If native material is encountered at the start of the trench, the trench will be excavated in the presumed direction of fill material, e.g., towards the PRP Group's direct contact presumptive remedy area. As noted above, if the horizontal limit of fill is not determined in any planned 30-foot trench, to the extent practical (i.e., where not impeded by the presence of surface structures, property boundaries, unstable slopes or side walls, buried structures, etc.), the test trench lengths will be extended to attempt to visually locate the edge of the fill. Where further extension of a test trench is not feasible and/or practicable, the PRP Group may, in consultation with the USEPA Site representative(s), elect to abandon a test trench location and install an additional test trench off-set from the original location in the presumed direction of the native/fill material, as appropriate. As noted above, the locations of the test trenches may be adjusted based on the results of the Land Survey, Bathymetry Survey, and Geophysical Investigation, and the Leachate Seep Investigation and upon consultation with the USEPA.

~~*ALSO, THE VALLEY ASPHALT DRUM REMOVAL EXCAVATION WAS BACKFILLED WITH CLAY, THE DAYTON RECYCLING UST REMOVAL WAS BACKFILLED WITH CLEAN SOIL AND THE CUSTOM DELIVERIES UST REMOVAL WAS BACKFILLED WITH GRANULAR COMPACTED FILL. IF CRA'S TRENCH STARTS OFF IN OR ENCOUNTERES THESE MATERIALS WILL CRA MOVE THE TRENCH TO A LOCATION EXPECTED TO BE OUTSIDE THE BACKFILLED AREA TO MAXIMIZE THE USEFULNESS OF THE TRENCH INVESTIGATION INFORMATION AT THIS LOCATION?*~~

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If clean backfill material is encountered during any of the test trenches proposed in the Valley Asphalt drum removal area, the Dayton Recycling UST removal area, or the Custom Deliveries UST removal area, CRA will attempt to continue the test trench excavation away from the location of the clean backfill material or relocate the test trench outside the clean backfill material, as appropriate depending on the size of the original excavation.

The test trenches will be used to visually determine the limits of the fill and to provide information on the nature of the fill material at these locations.

TEST PIT AND TRENCH SAMPLING

The following sampling procedures and associated tasks will be performed as part of the Test Pit/Test Trench Investigation:

1. CRA will prepare a photographic log of each test pit excavation during its progression. The photographic record will list the date of each photograph, a specific description of what the photograph depicts, its location, and the photographer;

2. The dimensions of each excavation and a description of the materials encountered during excavation will be recorded on a Test Pit Stratigraphy log, an example of which is contained in Attachment B;

3. Samples of the fill will be collected, from each sidewall and the base of the excavation during the excavation. A minimum of one sample collected from each test pit and two samples collected from each test trench will be submitted to an analytical laboratory for analyses. The specific material selected for sampling and number of samples will be determined in the field by the CRA field representative and reviewed with the USEPA Site representative(s). Sample selection will be based on the visual appearance of the material (for example, color, staining, grain size), location of the material prior to removal (for example, adjacent to drums or base of excavation), and field instrument measurements [i.e., headspace readings using a photo-ionization detector (PID)]. CRA will collect a sample of each visually distinct layer of fill type for headspace analysis. Where fill material encountered is not visually distinct with depth, CRA will use visual and olfactory evidence of contamination and PID screening of the soil as it is excavated to identify appropriate samples for headspace screening. All olfactory evidence will be obtained in accordance with the HASP. At a minimum, if fill material is not visually distinct with depth, samples will be collected for headspace screening approximately every five feet vertically. ~~WHAT IF FILL TYPES ARE NOT DISTINCT? WHAT IF THEY ARE MIXTURES OF VARYING AMOUNTS OF MATERIAL? HOW WILL CRA DETERMINE WHICH SAMPLES TO SUBMIT FOR HEADSPACE ANALYSIS IN THESE CASES? EVERY 2 FEET? SOME CLARIFICATION WOULD BE HELPFUL, HOWEVER, EPA UNDERSTANDS THIS WORK IS NOT NEEDED TO SUPPORT EPA'S PRESUMPTIVE REMEDY FOR THE SITE.~~ The headspace analysis will aid in the selection of the discrete samples to be analyzed from each excavation and in the selection of the sample(s) to be retained from each distinct fill type based on visual observations and headspace analysis (see below). The observations will be recorded in the Test Pit Stratigraphy log. The samples will be collected directly from the bucket of the excavator and/or the stockpiled spoils. The sample collection procedures are identified in the Field Sampling Plan. Fill material samples will be collected in an attempt to characterize distinct fill zones or landfilled materials based on visual observations, PID readings, and the analytical data generated from the program as

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discussed below. CRA will also use ~~representative~~ fill samples retained (see below) from each test pit and test trench to compare fill types from different excavations. Samples of the same distinct fill zones ~~or landfilled materials~~ based on visual observations and headspace analysis will be collected from multiple test pit and test trenches where possible, i.e., where the same distinct fill zone ~~or landfilled materials~~ based on visual observations and headspace analysis are present in more than one test pit in recoverable quantities;

4. A portion of each sample will be placed in a separate container for headspace analysis using a PID. Results of the headspace analysis will be recorded in the Test Pit Stratigraphy log. A ~~representative~~ sample from each distinct fill ~~or waste~~ type observed in each test pit and test trench will be retained in appropriate sampling containers maintained at appropriate temperatures so that samples may be submitted in the future (within the applicable sample holding time) for laboratory analysis. Field observations and field screening results will be reviewed with the USEPA's Site representative(s) on a daily basis;

5. Daily proposed sample submissions to the analytical laboratory will be reviewed with the USEPA's Site representative(s). At a minimum, samples of each distinct fill type (based on visual observations and headspace analysis) encountered at the Site will be submitted for the following analyses: Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), TCL herbicides and pesticides, TCL polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) inorganics. ~~***HOW WILL THE VARIABILITY OF SIMILAR FILL TYPES AT MULTIPLE LOCATIONS ACROSS THE SITE BE ASSESSED? EPA UNDERSTANDS HOWEVER, THAT THIS WORK IS NOT NEEDED TO SUPPORT EPA'S PRESUMPTIVE REMEDY FOR THE SITE.***~~ Where field observations and field screening indicate that similar types of fill material in different test pits/ test trenches may be from different sources (e.g., visually similar materials in two distinct and separate layers within a trench or at widely varying depths within adjacent trenches, or visually similar materials in different trenches in different areas of the Site), additional samples may be submitted. Additional samples may also be submitted where visually similar fill materials are potentially impacted by different contaminants (e.g. visually similar materials where one has a strong odor and the other a high organic vapor content as measured using a PID).

~~***WHAT IF FILL TYPES ARE NOT DISTINCT? WHAT IF THEY ARE MIXTURES OF VARYING AMOUNTS OF MATERIAL? HOW WILL CRA DETERMINE WHICH SAMPLES TO SUBMIT FOR LABORATORY ANALYSIS IN THIS CASE? SOME CLARIFICATION WOULD BE HELPFUL, HOWEVER, EPA UNDERSTANDS THIS WORK IS NOT NEEDED TO SUPPORT EPA'S PRESUMPTIVE REMEDY FOR THE SITE.***~~

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~~*THIS SAMPLING STRATEGY DOES NOT ADDRESS ANY VARIABILITY BETWEEN VISUALLY SIMILAR TYPES OF WASTE DEPOSITED AT DIFFERENT INTERVALS THAT MAY BE CHEMICALLY DIFFERENT (E.G., FOUNDRY SAND AT THE BOTTOM OF A TRENCH AND FOUNDRY SAND AT THE TOP OF A TRENCH SEPARATED BY OTHER FILL MATERIAL, DISPOSED AT DIFFERENT TIMES AND POSSIBLY FROM DIFFERENT SOURCES – SEE, FOR EXAMPLE, BORING MW-204). ALSO, THIS SAMPLING STRATEGY MAY NOT BE ABLE TO DISTINGUISH BETWEEN CONTAMINANTS IN A FILL TYPE AND CONTAMINANTS THAT HAVE MIGRATED FROM ONE FILL TYPE INTO OTHER FILL TYPES THROUGH INFILTRATION. EPA UNDERSTANDS HOWEVER, THAT THIS WORK IS NOT NEEDED TO SUPPORT EPA'S PRESUMPTIVE REMEDY FOR THE SITE*~~ ~~will be submitted for the following analyses: Target Compound List (TCL) volatile organic compounds (VOCs), TCL semi-volatile organic compounds (SVOCs), TCL herbicides and pesticides, TCL polychlorinated biphenyls (PCBs), and Target Analyte List (TAL) inorganics~~. Multiple samples of similar fill types based on visual observations and headspace readings encountered across the Site will be submitted for TCL/TAL laboratory analysis to assess the variability of ~~these~~ the analyzed materials within the Site. Ash fill materials encountered will be collected and submitted for dioxin and furan analyses. Up to 10 samples of ash will be submitted for dioxin and furan analyses if ash is encountered in at least 10 separate excavations. ~~*THIS SAMPLING STRATEGY DOES NOT ADDRESS ANY POTENTIAL VARIABILITY IN DIOXIN FURANS (IF PRESENT) BETWEEN ASH DEPOSITED AT DIFFERENT INTERVALS THAT MAY BE CHEMICALLY DIFFERENT (E.G., ASH AT THE BOTTOM OF A TRENCH AND ASH AT THE TOP OF A TRENCH SEPARATED BY OTHER FILL MATERIAL, DISPOSED AT DIFFERENT TIMES AND POSSIBLY FROM DIFFERENT SOURCES). EPA UNDERSTANDS HOWEVER, THAT THIS WORK IS NOT NEEDED TO SUPPORT EPA'S PRESUMPTIVE REMEDY FOR THE SITE*~~ If potential friable asbestos-containing materials (ACM) (i.e., ceiling tiles, wall board, pipe insulation, automotive brake pad manufacturing refuse, etc.) are encountered, a minimum of one sample of each distinct type of ACM will be submitted for asbestos analysis. *PLEASE* ~~*CLARIFY WHAT POTENTIAL FRIABLE ACM MIGHT BE AND WHAT IT MIGHT LOOK LIKE.*~~

~~*ASBESTOS PARTICLES MAY BE MIXED WITH OTHER FILL MATERIAL, INCLUDING SURFACE MATERIAL, AND NOT READILY DISCERNABLE. CRA'S SAMPLING STRATEGY WILL NOT PROVIDE ANY INFORMATION ABOUT ASBESTOS IN THESE CASES. HOWEVER, EPA UNDERSTANDS THIS WORK IS NOT NEEDED TO SUPPORT EPA'S PRESUMPTIVE REMEDY FOR THE SITE.*~~

A sampling summary is presented in Table 1. The Health and Safety Plan will include provisions to assess worker exposure to potentially radioactive foundry sands.

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6. Should leachate seeps be identified in any of the test pits or test trenches, samples will be collected. For shallow leachate seeps that can be reached by hand from the edge of the test pit or trench, the area located immediately beneath the seep will be dug out using a clean shovel or trowel. A clean sample jar or pail will be set into the dug out area and the liquid will be allowed to gently accumulate in the container. If the depth of the excavation prohibits field personnel from safely conducting the liquid collection, sufficient saturated material in and around the seep will be excavated and placed on a polyethylene sheet and the liquid allowed to gently drain into a container. A field blank sample of distilled deionized water poured onto clean polyethylene sheeting will also be collected. The liquid will be transferred to sample containers for submission to the analytical laboratory. As the volume of liquid may be limited, prioritization of requested analyses for the sample will be as follows: TCL VOCs, TCL SVOCs, TCL herbicides and pesticides, TCL PCBs, and TAL inorganics. A sampling summary is presented in Table 1. Sampling of leachate seeps identified during the Test Pit/Test Trench Investigation will be performed in accordance with the Leachate Seep Investigation Work Plan and the Field Sampling Plan (FSP);

7. A composite sample ~~that is representative of the samples~~ of ~~the~~ each fill ~~types~~ type (i.e., construction and demolition debris, ash, and cinders, etc.) will be prepared from the retained samples of the ~~representative~~ fill types from the test pits and test trenches and submitted to the analytical laboratory for Toxicity Characteristic Leaching Procedure (TCLP) preparation with subsequent analysis of the resultant leachate for VOCs, SVOCs, herbicides, pesticides, and metals. Samples will also be analyzed for PCBs, corrosivity, ignitability, and reactive cyanide and sulfide. A minimum of one composite sample will be submitted for each ~~waste~~ fill type. Where similar ~~waste~~ fill types are present in widely separated locations, additional samples may be submitted. The parameters and associated analytical methods are specified in Table 1; and ~~***THIS IS NOT CLEAR. WOULD CRA, FOR EXAMPLE, BE MAKING ONE COMPOSITE "FOUNDRY SAND" SAMPLE FOR TCLP ANALYSIS MADE UP OF MATERIAL FROM EACH DISTINCT "FOUNDRY SAND" INTERVAL ENCOUNTERED IN EACH OF THE UP TO 20 OR MORE LOCATIONS? ASIDE FROM HAVING TO MEET HOLDING TIMES (E.G., 48 HOURS FOR VOCS) EPA CAUTIONS CRA THAT IT IS NOT CERTAIN HOW THIS DATA COULD BE MEANINGFULLY USED.***~~

3. Duplicate photographs and the corresponding photographic record will be provided to USEPA and the Ohio Environmental Protection Agency (Ohio EPA) at the completion of this investigation.

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The following protocol will be used to determine the number of samples to be submitted for laboratory analysis. Specific samples to be submitted for laboratory chemical analysis will be selected by the CRA field representative and reviewed with the USEPA's Site representative(s)

on a daily basis. Depending on the nature of materials encountered in an individual test pit or trench, the number of samples for each medium may vary. For example, if no drums or only minimal amounts of drum remnants are observed in a test pit, samples of drum contents would not be collected. In addition, the number of samples submitted for laboratory chemical analysis may increase or decrease depending on headspace results, field observations, the spatial distribution and types of existing data, and the number and types of samples collected. ~~A decrease in the number of samples is more likely to occur if specific patterns are recognized in the types and distribution of landfill contents.~~

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The intent of the test pit and test trench investigation is to identify locations that exhibit similar characteristics (i.e., visual, physical, and, to the extent the materials are analyzed, chemical composition). Test pits may be grouped together based on similar field observations. Where grouping occurs, ~~samples representative of the entire grouping will be submitted~~ CRA will select samples from the entire grouping for chemical analysis. The CRA field representative will establish the groupings, identify which test pits and test trenches ~~are required for~~ will compose a given grouping, and select fill samples for submission to the analytical laboratory for analysis. Fill materials will only be grouped together where the fill materials are present in the same area of the Site and where laboratory holding times allow. Inherent in the grouping of fill types is the presumption that analytical data and other results obtained will be representative of the entire grouping. ~~This presumption will be tested~~ CRA will attempt to evaluate this presumption through replicate sampling in wide spread waste types at a frequency of one replicate sample for every five grouped samples. ~~*THERE IS NO DISCUSSION IN THE WORK PLAN ABOUT COLLECTIVE REPLICATE SAMPLES OR HOW THE REPLICATE SAMPLING WOULD DEMONSTRATE UNIFORM CONCENTRATIONS OF ANALYTICAL PARAMETERS, ESPECIALLY IF LOCATIONS ARE "GROUPED" TOGETHER AND CHARACTERIZED BY ANALYTICAL RESULTS FROM ONLY ONE LOCATION.*~~ The test pit and test trench locations that are grouped together along with the corresponding sample identification number(s) will be identified in the Test Pit Stratigraphy log. Sample selection will be performed such that ~~representative~~ fill types from multiple different locations are selected. ~~*THE STATED INTENT OF THIS SECTION IS TO IDENTIFY AREAS THAT EXHIBIT SIMILAR CHARACTERISTICS. ASIDE FROM HAVING TO MEET HOLDING TIMES (E.G., 48 HOURS FOR VOCS) THE MOST DEFENSIBLE WAY TO DO THIS IS THROUGH EXTENSIVE AND SYSTEMATIC SAMPLING AND ANALYSIS, THEN ASSESSING THE RESULTS FOR SPATIAL PATTERNS OF OCCURRENCE. THE APPROACH OF GROUPING LANDFILL LOCATIONS BASED ON VISUAL CHARACTERISTICS, THEN SUBMITTING LIMITED SAMPLES REPRESENTING EACH PREDEFINED GROUP, WILL PROVIDE A BUILT-IN BIAS OF GROUP CHARARACTERISTICS (FOR ANALYTICAL RESULTS). HOWEVER, EPA UNDERSTANDS THAT SUCH AN EXTENSIVE AND SYSTEMATIC SAMPLING APPROACH IS NOT NEEDED TO SUPPORT EPA'S PRESUMPTIVE REMEDY FOR THE SITE.*~~

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All work will be performed in accordance with the Field Sampling Plan, Quality Assurance Project Plan, and Site-Specific Health and Safety Plan pending USEPA's approval of the relevant sections of these documents.

SCHEDULE

The test pit and test trench investigation work will commence within two weeks of the submission of the Survey and Geophysical Survey Report to the USEPA. Field activities will be completed within three weeks. CRA plans to use a single excavator to complete the test pit/test trenching activities; however, a second excavator and field crew will be added if scheduling constraints so dictate. ~~*PLEASE CLARIFY HOW MANY EXCAVATOR/BACKHOE CREWS CRA PLANS TO USE FOR THIS WORK.*~~ The PRP Group will provide the USEPA with verbal notification of field activities and the number of excavators to be used at least 15 days in advance of the initiation of field activities. ~~*ALSO, THE MORE ADVANCE NOTICE EPA HAS WILL HELP EPA TRY TO SCHEDULE OVERSIGHT CONTRACTORS FROM CH2M'S DAYTON OFFICE TO REDUCE OVERSIGHT COSTS.*~~

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REPORTING

Results of the test pit and test trench investigation will be summarized and presented in a report. The report, which will include a description of the field work completed, any deviations from the is Letter Work Plan and the rationale behind the change, photographs, logs, analytical summary tables, and analytical data reports, will be provided to the USEPA and Ohio EPA within one month of the receipt of analytical data from the laboratory. Monthly progress reports during the Test Pit/Test Trench Investigation field work will include the information required for monthly progress reports in the RI/FS SOW (including test pit/test trench locations, headspace readings, visual fill descriptions, stratigraphic information, samples collected, and analytical data).
~~*MONTHLY PROGRESS REPORTS DURING THE FIELD WORK SHOULD INCLUDE THE INFORMATION REQUIRED FOR MONTHLY PROGRESS REPORTS IN THE RI/FS SOW. PROVIDING EPA WITH TEST PIT/TRENCH LOCATIONS, HEADSPACE READINGS, VISUAL FILL DESCRIPTIONS AND STRATIGRAPHIC INFORMATION, SAMPLES COLLECTED, AND ANALYTICAL DATA AS IT COMES IN WILL HELP KEEP THE PROJECT MOVING.*~~

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

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES

Stephen M. Quigley

AL/ca/23
Encl.

c.c. Matt Mankowski, USEPA (PDF)
Matt Justice, Ohio EPA (PDF)
Eric Kroger, CH2M Hill (PDF)
Scott Blackhurst, Kelsey Hayes Company (PDF)
Wray Blattner, Thompson Hine (PDF)
Ken Brown, ITW (PDF)
Jim Campbell, Engineering Management Inc. (PDF)
Tim Hoffman, Representing Kathryn Boesch and Margaret Grillot (PDF)
Paul Jack, Castle Bay (PDF)
Robin Lunn, Mayer Brown (PDF)
Roger McCready, NCR (PDF)
Karen Mignone, Pepe & Hazard (PDF)
Adam Loney, CRA (PDF)

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~~ADDITIONAL COMMENTS~~

1. ~~Figure 1: The test trenches are shown at 5 times their planned size. This is misleading. Please revise test trench symbols to be smaller, like the symbols for monitoring wells and test pits.~~
2. ~~Figure 1: Please identify each test trench and test pit with an identification number so the locations can be easily identified during field work.~~
3. ~~Figure 1: One of the test trench locations is still under the asphalt pile. Will this location be eliminated, or moved to another area? Moving this trench to locations discussed during the February meetings – e.g., the southwest corner of Lot 3274, the northeast section of Lot 5171 and/or Lot 4610 would provide at least some information about these locations. EPA recognizes however, that this work is not needed to support EPA's presumptive remedy for the Site.~~
4. ~~Table 1: Shouldn't the heading for the "Investigative Samples" column be revised to read "Investigative Samples (Minimum) – if CRA is planning to collect~~

~~analytical samples from each fill type/interval detected in each test pit/trench. EPA recognizes however, that this work is not needed to support EPA's presumptive remedy for the Site.~~

5. ~~Table 1: Shouldn't "Field Parameters" for the test pit and trench sampling also include "visual observation of distinct fill types/intervals" – if CRA is planning to collect analytical samples from each fill type/interval detected in each test pit/trench. EPA recognizes however, that this work is not needed to support EPA's presumptive remedy for the Site.~~
6. ~~Table 1: Please change "Herbicides and Pesticides" to "TCL Herbicides and Pesticides" and "PCBs" to "TCL PCBs".~~
7. ~~Table 1: There is no "Task/Event" for the composite TCLP sampling discussed in the Work Plan.~~
8. ~~Table 1: If the planned frequency for field blanks is 1 per 10 and 1 per 20 for duplicates, then the numbers in these columns are not correct, and should be TBD for TBD "Task/Events".~~
9. ~~Table 1: Leachate is listed as a solid matrix. Please change to liquid.~~
10. ~~Table 1: Note 4 indicates the total quantity does not include MS/MSD samples but the actual numbers in the "Total" column appear to include MS/MSD samples. However, if the planned frequency is 1 per 20 then the numbers in the "MS/MSD" column are not correct, and should be TBD for TBD "Task/Events"~~
11. ~~Table 1: Note 3 mentions air sampling but air samples are not included in this Work Plan.~~
12. ~~Attachment A: Bullet 3 states that hazardous waste stockpiles exist and that procedures are in place for managing these areas. Please provide more detail on what/where these procedures are.~~
13. ~~Attachment A: Please state how overpacked drums will be handled following the test pit/trench investigation.~~