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NOV 18 2011

Ms. Maria Galanti
Site Coordinator
Ohio Environmental Protection Agency
Southeast District Office
2195 Front Street
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PPPO-03-1335655-12

Dear Ms. Galanti:

REMOVAL ACTION COMPLETION REPORT FOR THE X-103 AUXILIARY OFFICE BUILDING AT THE PORTSMOUTH GASEOUS DIFFUSION PLANT, PIKETON, OHIO

Enclosed for your review and concurrence, please find the *Removal Action Completion Report for the X-103 Auxiliary Office Building at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE/PPPO/03-0223&D1). This document was prepared in accordance with the *Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action for the Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project),* as amended on September 12, 2011.

This Removal Action Completion Report documents completion of the Phase I and Phase II activities for the X-103 Building Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) non-time-critical removal action, as described in the *Removal Action Work Plan for the X-103 Auxiliary Office Building at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (RAWP). Removal action alternatives for the X-103 Building were evaluated in the *Engineering Evaluation/Cost Analysis for Group 1 Buildings X-103, X-334, and X-344B at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*, and the decision to remove the X-103 Building was documented in the *Action Memorandum for the Group 1 Buildings X-103, X-334, and X-344B at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (Action Memorandum).

Phase I activities included demolition of the X-103 Building superstructure, demobilization of equipment, and recycling or disposal of the Phase I demolition materials. The Phase II activities included removal of the X-103 Building slab, restoration of the site, demobilization, and disposal of the Phase II demolition materials. The extent of the non-time-critical removal action was limited to the footprint of the X-103 Building. The Phase I and Phase II activities were completed in accordance with the RAWP and the applicable or relevant and appropriate requirements outlined in the Action Memorandum.

If you have any questions or require additional information, please contact Kristi Wiehle of my staff at (740) 897-5020.

Sincerely,

Joel B. Bradburne
Portsmouth Site Lead
Portsmouth/Paducah Project Office

Enclosure:
Removal Action Completion Report for the X-103 Auxiliary Office Building at PORTS

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Removal Action Completion Report
for the
X-103 Auxiliary Office Building
at the Portsmouth Gaseous Diffusion Plant
Piketon, Ohio

U.S. Department of Energy
DOE/PPPO/03-0223&D1

November 2011

This document is approved for public release per review by:	
Henry H. Thomas	3/22/11
PORTS Classification/Information Office	Date

Removal Action Completion Report
for the
X-103 Auxiliary Office Building
at the Portsmouth Gaseous Diffusion Plant
Piketon, Ohio

U.S. Department of Energy
DOE/PPPO/03-0223&D1

November 2011

By
Fluor-B&W Portsmouth LLC, under Contract DE-AC30-10CC40017

FBP-ER-EECA-BG-RPT-0036, Revision 4

CONTENTS

FIGURES

TABLES

ACRONYMS

ARAR	applicable or relevant and appropriate requirement
ACM	asbestos-containing material
cm^2	square centimeters
Cs	Cesium
DFF&O	*Directors Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action for the DOE Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project)*
DOE	U.S. Department of Energy
DOT	Department of Transportation
D&D	decontamination and decommissioning
dpm	disintegrations per minute
EE/CA	Engineering Evaluation/Cost Analysis
FBP	Fluor B&W Portsmouth, LLC
MDA	minimum detectable activity
mg/kg	milligrams per kilograms
OAC	Ohio Administrative Code
Ohio EPA	Ohio Environmental Protection Agency
PCB	polychlorinated biphenyl
PORTS	Portsmouth Gaseous Diffusion Plant
PPE	personal protective equipment
Ra	Radium
RACR	Removal Action Completion Report
RAWP	Removal Action Work Plan
RCRA	Resource Conservation and Recovery Act
SAP	Sampling and Analysis Plan
TCLP	toxicity characteristic leaching procedure
TLD	thermoluminescent dosimeters
USEC	United States Enrichment Corporation

EXECUTIVE SUMMARY

This Removal Action Completion Report (RACR) documents the U.S. Department of Energy's (DOE) completion of a removal activity in accordance with the *Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action for the DOE Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project)* (DFF&O) (Ohio Environmental Protection Agency[Ohio EPA] 2010) for the X-103 Auxiliary Office Building (hereinafter "the X-103 Building") at the Portsmouth Gaseous Diffusion Plant (PORTS) near Piketon, Ohio. The *Removal Action Work Plan for the X-103 Auxiliary Office Building at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (RAWP) (DOE 2011) described the removal action in two phases: Phase I was to involve the removal of the building superstructure and Phase II was to address removal of the underlying slab and underground piping and utilities located beneath the footprint of the X-103 Building. The underground piping and utilities were terminated (plugged and capped) at a nominal distance of two feet beyond the X-103 Building footprint prior to removal of the building superstructure.

The 10,000-sq-ft X-103 Building was a one-story steel-framed building, on a concrete slab, that was constructed in 1954. The building was originally used as a garage, and subsequently was used to clean and issue respirators, and for offices. At the time the removal action began, the building contained offices, restrooms, storage rooms, a mechanical equipment room, a conference room, a respirator washing and cleaning area, and a vault in the northwest corner of the building. The concrete vault securely stored a Radium-226 (Ra) radiological source and a Cesium-137 (Cs) radiological source.

Based on previous reports and characterization data, which are summarized in the *Engineering Evaluation/Cost Analysis for Group 1 Buildings X-103, X-334, and X-344B at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (EE/CA) (DOE 2010a), lead, polychlorinated biphenyls (PCBs), asbestos-containing materials (ACM), and radiological constituents were contaminants of concern in the X-103 Building. Lead-based paint was present on interior and exterior doors, floors, and walls. PCBs were potentially present in fluorescent light ballasts. Two fixed radiological sources were in sealed units in the secured vault in the northwest corner of the building. These sources were used to expose thermoluminescent dosimeters (TLDs) to a known level of radiation to aid in checking and calibrating the TLD system instruments.

The X-103 Building DFF&O removal activities for Phase I included removal of the above-grade X-103 Building superstructure, removal of wastes from the project site (generated during superstructure demolition and underground piping and utility removal) for off-site transport and disposition, onsite storage of clean hard fill, site restoration, and equipment demobilization.

Prior to the initiation of the DFF&O removal activities, pre-decontamination and decommissioning (pre-D&D) activities were conducted. As part of the pre-D&D activities, removal of the radiological sources and former source vault, fixed and loose equipment, ACM, and Toxic Substances Control Act and universal wastes (e.g., fluorescent light ballasts and mercury switches) were removed from the building.

Demolition activities (Phase I) were performed in compliance with X-103 Building applicable or relevant and appropriate requirements (ARARs). Controlled demolition of the X-103 Building superstructure was performed by strategically positioning equipment and waste containers to maximize demolition rates, minimize distance between debris and containers, and to maintain safe conditions. The above-grade demolition work was conducted using excavators with shear and grappler attachments and rubber-tire front-end loaders with bucket attachments. During Phase I the utilities beneath the footprint of the X-103 Building were isolated, de-energized and air gapped.

The X-103 Building DFF&O removal activities included removal of the X-103 Building concrete slab and foundation; removal and grouting of underground piping and utilities located beneath the X-103 Building slab footprint and within the nominal distance of two feet beyond the X-103 Building footprint; site re-contouring; site restoration; demobilization; and waste disposal as appropriate. The sewer system piping (both sanitary and storm) was grouted closed at the points where they exited the work area (the 2 ft. nominal distance beyond the bldg. footprint).

The X-103 Building DFF&O removal activities for Phase I and Phase II activities have been completed in accordance with the X-103 RAWP and the ARARs outlined in the *Action Memorandum for the Group 1 Buildings X-103, X-334, and X-344B at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (Action Memorandum) (DOE 2010b).

1. INTRODUCTION

The U.S. Department of Energy (DOE) has completed a removal action for the X-103 Auxiliary Office Building (hereinafter "the X-103 Building") in accordance with the *Director's Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action for the DOE Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project)* (DFF&O) (Ohio Environmental Protection Agency[Ohio EPA] 2010). This Removal Action Completion Report (RACR) documents the completion of both Phase I (removal of the building superstructure) and Phase II (removal of the underlying slab, concrete and asphalt aprons (driveways), underground piping and utilities, and site restoration activities including grading and reseeding).

The X-103 Building was located at coordinates N8400, E8300 in Quadrant I of the Portsmouth Gaseous Diffusion Plant (PORTS). Figure 1 shows the location of the former X-103 Building at the plant site. Figure 2 shows a detailed layout of the X-103 Building. Figures 3 and 4 are photographs of the X-103 Building.

1.1 REMOVAL ACTION COMPLETION REPORT PURPOSE AND SCOPE

This RACR documents completion of the X-103 Building DFF&O removal action, as described in the *Removal Action Work Plan for the X-103 Auxiliary Office Building at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (DOE 2011) (RAWP). Removal action alternatives for the X-103 Building were evaluated in the *Engineering Evaluation/Cost Analysis for Group 1 Buildings X-103, X-334, and X-344B at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (EE/CA) (DOE 2010a), and the decision to remove the X-103 Building was documented in the *Action Memorandum for the Group 1 Buildings X-103, X-334, and X-344B at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (Action Memorandum) (DOE 2010b). These documents were prepared in accordance with the DFF&O.

1.2 SITE DESCRIPTION AND HISTORY

The X-103 Building was located in the west-central portion of PORTS in the area identified as Quadrant I. Groundwater monitoring and remediation activities at PORTS have been conducted in four areas (or quadrants) defined by the direction of groundwater and surface water flow in accordance with the Consent Decree and the *Integrated Groundwater Monitoring Plan for the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* that was in effect at the time the samples were collected.

The X-103 Building was a one-story, steel-framed, 10,000-sq-ft building on a concrete slab, located in Quadrant I of PORTS. The X-103 Building was originally constructed in 1954 as a garage, and was subsequently used as the respirator facility and offices. The X-103 Building was electrically heated and air-conditioned by recirculating cooling water.

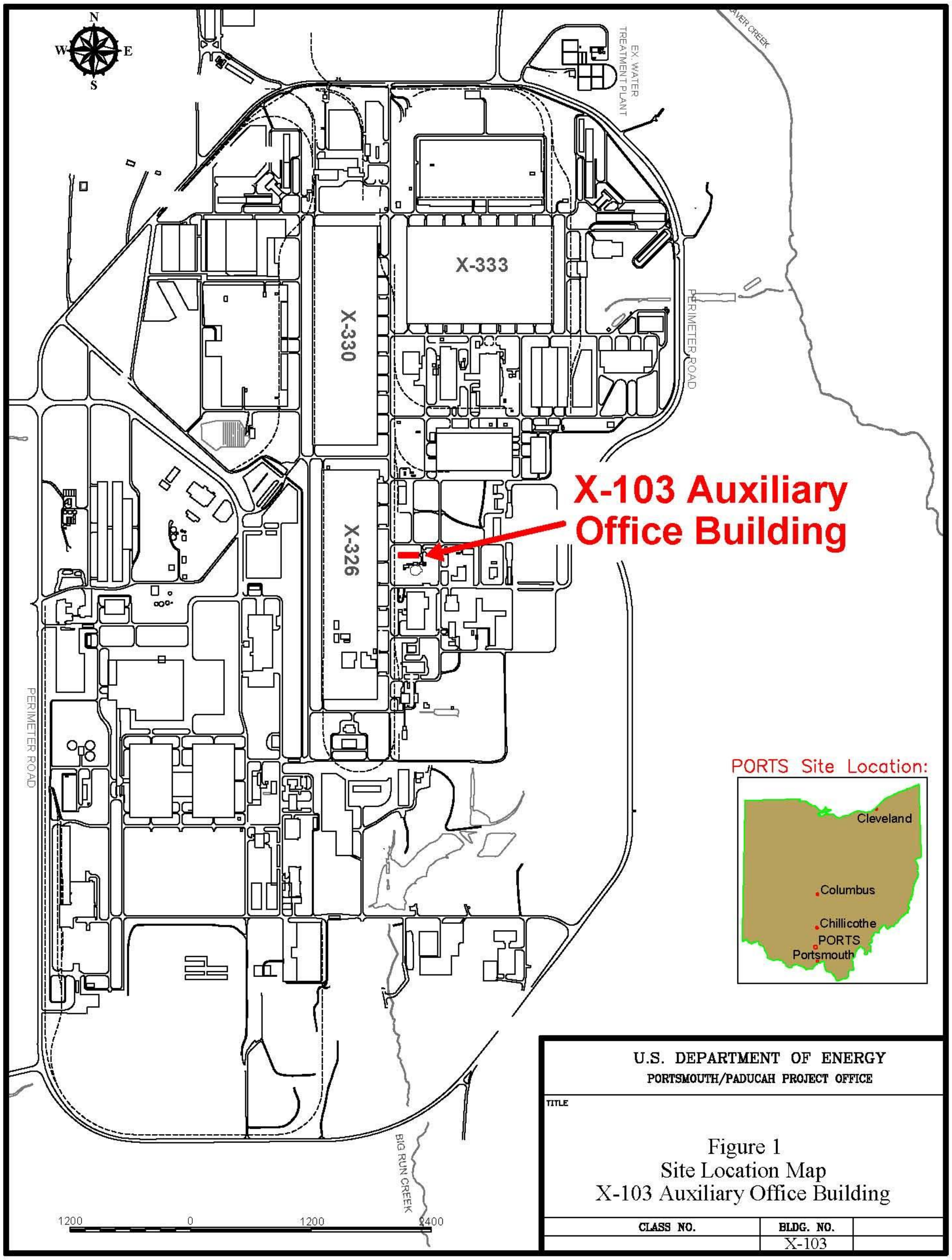


Figure 1
Site Location Map
X-103 Auxiliary Office Building

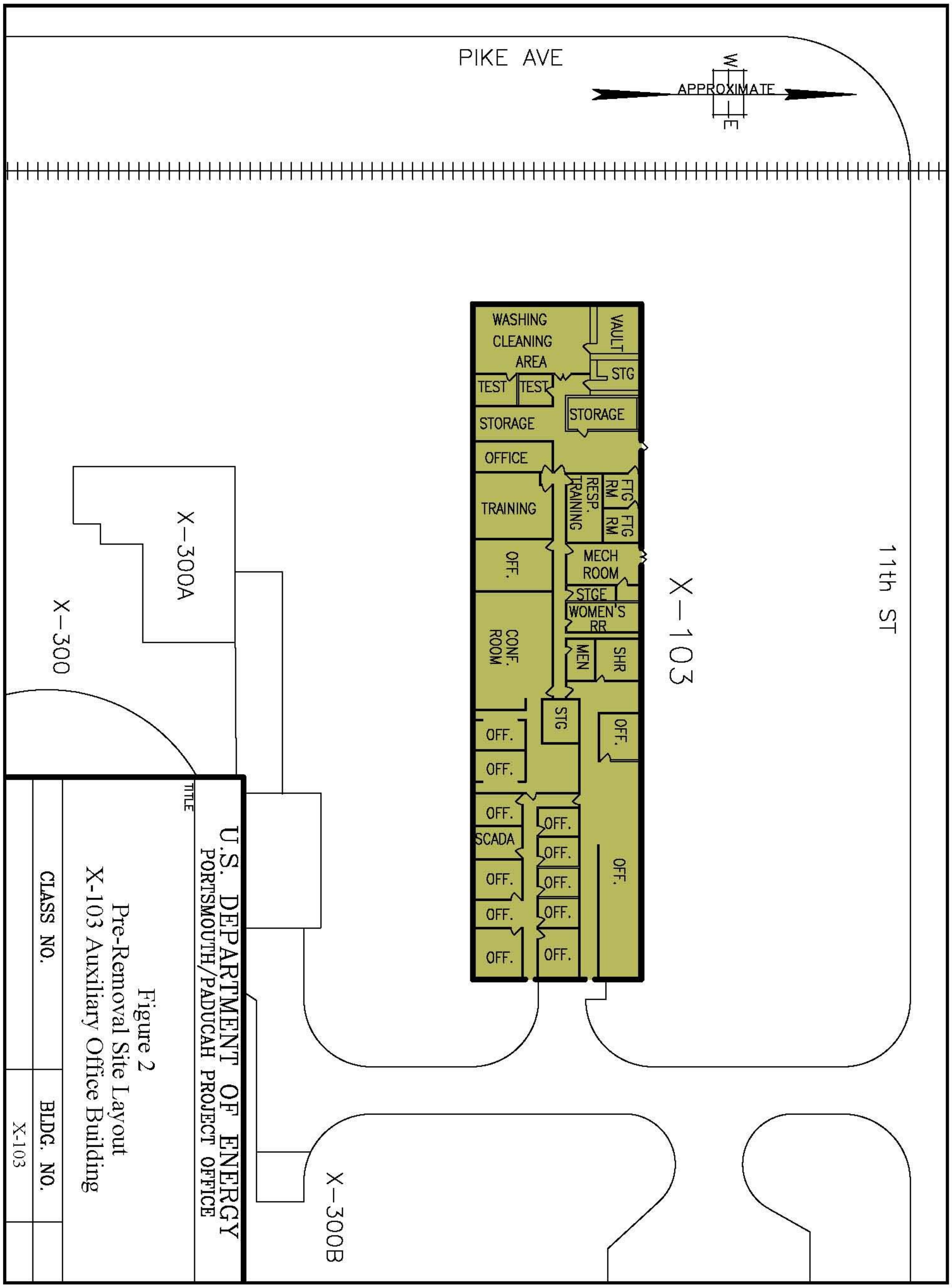


Figure 2
Pre-Removal Site Layout
X-103 Auxiliary Office Building

Figure 3. Photograph of front of X-103 Building facing west.

Figure 4. Photograph of north side of X-103 Building facing west.

At the time the non-time-critical removal action began, the X-103 Building contained offices, restrooms, storage rooms, a mechanical equipment room, a conference room, a respirator washing and cleaning area, and a vault in the northwest corner of the building. The concrete vault securely stored sealed sources of radiological isotopes, Radium-226 (Ra) and Cesium-137 (Cs). The sources were used to expose thermoluminescent dosimeters (TLDs) to a known level of radiation to aid in checking and calibrating the TLD system instruments.

The X-103 Building was vacated in 2006 while it was leased to the United States Enrichment Corporation (USEC). The X-103 Building was returned to DOE on December 11, 2009, and remained vacant until it was demolished. The demolition of the X-103 Building commenced on March 7, 2011, and demolition activities were completed on June 28, 2011.

1.3 CONTAMINANTS OF CONCERN

Based on previous reports and characterization data, which are summarized in the EE/CA (DOE 2010a), lead, polychlorinated biphenyls (PCBs), and radiological constituents were contaminants of concern in the X-103 Building. Lead-based paint was present on interior and exterior doors, floors, and walls. PCBs were potentially present in fluorescent light ballasts. Two fixed radiological sources were in sealed units in the secured vault in the northwest corner of the building. These sources were used to expose TLDs to a known level of radiation to aid in checking and calibrating the TLD system instruments.

This historical information and process knowledge were supplemented by sampling and analyses of the building components that were expected to remain after the pre-decontamination and decommissioning (pre-D&D) activities were completed. Sampling and analyses were conducted in accordance with the provisions of the *Sampling and Analysis Plan for the X-103 Auxiliary Office Building at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio* (SAP) (DOE 2010c). Because the Phase II activities were added to the RAWP after implementation of the SAP, additional sampling and analyses were conducted to further characterize the concrete slab. Analytical results were reported in the X-103 RAWP and are summarized below. Data summaries and figures showing the locations from which samples were collected are provided in Appendix A.

1.3.1 Summary of Data Reported in the X-103 RAWP

1.3.1.1 Superstructure

Paint Chips

Based on analytical results from paint chips collected from the X-103 Building in July 2010, lead-based paint was present on the surfaces of interior walls of the facility. Low levels of PCBs were also detected in all of the paint chips that were collected. The paint chip data is presented in Appendix A, Table A.1. A drawing showing the locations from which these samples were collected is also provided in Appendix A. Based on these data, additional samples were collected from the building components present in the X-103 Building superstructure and analyzed for total RCRA-designated metals and PCBs.

Building Components

Samples of individual building components were collected in September 2010 using a hammer and chisel or, in the case of the exterior metal walls, a pair of tin snips. Figures presenting sample locations, and tables comprising analytical results are included in Appendix A. Sample locations were selected so that each significant building component would be represented in a composite sample in the same relative proportion that the component was identified in the building. Sample locations were also biased based on observable conditions (e.g., staining) to provide worst-case results.

Three composite samples were prepared. The first composite (Sample Number 103-BC-04-01) was from the concrete walls at the west end of the building and consisted of 4 aliquots. The second composite (Sample Number 103-BC-04-02) was from interior building components (e.g., drywall, window sills, etc.) and consisted of 8 aliquots. The third composite (Sample Number 103-BC-04-03) was from the exterior metal walls and was composed of 13 aliquots. These samples were initially analyzed for PCBs and total Resource Conservation and Recovery Act (RCRA) metals.

PCB results from the building components are presented in Table A.2 in Appendix A. PCBs were detected in all of the building composites at concentrations ranging from 41.7 micrograms per kilogram (µg/kg) to 626 µg/kg. The highest reading, which is well below the regulatory threshold of 50 milligrams per kilograms (mg/kg), was in the composite from the interior building materials.

Total RCRA metals results from the building composites are presented in Table A.2 in Appendix A. These results were compared to a concentration of 20 times the Toxicity Characteristic Leaching Procedure (TCLP) limit.[1] Based on that comparison, Sample Numbers 103-BC-04-02 and 103-BC-04-03 were re-analyzed for all of the RCRA metals except mercury via TCLP. The results are presented in Table A.3 in Appendix A and summarized in Table 1, below.

Table 1. Results of TCLP metals analyses of building components

Sample ID	Constituent*	TCLP Limit (mg/l)	Results (mg/l)
103-BC-04-02	Barium	100.0	0.138
	Cadmium	1.0	0.0107
	Chromium	5.0	0.0082
	Lead	5.0	0.674
103-BC-04-03	Barium	100.0	0.243
	Cadmium	1.0	0.711
	Lead	5.0	9.7

*Constituents not reported were not present above the minimum detection limit.

Additional sampling was performed on October 21, 2010 to evaluate whether the source of the lead in Sample Number 103-BC-04-03 was the structure itself or the surface coatings (i.e., paint) applied to the structure. Two composite samples were collected. The first, Sample Number 103-PCH-01-12, was

[1] The comparison between total concentrations and TCLP concentrations in a solid sample is a factor of 20. Thus, the maximum total concentration that could fail TCLP is 20 times the TCLP limit. Alternatively, the reported total concentration can be divided by 20 and compared directly to the TCLP limit. See, e.g., http://www.epa.gov/osw/hazard/testmethods/faq/faq_tclp.htm.

collected from paint which was scraped from locations immediately adjacent to the locations from which the original building composite (Sample Number 103-BC-04-03) was collected. The second composite, Sample Number 103-BC-01-01, was collected from the wall after the paint was removed. The results are provided in Appendix A and in Table 2, below. The majority of the lead detected in previous samples is clearly present in the thin layer of paint on the exterior surface of the building.

Table 2. Results of TCLP-lead analyses of exterior paint and walls

Sample ID	Constituent	TCLP Limit (mg/l)	TCLP Results (mg/l)
103-PCH-01-12	Lead	5.0	49.7
103-BC-01-01	Lead	5.0	3.75

In order to characterize the building as a whole for disposal purposes, a weight-based mathematical composite of the TCLP data from the various building components was prepared. Those calculations are provided in Table 3. Note that this mathematical composite does not include the inside building components (e.g., drywall and windows) because a then-undetermined portion of those components were expected to be removed and disposed of during pre-D&D actions. Similarly, the concrete slab was not included because it had not been determined whether Phase II removal actions would be performed at the same time as the Phase I removal. Omitting these nonhazardous building components from the evaluation adds conservatism to the results. Based on the calculations, the composite of building materials is characterized as a solid (i.e., nonhazardous) waste.

Table 3. Mathematical composite calculations

A Building Component	B Weight (lbs)	C TCLP Lead (mg/l)	D=BxC Product (lbs·mg/l)
Paint	264	49.7	13,121
Steel Walls	19,200	3.75	72,000
Concrete Walls	102,240	1.455	148,759
Summation	121,704		233,880
Composite TCLP Lead	233,880 / 121,704 = 1.92 mg/l		

Note that because TCLP analyses were not run on the concrete wall sample, the presumed TCLP lead concentration assigned to that component in the above calculation is the highest TCLP concentration possible based on the total lead concentration reported for the concrete walls (assuming 100% of the lead leaches from the sample). The actual concentration is likely much lower. Again, this yields a highly conservative result, especially given that the concrete walls account for over 80% of the total material.

Two disposition pathways were identified for the painted steel walls. As a recyclable scrap metal, they fell within the exemption at Ohio Administrative Code (OAC) Section 3745-51-06(A)(3)(b) and would not be subject to regulation as a hazardous waste regardless of their TCLP lead concentration. Alternatively, if the walls were managed as a solid waste with the other demolition debris from the X-103 Building, the composite results reflected in Table 3 demonstrate that the mixture of demolition debris is nonhazardous.

The latter alternative was selected and the exterior steel walls were managed with the other building materials from both the superstructure as sanitary waste.

1.3.1.2 Concrete Slab

Eight concrete core samples were collected from the X-103 Building slab on February 7, 2011, for laboratory determination of TCLP lead and mercury, PCBs, and radiological constituents. Based on the results which are included in Tables A.5 through A.7 in Appendix A, the slab was characterized as a sanitary waste.

1.3.1.3 Radiological Surveys

Other than the Ra-226 and Cs-137 sources discussed in Section 1.2, no processes involving radioactive substances are known to have occurred in the X-103 Building. A radiological survey of the building and surrounding area was conducted in 1995. An additional radiological survey was completed to confirm the data from 1995. The survey addressed total and removable alpha and total and removable beta/gamma radiation. Based on DOE Order 5400.5, the free-release criteria are an average of 5000 disintegrations per minute (dpm) per 100 square centimeters (cm^2) (and a maximum of 15,000 dpm/100 cm^2) for both total alpha emitters and total beta/gamma emitters and 1000 dpm/100 cm^2 for removable alpha and removable beta/gamma emitters. The results of the survey, summarized in the X-103 RAWP, met the free-release criteria.

Very few areas had survey results that were greater than the minimum detectable activity (MDA) and even those results were less than the administrative release limit (80% of 10 Code of Federal Regulations 835 values). The only exception was the exterior roof of the building. There were multiple hits above the MDA, leading to a 100% scan of the entire surface of the roof. Smears and static counts taken at highest scan rate locations showed all results less than the release limits.

An additional survey was performed of the vault area after the radiological sources were removed. That survey also indicated that the vault materials met free release limits.

1.4 PRE-DECONTAMINATION AND DECOMMISSIONING

Pre-D&D activities were conducted prior to the initiation of the DFF&O removal action described in this document. The pre-D&D activities were performed under DOE's independent authority under the Atomic Energy Act and were executed in accordance with applicable statutory and regulatory requirements including, but not limited to, the National Environmental Policy Act; Ohio's Hazardous Waste Laws and Rules, as found in Chapter 3734 of the Ohio Revised Code and Chapter 3745 of the OAC; OAC 3745-20 regarding asbestos; the requirements of the facility's current hazardous waste permit; and the 1989 Consent Decree regarding the investigation and remediation of environmental media.

Significant pre-D&D activities at the X-103 Building included the removal of equipment and fluorescent light fixtures and initial asbestos abatement activities. To facilitate the removal of asbestos-containing asphalt floor tiles which were installed before the interior walls were constructed, portions of the interior walls and doorways were also removed. As was anticipated in the EE/CA, the asbestos abatement continued after the X-103 RAWP received concurrence from the Ohio EPA.

1.5 REMOVAL ACTION PURPOSE AND OBJECTIVES

The X-103 Building removal action activities were divided into two phases. The Phase I activities included completion of the asbestos abatement activities, the removal of the two radiological sources, demolition of the X-103 Building superstructure, and recycling or disposal of the Phase I demolition materials. The Phase II activities included removal of the X-103 Building slab, removal of the underground piping and utilities, restoration of the site, demobilization, and disposal of the Phase II demolition materials.

The areal extent of the removal action was limited to the footprint of the X-103 Building, and within the nominal distance of two feet beyond the X-103 Building footprint.

The following objectives were developed for the removal activities:

- Reduce the potential exposure to on-site personnel from hazardous substances due to the structural deterioration of the X-103 Building; and
- Control removal of the X-103 Building to minimize or eliminate the potential health and environmental impacts created by the potential uncontrolled release of contaminated dust, equipment, and building materials from the structure as it deteriorates.
- Meet applicable and relevant or appropriate requirements (ARARs) to the extent practicable,
- Be protective of relevant receptors, and
- Be cost effective.

2. SUMMARY OF TASKS COMPLETED

The X-103 Building DFF&O removal action activities have been completed in accordance with the ARARs outlined in the Action Memorandum (DOE 2010b). Associated activities outlined in the X-103 Building ARARs were completed to meet the substantive requirements of the National Historic Preservation Act. Photographs of the X-103 Building before, during, and after demolition are provided in Appendix B.

2.1 PHASE I ACTIVITIES

2.1.1 Continuation of Pre-D&D Activities

Prior to beginning demolition of the X-103 Building superstructure and slab, activities initially started as, or initially planned as, pre-D&D activities were completed. This included completing the ongoing asbestos abatement activities and removing the two radiological sources from the vault.

<u>Asbestos Abatement</u>

All identified asbestos-containing material (ACM) was removed from the X-103 Building using a licensed asbestos abatement subcontractor. Engineering controls, including wetting methods, negative air units, and containment structures, were used to control air emissions during Class I and Class II abatement activities. Air monitoring was conducted to assure adequacy of engineering, administrative, and personal protective equipment (PPE) controls. ACM was placed into Department of Transportation (DOT)-approved containers for transportation to an approved local sanitary landfill for disposal.

<u>Source Removal</u>

The two radiological sources were removed from the X-103 Building on February 1, 2011. After opening the vault and raising each source, each source was verified and placed in a special foam capsule. That capsule was then sealed into a Hopewell shipping casket. The casket was cribbed inside a 55-gallon steel drum and the lid sealed with a conventional slip-ring seal. The sources were then transported to the

X-326 storage area pending final disposition. The Ra-226 source was shipped to Oak Ridge National Laboratory on March 23, 2011 for reuse at that location. The Cs-137 source was shipped to the Nevada National Security Site on July 28, 2011.

2.1.2 Demolition of Above-Grade Structure

Demolition activities were performed in accordance with X-103 Building ARARs. The X-103 Building above-grade structure was performed as a clean knockdown by positioning equipment and waste containers strategically to maximize demolition rates, minimize distance between debris and containers, and to prevent unsafe conditions.

Prior to demolition, pipes and drains in the slab were sealed and the hole in the slab resulting from removal of the radiological sources was covered with a steel plate that was secured to the slab with metal anchors. The above-grade demolition work was performed using long-reach 400-class excavators equipped with bucket, shear, and grapple attachments. Demolition was accomplished by the controlled sweeping of the excavator arm on the roof of the X-103 Building. Following the tearing of the roof, building walls were pushed by the excavator arms toward the building center from the outside walls. The excavators demolished the building walls and sheared the rubble to reduce it to a manageable size and to meet the disposal facility's waste acceptance criteria. The excavators cut and size-reduced the building to cause it to collapse on itself. The entire building was reduced to rubble and loaded into DOT-approved bulk waste haulers for transportation to an appropriately permitted and licensed local solid waste disposal facility. No hazardous waste was generated, and no hazardous waste piles were created during the removal activities.

During Phase I, a water mist was employed to minimize fugitive dust emissions. A sediment fence was installed to control sediment migration from the work area. Sedimentation was also controlled by minimizing the volume of water used for dust suppression.

2.2 PHASE II ACTIVITIES

2.2.1 Removal of Slab

The X-103 Building slab was demolished, followed by the primary foundations, in accordance with the X-103 RAWP and X-103 Building ARARs. An excavator equipped with a power chisel was used to size reduce the concrete. Once the materials were size-reduced, the debris was removed using an excavator equipped with an excavation bucket. Concrete and asphalt driveways located on the northern and eastern boundaries of the X-103 Building were also broken and removed.

Water was sprayed as necessary during Phase II demolition activities to minimize the release of fugitive dust or other contaminants. Sediment and erosion controls were installed to control runoff.

Underground piping and utilities that were located beneath the footprint of the X-103 Building were removed and terminated (i.e., capped and/or plugged) at a nominal distance of two feet outside of the X-103 Building footprint.

Slab removal operations provided an opportunity to better observe the subsurface structure of the vault. The radiological sources had been stored below grade and raised for use. This required a nominal four-feet-square hole through the slab. During slab removal, a cylindrical hole was observed to extend below the slab. That hole was formed by an approximate 30-inch diameter pipe that was covered with a tar-like material. Based on visual observation, the pipe was suspected of containing asbestos.

Samples of both the pipe and the tar-like coating were collected and submitted for laboratory analyses for asbestos and PCBs, respectively. The laboratory results indicated that the pipe did contain asbestos but the coating did not contain PCBs. Based on that data, the pipe was removed on March 23, 2011 and managed as asbestos waste.

2.2.2 Removal of the Underground Piping and Utilities

Underground piping and utilities that were located beneath the footprint of the X-103 Building were removed. The piping and utilities included water line, sanitary sewer, electrical and communication lines, and two concrete thrust blocks. The sewer system piping (both sanitary and storm) was grouted and sealed at the locations which extended beyond the 2 ft. nominal distance beyond the building footprint. A detailed listing of underground piping and utilities removed during Phase II activities is provided in Table 4.

Table 4. Summary of underground piping and utilities and linear footage

Utility / Piping	Type	Linear Feet (lf)	Disposition Location
Water line	6 inch ductile iron	16	Pike County Landfill
Sanitary sewer	4 inch cast iron	130	Pike County Landfill
Storm sewer	2 inch cast iron	71	Pike County Landfill
Electrical and communication utilities	4 inch polyvinyl chloride conduit	6	Pike County Landfill

Water was sprayed as necessary during Phase II demolition activities to minimize the release of fugitive dust or other contaminants. Sediment and erosion controls were installed to control runoff.

Based on process knowledge and characterization data, the X-103 Building demolition debris was either recycled or managed as sanitary waste. To demonstrate compliance with the hazardous waste mixture rule, a mathematical composite of the test results from all of the components of the X-103 Building superstructure was prepared. That mathematical composite indicated the entire building, including the exterior steel walls, met the Toxicity Characteristic Leaching Procedure criteria and could be managed as a sanitary waste. Analytical results of the concrete slab indicated it was also a sanitary waste. Structural steel from the building was characterized as a solid waste. All wastes were shipped to Pike County Landfill for disposal. None of the resultant wastes from the super structure were recycled.

2.2.3 Site Restoration

Following completion of the Phase II demolition activities, the site was re-contoured to promote natural drainage and prevent pooling of stormwater. The site was then seeded and mulched with straw to promote rapid growth of grass cover.

2.2.4 Equipment Decontamination and Demobilization

Demolition equipment was decontaminated, as necessary, using dry techniques. The resultant wastes were managed as sanitary wastes. The demolition equipment and crews were then demobilized from the site.

2.3 POST-REMOVAL STATE

At the completion of this DFF&O removal action, the X-103 Building superstructure and slab have been removed. Underground piping and utilities that were located beneath the footprint of the X-103 Building were removed and terminated (i.e., capped and/or plugged) at a nominal distance of two feet outside of the X-103 Building footprint. The site has been re-graded and seeded. All wastes have been removed from the site.

3. WASTE MANAGEMENT AND TRANSPORTATION ACTIVITIES

This section describes the management, on-site staging, transport and disposal of wastes generated during the X-103 Building DFF&O removal action. Wastes were staged on-site at the X-633-2C Recirculating Cooling Water (RCW) Complex and/or transported and disposed off-site in accordance with the X-103 Building RAWP and ARARs. Facility characterization was conducted to assure waste streams were compliant with applicable waste acceptance criteria.

During Phase I, demolition waste from the X-103 Building superstructure was disposed as solid waste. After the superstructure was completely removed, the concrete rubble from the slab was taken to the X-633 RCW-2C basin and staged on-site as clean hard fill. Personal protective equipment used during the removal action (e.g., gloves, earplugs) and wastes generated during dry decontamination activities were disposed as sanitary wastes. The quantities and types of solid waste generated during this DFF&O removal action and waste disposal locations are provided in Table 5.

Table 5. Summary of removal action solid waste

Waste Material	Type	Total Volume (cu yd)	Disposition Location
Phase I demolition debris	Solid waste	1450	Pike County Landfill
Phase II concrete	Clean hard fill	10,000	PORTS clean hard fill stockpile
Phase II utilities and piping	Solid waste	*223 lf	Pike County Landfill

*The total linear footage provided for Phase II underground piping and utilities.

Additional waste streams were also generated and disposed offsite. This information is provided in Appendix C.

4. PROJECT SCHEDULE

A project schedule for the DFF&O removal action activities presented in this RACR is provided in Table 6.

Table 6. Schedule for the X-103 Building DFF&O removal action

Activity	Start Date	Completion Date
Mobilization*	November 8, 2010	December 28, 2010
Asbestos abatement (if required)	December 6, 2010	February 24, 2011
Radiological source removal (if required)	January 22, 2011	February 1, 2011
Demolition	March 7, 2011	March 23, 2011
Dispose or otherwise remove all staged wastes from the project area*	June 13, 2011	June 16, 2011
Site restoration	June 21, 2011	June 22, 2011
Demobilization	June 23, 2011	June 28, 2011
Removal Action Completion Report*	June 22, 2011	Due by November 25, 2011

*These activities are Milestones within the meaning of the DFF&O.

5. REFERENCES

Bechtel Jacobs 2001. *Due Diligence for the Return of Portsmouth Leased Facilities from the United States Enrichment Corporation to the U. S. Department of Energy*. BJC/PORTS-251. June.

DOE 2010a. *Engineering Evaluation/Cost Analysis for Group 1 Buildings X-103, X-334, and X-344B at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio.* DOE/PPPO/03-0145&D2.

DOE 2010b. *Action Memorandum for the Group 1 Buildings X-103, X-334, and X-344B at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio*. DOE/PPPO/03-0177&D3.

DOE 2010c. *Sampling and Analysis Plan for the X-103 Auxiliary Office Building at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio.* DOE/PPPO/03-0138&D3.

DOE 2011. *Removal Action Work Plan for the X-103 Auxiliary Office Building at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio,* DOE/PPPO/03-0165&D1.

Ohio EPA 2010. *Directors Final Findings and Orders for Removal Action and Remedial Investigation and Feasibility Study and Remedial Design and Remedial Action for the DOE Portsmouth Gaseous Diffusion Plant (Decontamination and Decommissioning Project).* April.

TPMC 2006. *Facility Condition Survey of the Portsmouth Gaseous Diffusion Plant Facilities, Piketon, Ohio. TPMC/PORTS-59/R1.* August.

APPENDIX A

X-103 ANALYTICAL DATA

Notes to Appendix A

Data Qualifiers (Flags)

Data qualifiers provide information from the laboratory that assists in interpreting the reported qualitative and quantitative data. The qualifiers applicable to this data set are:

U – Indicates that the compound was analyzed for but not detected. U-qualified data was not included in the data summaries in this Appendix.

J – Indicates an estimated value. This flag is used in cases where a target analyte (constituent) is detected at a level less than the lower quantification level. When the J-flag is reported, the lower quantification limit is also reported in parentheses following the qualifier.

D – Indicates the compound was identified in an analysis at a secondary dilution factor.

Sample IDs

The third field in the Sample ID indicates the type of analysis requested at the time the sample was submitted to the laboratory. For example, 103-PCH-02-01 indicates the first (-01) paint chip sample (PCH) collected from the X-103 Building (103) to be analyzed for PCBs (-02). Similarly, 103-BC-04-02 indicates this is the second (-02) building component (BC) sample from the X-103 Building with requested analysis for total RCRA metals (-04). To conserve space and because multiple analyses may be requested of the same sample, the third field in the Sample ID is omitted from the drawings in this Appendix.

Table A.1
X-103 paint chip data

Sample ID	Date Collected	Constituent	Results	Units	Flag
103-PCH-01-01	7/28/2010	Lead	16.8	mg/kg	
103-PCH-01-02	7/28/2010	Lead	506	mg/kg	
103-PCH-01-03	7/28/2010	Lead	29.7	mg/kg	
103-PCH-01-04	7/28/2010	Lead	39.8	mg/kg	
103-PCH-01-05	7/28/2010	Lead	5.08	mg/kg	
103-PCH-01-06	7/28/2010	Lead	31.4	mg/kg	
103-PCH-01-07	7/28/2010	Lead	34.6	mg/kg	
103-PCH-01-08	7/28/2010	Lead	4.45	mg/kg	
103-PCH-01-09	7/28/2010	Lead	1.31	mg/kg	
103-PCH-01-10	7/28/2010	Lead	4.59	mg/kg	
103-PCH-01-11	7/28/2010	Lead	31.2	mg/kg	
103-PCH-02-01	7/28/2010	PCB-1016	1290	µg/kg	
103-PCH-02-02	7/28/2010	PCB-1016	1300	µg/kg	
103-PCH-02-03	7/28/2010	PCB-1016	1010	µg/kg	
103-PCH-02-04	7/28/2010	PCB-1016	1260	µg/kg	
103-PCH-02-05	7/28/2010	PCB-1016	1950	µg/kg	D
103-PCH-02-07	7/28/2010	PCB-1016	1520	µg/kg	
103-PCH-02-10	7/28/2010	PCB-1016	284	µg/kg	
103-PCH-02-06	7/28/2010	PCB-1242	2040	µg/kg	D
103-PCH-02-08	7/28/2010	PCB-1242	2150	µg/kg	D
103-PCH-02-09	7/28/2010	PCB-1242	2300	µg/kg	D
103-PCH-02-11	7/28/2010	PCB-1242	1390	µg/kg	
103-PCH-02-01	7/28/2010	PCB-1254	762	µg/kg	
103-PCH-02-02	7/28/2010	PCB-1254	1330	µg/kg	
103-PCH-02-03	7/28/2010	PCB-1254	423	µg/kg	
103-PCH-02-04	7/28/2010	PCB-1254	596	µg/kg	
103-PCH-02-05	7/28/2010	PCB-1254	1110	µg/kg	D
103-PCH-02-06	7/28/2010	PCB-1254	1680	µg/kg	D
103-PCH-02-07	7/28/2010	PCB-1254	1050	µg/kg	
103-PCH-02-08	7/28/2010	PCB-1254	885	µg/kg	D
103-PCH-02-09	7/28/2010	PCB-1254	880	µg/kg	D
103-PCH-02-10	7/28/2010	PCB-1254	146	µg/kg	J (177)
103-PCH-02-11	7/28/2010	PCB-1254	875	µg/kg	
103-PCH-02-01	7/28/2010	PCB-1260	1390	µg/kg	
103-PCH-02-02	7/28/2010	PCB-1260	1150	µg/kg	
103-PCH-02-03	7/28/2010	PCB-1260	295	µg/kg	
103-PCH-02-04	7/28/2010	PCB-1260	601	µg/kg	

Table A.1
X-103 paint chip data (continued)

Sample ID	Date Collected	Constituent	Results	Units	Flag
103-PCH-02-05	7/28/2010	PCB-1260	762	µg/kg	D
103-PCH-02-06	7/28/2010	PCB-1260	1330	µg/kg	D
103-PCH-02-07	7/28/2010	PCB-1260	907	µg/kg	
103-PCH-02-08	7/28/2010	PCB-1260	472	µg/kg	D
103-PCH-02-09	7/28/2010	PCB-1260	613	µg/kg	D
103-PCH-02-10	7/28/2010	PCB-1260	102	µg/kg	J
103-PCH-02-11	7/28/2010	PCB-1260	454	µg/kg	
103-PCH-02-01	7/28/2010	PCB-Total	3440	µg/kg	
103-PCH-02-02	7/28/2010	PCB-Total	3780	µg/kg	
103-PCH-02-03	7/28/2010	PCB-Total	1730	µg/kg	
103-PCH-02-04	7/28/2010	PCB-Total	2450	µg/kg	
103-PCH-02-05	7/28/2010	PCB-Total	3830	µg/kg	D
103-PCH-02-06	7/28/2010	PCB-Total	5050	µg/kg	D
103-PCH-02-07	7/28/2010	PCB-Total	3480	µg/kg	
103-PCH-02-08	7/28/2010	PCB-Total	3510	µg/kg	D
103-PCH-02-09	7/28/2010	PCB-Total	3790	µg/kg	D
103-PCH-02-10	7/28/2010	PCB-Total	532	µg/kg	
103-PCH-02-11	7/28/2010	PCB-Total	2720	µg/kg	

Table A.2
X-103 building components
PCBs and total metals

Sample ID	Date Collected	Constituent	Results	Units	Flag
103-BC-02-01	9/22/2010	PCB-1016	91.1	µg/kg	
103-BC-02-01	9/22/2010	PCB-1254	73.2	µg/kg	
103-BC-02-01	9/22/2010	PCB-1260	58.6	µg/kg	
103-BC-02-01	9/22/2010	PCB-Total	228	µg/kg	
103-BC-02-02	9/22/2010	PCB-1016	155	µg/kg	
103-BC-02-02	9/22/2010	PCB-1254	304	µg/kg	
103-BC-02-02	9/22/2010	PCB-1260	167	µg/kg	
103-BC-02-02	9/22/2010	PCB-Total	626	µg/kg	
103-BC-02-03	9/22/2010	PCB-1254	22	µg/kg	J (47.2)
103-BC-02-03	9/22/2010	PCB-1260	19.6	µg/kg	J (47.2)
103-BC-02-03	9/22/2010	PCB-Total	41.7	µg/kg	J (47.2)
103-BC-04-01	9/22/2010	Arsenic	5.19	mg/kg	
103-BC-04-01	9/22/2010	Barium	58.6	mg/kg	
103-BC-04-01	9/22/2010	Cadmium	0.168	mg/kg	
103-BC-04-01	9/22/2010	Chromium	6.37	mg/kg	
103-BC-04-01	9/22/2010	Lead	29.1	mg/kg	
103-BC-04-01	9/22/2010	Mercury	0.32	mg/kg	
103-BC-04-02	9/22/2010	Arsenic	0.58	mg/kg	
103-BC-04-02	9/22/2010	Barium	744	mg/kg	
103-BC-04-02	9/22/2010	Cadmium	3.57	mg/kg	
103-BC-04-02	9/22/2010	Chromium	81.4	mg/kg	
103-BC-04-02	9/22/2010	Lead	4320	mg/kg	
103-BC-04-02	9/22/2010	Mercury	0.904	mg/kg	
103-BC-04-02	9/22/2010	Selenium	0.236	mg/kg	J (0.347)
103-BC-04-02	9/22/2010	Silver	0.16	mg/kg	
103-BC-04-03	9/22/2010	Arsenic	864	mg/kg	
103-BC-04-03	9/22/2010	Barium	13.1	mg/kg	
103-BC-04-03	9/22/2010	Cadmium	30.1	mg/kg	
103-BC-04-03	9/22/2010	Chromium	248	mg/kg	
103-BC-04-03	9/22/2010	Lead	1870	mg/kg	
103-BC-04-03	9/22/2010	Selenium	2.66	mg/kg	
103-BC-04-03	9/22/2010	Silver	1.38	mg/kg	

Table A.3
X-103 building components
TCLP metals

Sample ID	Date Collected	Constituent	TCLP Limit	Results	Units	Flag
103-BC-04-02	9/22/2010	Barium	100.0	0.138	mg/L	
103-BC-04-02	9/22/2010	Cadmium	1.0	0.0107	mg/L	J (0.018)
103-BC-04-02	9/22/2010	Chromium	5.0	0.0082	mg/L	J (0.03)
103-BC-04-02	9/22/2010	Lead	5.0	0.674	mg/L	
103-BC-04-03	9/22/2010	Barium	100.0	0.243	mg/L	
103-BC-04-03	9/22/2010	Cadmium	1.0	0.711	mg/L	
103-BC-04-03	9/22/2010	Lead	5.0	9.7	mg/L	

Table A.4
X-103 building exterior wall and paint
TCLP lead

Sample ID	Date Collected	Constituent	TCLP Limit	Results	Units	Flag
103-PCH-01-12	10/21/2010	Lead	5.0	49.7	mg/L	
103-BC-01-01	10/21/2010	Lead	5.0	3.75	mg/L	

Table A.5
X-103 concrete core samples
PCBs

Sample ID	Date Collected	Constituent	Results	Units	Flag
103-CCE-02-01	2/7/11	Total PCBs	37.1	µg/kg	U
103-CCE-02-02	2/7/11	Total PCBs	42	µg/kg	J
103-CCE-02-03	2/7/11	Total PCBs	62.4	µg/kg	U
103-CCE-02-04	2/7/11	Total PCBs	39.5	µg/kg	U
103-CCE-02-05	2/7/11	Total PCBs	64	µg/kg	U
103-CCE-02-06	2/7/11	Total PCBs	39.3	µg/kg	U
103-CCE-02-07	2/7/11	Total PCBs	71.9	µg/kg	U
103-CCE-02-08	2/7/11	Total PCBs	40.3	µg/kg	U

Table A.6
X-103 concrete core samples
TCLP lead and mercury

Sample ID	Date Collected	Constituent	Results	Units	Flag
103-CCE-04-01	2/7/11	Lead	0.05	mg/L	U
		Mercury	0	mg/L	U
103-CCE-04-02	2/7/11	Lead	0.05	mg/L	U
		Mercury	0	mg/L	U
103-CCE-04-03	2/7/11	Lead	0.05	mg/L	U
		Mercury	0	mg/L	U
103-CCE-04-04	2/7/11	Lead	0.05	mg/L	U
		Mercury	0	mg/L	U
103-CCE-04-05	2/7/11	Lead	0.05	mg/L	U
		Mercury	0	mg/L	U
103-CCE-04-06	2/7/11	Lead	0.05	mg/L	U
		Mercury	0	mg/L	U
103-CCE-04-07	2/7/11	Lead	0.05	mg/L	U
		Mercury	0	mg/L	U
103-CCE-04-08	2/7/11	Lead	0.05	mg/L	U
		Mercury	0	mg/L	U

Note: Although U-flagged data is not normally reported, they are included here to make it clear that no TCLP lead or mercury were detected in any of the samples.

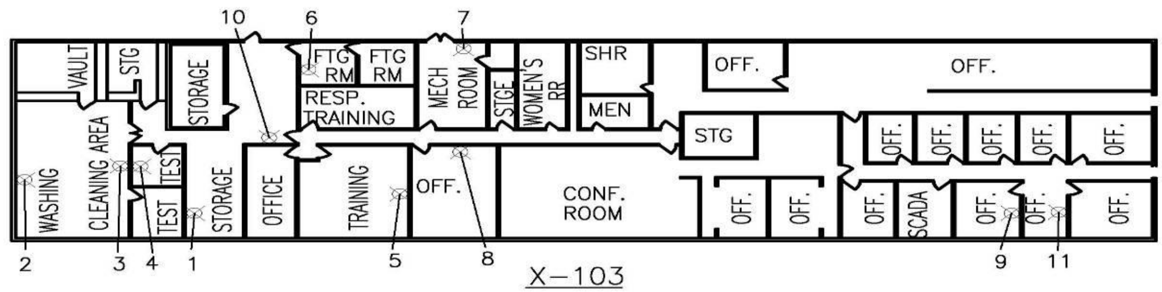
Table A.7
X-103 concrete core samples
Radiological constituents

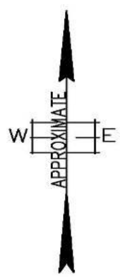
Sample ID	Date Collected	Constituent	Units	Results	Flag	TPU
103-CCE-03-01	2/7/11	Uranium-235/236	%	0.63		0
		Uranium	µg/g	2.51		0.4
		Uranium-233/234	pCi/g	0.912		0.15
		Uranium-235/236	pCi/g	0.0342	J	0.01
		Uranium-238	pCi/g	0.84		0.14
103-CCE-03-02	2/7/11	Uranium-235/236	%	0.604		0
		Uranium	µg/g	3.16		0.5
		Uranium-233/234	pCi/g	1.03		0.16
		Uranium-235/236	pCi/g	0.0413	J	0.02
		Uranium-238	pCi/g	1.06		0.17
103-CCE-03-03	2/7/11	Uranium-235/236	%	0.457	J	0
		Uranium	µg/g	2.63		0.42
		Uranium-233/234	pCi/g	1.01		0.16
		Uranium-235/236	pCi/g	0.0259	J	0.01
		Uranium-238	pCi/g	0.879		0.14
103-CCE-03-04	2/7/11	Uranium-235/236	%	0.915		0
		Uranium	µg/g	3.11		0.5
		Uranium-233/234	pCi/g	1.11		0.18
		Uranium-235/236	pCi/g	0.0615	J	0.02
		Uranium-238	pCi/g	1.04		0.17
103-CCE-03-05	2/7/11	Uranium-235/236	%	0.545		0
		Uranium	µg/g	2.72		0.43
		Uranium-233/234	pCi/g	0.819		0.13
		Uranium-235/236	pCi/g	0.0321	J	0.01
		Uranium-238	pCi/g	0.91		0.15

Table A.7 (continued)
X-103 concrete core samples
Radiological constituents

Sample ID	Date Collected	Constituent	Units	Results	Flag	TPU
103-CCE-03-06	2/7/11	Uranium-235/236	%	0.677		0
		Uranium	µg/g	3.91		0.6
		Uranium-233/234	pCi/g	1.38		0.21
		Uranium-235/236	pCi/g	0.0573	J	0.02
		Uranium-238	pCi/g	1.31		0.2
103-CCE-03-07	2/7/11	Uranium-235/236	%	0.743		0
		Uranium	µg/g	2.61		0.41
		Uranium-233/234	pCi/g	0.905		0.14
		Uranium-235/236	pCi/g	0.0419	J	0.02
		Uranium-238	pCi/g	0.871		0.14
103-CCE-03-08	2/7/11	Uranium-235/236	%	0.394	J	0
		Uranium	µg/g	3.75		0.58
		Uranium-233/234	pCi/g	1.22		0.19
		Uranium-235/236	pCi/g	0.032	J	0.01
		Uranium-238	pCi/g	1.26		0.2

X-103 SAMPLE POINTS					
POINT NO.	SAMPLE NO.	PLANT COORDS.		LAT/LONG.	
1	103-PCH-01	N8356.83	E8827.93	39°00'37.22"	82°59'48.18"
2	103-PCH-02	N8365.16	E8798.16	39°00'37.30"	82°59'48.56"
3	103-PCH-03	N8368.60	E8814.90	39°00'37.34"	82°59'48.34"
4	103-PCH-04	N8368.47	E8818.47	39°00'37.34"	82°59'48.30"
5	103-PCH-05	N8361.59	E8863.91	39°00'37.27"	82°59'47.72"
6	103-PCH-06	N8392.53	E8847.93	39°00'37.57"	82°59'47.93"
7	103-PCH-07	N8397.76	E8875.08	39°00'37.63"	82°59'48.58"
8	103-PCH-08	N8372.08	E8874.52	39°00'37.37"	82°59'47.59"
9	103-PCH-09	N8356.83	E8971.09	39°00'37.22"	82°59'46.37"
10	103-PCH-10	N8375.61	E8841.04	39°00'37.41"	82°59'48.01"
11	103-PCH-11	N8357.09	E8979.35	39°00'37.23"	82°59'46.26"





U.S. DEPARTMENT OF ENERGY
PORTSMOUTH/PADUCAH PROJECT OFFICE

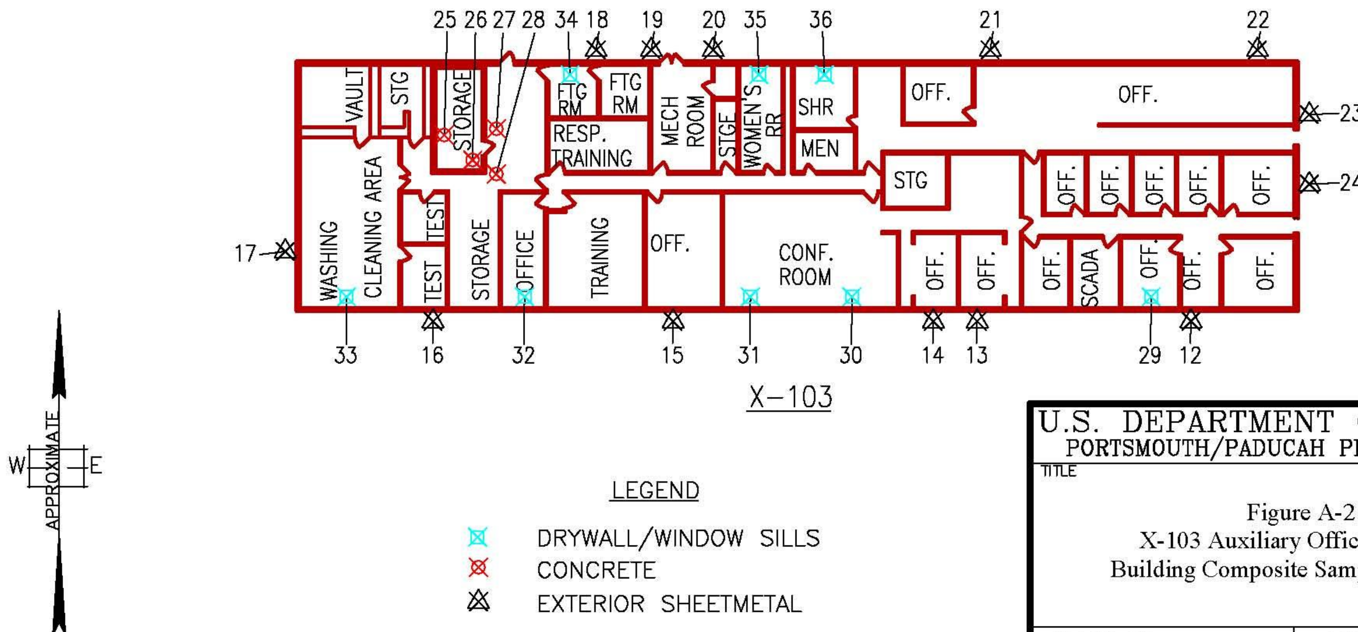
TITLE

Figure A-1
X-103 Auxiliary Office Building
Paint Chip Sample Locations

CLASS NO.	BLDG. NO.	
	X-103	

	X-103 SAMPLE POINTS				
POINT NO.	SAMPLE NO.	PLANT COORDS.		LAT/LONG.	
12	103-BC-03	N8347.95	E8974.99	39°00'37.14"	82°59'46.32"
13	103-BC-03	N8347.95	E8932.19	39°00'37.14"	82°59'46.86"
14	103-BC-03	N8347.95	E8923.41	39°00'37.14"	82°59'46.97"
15	103-BC-03	N8347.95	E8871.30	39°00'37.14"	82°59'47.63"
16	103-BC-03	N8347.95	E8823.24	39°00'37.14"	82°59'48.24"
17	103-BC-03	N8361.92	E8793.66	39°00'37.27"	82°59'48.61"
18	103-BC-03	N8402.29	E8855.89	39°00'37.67"	82°59'47.83"
19	103-BC-03	N8402.29	E8866.94	39°00'37.67"	82°59'47.69"
20	103-BC-03	N8402.29	E8879.32	39°00'37.67"	82°59'47.53"
21	103-BC-03	N8402.29	E8934.79	39°00'37.67"	82°59'46.83"
22	103-BC-03	N8402.29	E8988.30	39°00'37.67"	82°59'46.15"
23	103-BC-03	N8389.31	E8998.69	39°00'37.54"	82°59'46.02"
24	103-BC-03	N8375.39	E8998.69	39°00'37.41"	82°59'46.02"

	X-103 SAMPLE POINTS				
POINT NO.	SAMPLE NO.	PLANT COORDS.		LAT/LONG.	
25	103-BC-01	N8385.22	E8825.49	39°00'37.50"	82°59'48.21"
26	103-BC-01	N8380.23	E8831.18	39°00'37.45"	82°59'48.14"
27	103-BC-01	N8386.49	E8835.91	39°00'37.52"	82°59'48.08"
28	103-BC-01	N8377.40	E8835.91	39°00'37.43"	82°59'48.08"
29	103-BC-02	N8352.84	E8967.01	39°00'37.18"	82°59'46.42"
30	103-BC-02	N8352.84	E8907.10	39°00'37.18"	82°59'47.18"
31	103-BC-02	N8352.84	E8886.76	39°00'37.18"	82°59'47.43"
32	103-BC-02	N8352.84	E8841.57	39°00'37.18"	82°59'48.01"
33	103-BC-02	N8352.84	E8805.94	39°00'37.18"	82°59'48.46"
34	103-BC-02	N8397.33	N8850.67	39°00'37.62"	82°59'47.89"
35	103-BC-02	N8397.33	E8888.48	39°00'37.62"	82°59'47.41"
36	103-BC-02	N8397.33	E8901.62	39°00'37.62"	82°59'47.25"



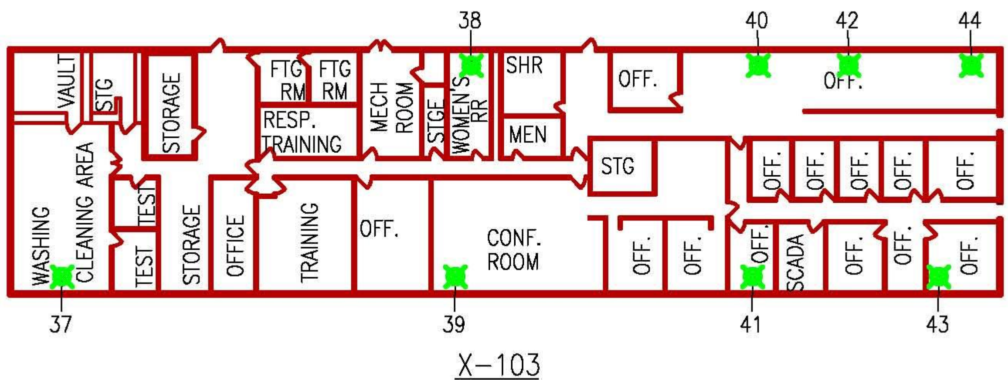
U.S. DEPARTMENT OF ENERGY
PORTSMOUTH/PADUCAH PROJECT OFFICE

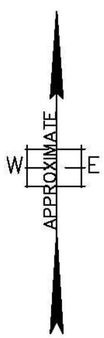
TITLE

Figure A-2
X-103 Auxiliary Office Building
Building Composite Sample Locations

CLASS NO.	BLDG. NO.	
	X-103	

X-103 SLAB SAMPLES					
POINT NO.	SAMPLE NO.	PLANT COORDS.		LAT/LONG.	
37	103-CCE-01	N8353.81	E8806.68	39°00'37.19"	82°59'48.45"
38	103-CCE-02	N8396.46	E8889.32	39°00'37.61"	82°59'47.40"
39	103-CCE-03	N8353.81	E8886.11	39°00'37.19"	82°59'47.44"
40	103-CCE-04	N8396.46	E8947.29	39°00'37.61"	82°59'46.67"
41	103-CCE-05	N8353.81	E8946.16	39°00'37.19"	82°59'46.68"
42	103-CCE-06	N8396.46	E8965.56	39°00'37.61"	82°59'46.44"
43	103-CCE-07	N8353.81	E8983.75	39°00'37.19"	82°59'46.21"
44	103-CCE-08	N8396.46	E8990.32	39°00'37.61"	82°59'46.12"





LEGEND

CONCRETE CORE SAMPLE LOCATION

U.S. DEPARTMENT OF ENERGY
PORTSMOUTH/PADUCAH PROJECT OFFICE

TITLE

Figure A-3
X-103 Auxiliary Office Building
Concrete Core Sample Locations

CLASS NO.	BLDG. NO.	
	X-103	

APPENDIX B

PHOTOGRAPHS

Photo 1. Front of the X-103 building facing west

Photo 2. North side of the X-103 Building

Photo 3. Interior of the X-103 Building

Photo 4. Demolition of the X-103 Building superstructure

Photo 5. X-103 Building superstructure nearly demolished

Photo 6. X-103 Building site as it currently exist.

APPENDIX C

WASTE SHIPMENT SUMMARY

Table C.1. X-103 Non-Rad TSCA

Container ID	Gross Wt (kg)	Vol (ft3)	Vol (m3)	Gross Wt (lbs)	Waste Wt (lbs)	Origin	Phys Form	ASB Y/N	TSCA Y/N	RCRA Y/N	RAD Y/N	Profile Name	Waste Category	Origin Dt	Active Y/N	Disposition Site	Disposal Dt
11-001215	312.98	10.00	0.28	690.00	690.00	X-103	LIQUID	N	Y	N	N	Non-Rad TSCA Waste	TSCA WASTE	17-Nov-10	N	ENV/PRO/SERVICES	08-Feb-11
11-001216	312.98	10.00	0.28	690.00	690.00	X-103	LIQUID	N	Y	N	N	Non-Rad TSCA Waste	TSCA WASTE	17-Nov-10	N	ENV/PRO/SERVICES	08-Feb-11
11-001217	312.98	10.00	0.28	690.00	690.00	X-103	LIQUID	N	Y	N	N	Non-Rad TSCA Waste	TSCA WASTE	17-Nov-10	N	ENV/PRO/SERVICES	08-Feb-11
Totals	**938.93**	**30.00**	**0.85**	**2,070.00**	**2,070.00**												

Table C.2. X-103 Pike Landfill Sanitary Waste

Container ID	Gross Wt (kg)	Vol (ft3)	Vol (m3)	Gross Wt (lbs)	Waste Wt (lbs)	Origin	Phys Form	ASB Y/N	TSCA Y/N	RCRA Y/N	RAD Y/N	Profile Name	Waste Category	Origin Dt	Active Y/N	Disposition Site	Disposal Dt
10-002840	111,428.93	4,860.00	137.62	245,660.00	35,720.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	16-Nov-10	N	PIKE LANDFILL	13-Dec-10
11-000441	237,976.01	7,290.00	206.43	524,650.00	220,450.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	15-Mar-11	N	PIKE LANDFILL	17-Mar-11
11-000821	85,528.94	3,240.00	91.75	188,560.00	49,200.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	14-Mar-11	N	PIKE LANDFILL	16-Mar-11
11-000822	46,756.06	2,160.00	61.17	103,080.00	31,840.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	14-Mar-11	N	PIKE LANDFILL	14-Mar-11
11-000823	27,188.19	1,080.00	30.58	59,940.00	23,980.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	15-Mar-11	N	PIKE LANDFILL	16-Mar-11
11-000824	101,658.60	3,240.00	91.75	224,120.00	87,200.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	16-Mar-11	N	PIKE LANDFILL	23-Mar-11
11-002039	92,219.39	2,430.00	68.81	203,310.00	100,130.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	17-Mar-01	N	PIKE LANDFILL	17-Mar-11
11-002075	75,776.75	2,430.00	68.81	167,060.00	55,600.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	20-Apr-11	N	PIKE LANDFILL	20-May-11
11-002200	23,459.68	810.00	22.94	51,720.00	14,880.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	11-May-11	N	PIKE LANDFILL	19-May-11
11-002201	25,373.83	810.00	22.94	55,940.00	17,960.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	11-May-11	N	PIKE LANDFILL	19-May-11
11-002204	23,831.62	810.00	22.94	52,540.00	19,160.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	12-May-11	N	PIKE LANDFILL	23-May-11
11-002205	25,927.21	810.00	22.94	57,160.00	21,040.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	16-May-11	N	PIKE LANDFILL	20-May-11
11-002206	25,537.12	810.00	22.94	56,300.00	22,180.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	16-May-11	N	PIKE LANDFILL	23-May-11
11-002207	25,836.49	810.00	22.94	56,960.00	20,000.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	16-May-11	N	PIKE LANDFILL	19-May-11
11-002208	27,124.68	810.00	22.94	59,800.00	26,800.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	12-May-11	N	PIKE LANDFILL	12-May-11
11-002511	7,511.45	810.00	22.94	16,560.00	10,760.00	X-103	SOLID	N	N	N	N	Non-Rad, Non-RCRA Demolition Debris	SANITARY/ INDUSTRIAL WASTE	15-Jun-11	N	PIKE LANDFILL	17-Jun-11

Table C.2. X-103 Pike Landfill Sanitary Waste

Container ID	Gross Wt (kg)	Vol (ft3)	Vol (m3)	Gross Wt (lbs)	Waste Wt (lbs)	Origin	Phys Form	ASB Y/N	TSCA Y/N	RCRA Y/N	RAD Y/N	Profile Name	Waste Category	Origin Dt	Active Y/N	Disposition Site	Disposal Dt
10-002841	19,377.37	810.00	22.94	42,720.00	8,380.00	X-103	SOLID	Y	N	N	N	Non-Rad, Non-RCRA Friable ACM	ASBESTOS	24-Feb-11	N	PIKE LANDFILL	02-Mar-11
11-001553	58,885.06	2,430.00	68.81	129,820.00	27,260.00	X-103	SOLID	Y	N	N	N	Non-Friable Asbestos Containing Material	ASBESTOS	14-Feb-11	N	PIKE LANDFILL	16-Feb-11
11-001554	19,722.09	1,080.00	30.58	43,480.00	7,280.00	X-103	SOLID	Y	N	N	N	Non-Rad, Non-RCRA Friable ACM	ASBESTOS	14-Feb-11	N	PIKE LANDFILL	16-Feb-11
11-001555	38,228.57	1,620.00	45.87	84,280.00	15,540.00	X-103	SOLID	Y	N	N	N	Non-Friable Asbestos Containing Material	ASBESTOS	15-Feb-11	N	PIKE LANDFILL	24-Feb-11
Totals	**1,099,348.01**	**39,150.00**	**1,108.63**	**2,423,660.00**	**815,360.00**												

Table C.3. X-103 Recyclable/Universal Material

Container ID	Gross Wt (kg)	Vol (ft3)	Vol (m3)	Gross Wt (lbs)	Waste Wt (lbs)	Origin	Phys Form	ASB Y/N	TSCA Y/N	RCRA Y/N	RAD Y/N	Profile Name	Waste Category	Origin Dt	Active Y/N	Disposition Site
11-001210	44.45	2.01	0.06	98.00	83.00	X-103	SOLID	N	N	N	N	RECYCLABLE BATTERIES	UNIVERSAL	25-Oct-10	N	USA LAMP & BALLAST RECY.
11-001211	47.17	5.43	0.15	104.00	69.00	X-103	SOLID	N	N	N	N	RECYCLABLE CIRCUIT BOARDS	RECYCLE	02-Nov-10	N	USA LAMP & BALLAST RECY.
11-001212	5.44	1.10	0.03	12.00	0.50	X-103	SOLID	N	N	N	N	RECYCLABLE MERCURY	RECYCLE	23-Nov-10	N	USA LAMP & BALLAST RECY.
11-001213	6.35	1.10	0.03	14.00	2.00	X-103	SOLID	N	N	N	N	RECYCLABLE LIGHTS AND LAMPS	UNIVERSAL	23-Nov-10	N	USA LAMP & BALLAST RECY.
11-000532	235.86	7.35	0.21	520.00	458.00	X-103	SOLID	N	N	N	N	RECYCLABLE METALS	RECYCLE	28-Mar-11	N	Cherrington Metals
11-001214	311.16	9.57	0.27	686.00	624.00	X-103	SOLID	N	Y	N	N	Non-Rad TSCA Waste	TSCA WASTE	24-Nov-10	N	USA LAMP & BALLAST RECY.
11-001388	23.13	1.10	0.03	51.00	46.00	X-103	SOLID	N	Y	N	N	Non-Rad TSCA Waste	TSCA WASTE	24-Nov-10	N	USA LAMP & BALLAST RECY.
Totals	**673.57**	**27.66**	**0.78**	**1,485.00**	**1,282.50**											

APPENDIX D

GEOPHYSICAL SURVEY REPORT

ADVANCED GEOLOGICAL SERVICES
3 Mystic Lane
Malvern, PA 19355
(610) 722-5500 (ph.)
(610) 722-0250 (fax)

AGS Reference: 11-187-1

SUBSURFACE SURVEY SERVICES REPORT

Prepared for: Flour-B&W Portsmouth LLC
TOR No.: TR002
Contract No.: PO-0000059

May 24, 2011

Subject: Utility Locating at the Former X-103 Auxiliary Office Building
Portsmouth Gaseous Diffusion Plant
Piketon, Ohio

Advanced Geological Services (AGS) presents this submittal to Flour-B&W Portsmouth LLC (Flour) summarizing the geophysical investigation completed by AGS on May 18, 2011 at the PORTS facility located in Piketon, Ohio. This work was completed in support of the Portsmouth Decontamination and Decommissioning Project.

The objective of the work summarized in this report was to identify and mark out potential utilities located beneath the location of the former floor slab of the X-103 Auxiliary Office Building. The former X-103 building was approximately 50 feet by 200 feet in size. At the time of the investigation, the former building and floor slab had been removed from the site. The investigation area had been re-graded and planted with grass. No visible remnants of the former building were available to verify the location of the former floor slab.

Methods

To achieve the project objective, AGS utilized a combination of the electromagnetic (EM) metal detection method, the radio frequency (RF) utility locating method, and the ground penetrating radar (GPR) method. The investigation area was scanned in a grid pattern to search for any potential utilities that may have been left in place during the demolition of the X-103 building. All identified subsurface features were marked on the ground surface with spray paint and/or pin flags.

Hand-Held Electromagnetic (EM) Metal Detection (MD) Method

The hand-held EM metal detection (MD) method was used to search for metal pipes conduits, cables, and other buried metallic features within the investigation area. The MD method uses the principle of electromagnetic induction to detect shallow buried metal objects. This is done by carrying a hand-held radio frequency transceiver unit above the ground and continuously scanning the surface. A primary coil broadcasts a radio signal from the transmitter. This primary radio signal induces secondary electrical currents in metal objects. These secondary currents in turn produce a magnetic field which is detected by the receiver.

The MD instrument used for this investigation was a Fisher TW-6 pipe and cable locater. This instrument is expressly designed to detect metallic pipes, cables, USTs, manhole covers, and other buried metallic objects. The instrument produces an audible response and significant meter deflections when near a metal object. The peak instrument response occurs when the unit is directly over the object.

The TW-6 is operated in scanning mode, and does not allow for recording of the instrument response. For the present investigation, the investigation area was scanned in an approximate grid pattern to identify potential buried metallic utilities. Identified features were then marked on the ground surface with spray paint and/or pin flags.

Radio Frequency (RF) Utility Locating Methods

The investigation area was inspected using a RF utility locating system to identify and trace potential electrical, telecommunication, water, and other potential identifiable utilities.

AGS utilized a Radiodetection RD4000 utility locating instrument. This instrument consists of a receiver/tracer and a remote transmitter which operates at multiple radio-frequencies (RF) ranging from 8 kHz to 65 kHz. The receiver unit detects the transmitted RF signals as well as standard 60 Hz electrical power lines and broad-band RF signals when operated in passive detection modes. This utility tracing instrument is an analog device which provides visual and audible feedback to the operator when a utility coupled with the transmitted signal is crossed. The transmitter produces a radio-frequency signal in the utility to be traced by either induction coupling or direct hook-up. The receiver output varies an audible pitch and visual feedback depending upon how far the utility is from the receiver. By carefully adjusting the gain of the receiver it is possible to determine the location of the utility and to separate it from adjacent utilities.

The investigation area was scanned using passive 60 Hz and the broad-band RF detection modes to identify potential utilities that may be present. Direct hook-up methods were also used when possible. Identified utilities were marked on the ground surface with spray paint and/or pin flags.

Ground Penetrating Radar (GPR) Method

GPR traverses were completed in a grid pattern to identify any potential utilities within the investigation area.

A Geophysical Survey Systems SIR System 3000 GPR instrument and a 400 megahertz (MHz) antenna were used for remote sensing and imaging of subsurface features within the investigation area. The GPR method is based upon the transmission of repetitive, radio frequency electromagnetic (EM) pulses into the subsurface. When the down-going wave contacts an interface of dissimilar electrical character, it returns to the surface in the form of a reflected signal. This reflected signal is detected by a receiving transducer within the

GPR unit and added to the data file. The GPR anomaly remains prevalent as long as the electrical contrast between media is present and constant. Any lateral or vertical changes in the electrical properties of the subsurface result in an equivalent change in the GPR signature. The system records a continuous image of the subsurface by plotting two-way travel time versus distance traveled along the ground surface. Two-way travel time values are then converted to depths using known soil velocity functions. A scan length of 60 nanoseconds (ns) was used providing a maximum depth of investigation of 10 feet below the ground surface under ideal site conditions. Very wet soil conditions, and loosely compacted clayey soil, limited GPR signal penetration to less than 2 feet below grade at this site. All identified utilities were marked on the ground surface using spray paint and/ or pin flags.

Results and Discussion

The X-103 Auxiliary Office Building had been demolished, and the floor slab removed prior to the arrival of AGS on site. At the time of the investigation, the site had been regraded and planted with grass that was approximately 8 inches high. The ground surface remained irregular from heavy machinery treads and standing water was present over portions of the investigation area.

Figure 1 shows the floor plan of the former X-103 building. The locations of an active underground electrical line located parallel to the north wall of the former X-103, and the northern wall of the Electrical Components Building are also shown on Figure 1 to provide reference points with regards to the location of the former X-103 building. The active electric line shown on Figure 1 was located and marked on site with red spray paint and red pin flags.

The location of the former X-103 building and the surrounding surrounding area were scanned with using EM MD, RF, and GPR methods. The EM MD instrument identified a south to north oriented pipe located near the central portion of the former X-103 building (Figure 1). The identified pipe also has a Tee that extends westward beneath the former X-103 building. A vertical metal pipe, approximately 8 inches in diameter was observed at the southern side of former X-103, that corresponds with utility isolation point SSU-0005 shown on the original Flour base map of the X-103 floor plan (drawing no. SK-103-10-001, Rev. A).

AGS connected the RF transmitter to the pipe at isolation point SSU-0005, and traced the pipe with the RF receiver. The response from the RF instrument indicated that the pipe identified using the EM MD method was the same pipe that was directly connected to isolation point SSU-005. The location of the identified pipe was marked on site with spray paint and pink pin flags. Based on the RF response, the pipe is buried approximately 36 inches below existing grade. The location and configuration of the identified pipe is shown on Figure 1. This pipe is believed to be a former storm sewer pipe.

No additional utilities were identified beneath the former X-103 building or in the area surrounding the X-103 building. Depth penetration of the GPR signal was limited to less than 2 feet below grade because of existing soil and moisture conditions, as well as signal scattering caused by the irregular ground surface. Therefore, it is possible that additional utilities could exist beneath the former X-103 building that could not be detected.

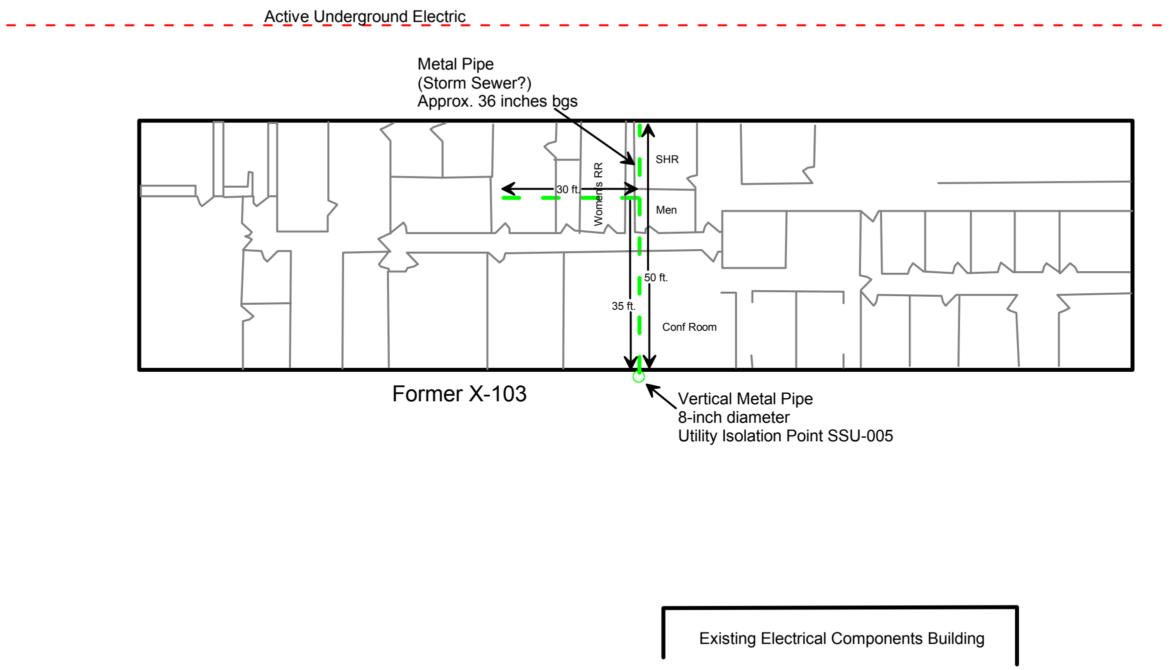
In summary, one potential storm sewer pipe was detected beneath the former X-103 building, which was marked on site with spray paint and pink pin flags. No other utilities were detected using the EM MD, RF, or GPR methods. Because of the limited depth of penetration of the GPR signal, it is possible that additional abandoned utilities could be present beneath the former floor slab area that could not be detected. Upon completion of field activities, the results of the investigation were reviewed and discussed with the on site Flour representative.

Closing

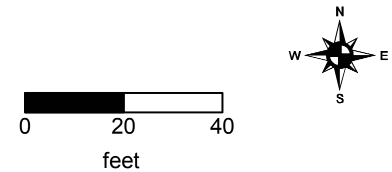
All geophysical data and field notes collected as a part of this investigation will be archived at the AGS office. The data collection and interpretation methods used in this investigation are consistent with standard practices applied to similar geophysical investigations. The correlation of geophysical responses with probable subsurface features is based on the past results of similar surveys although it is possible that some variation could exist at this site. Due to the nature of geophysical data, no guarantees can be made or implied regarding the presence or absence of additional objects or targets beyond those identified.

Prepared by: Donald Jagel, P.G.
Senior Geophysicist

attachment: Figure 1.



NOTES:
1) This map was derived from the plan provided by Flour (drawing no. SK-103-10-001, rev. A).
2) The investigation area included the location of the former X-103 building and an area at least 10 feet beyond the outer walls of the former X-103 building. The area was investigated using the RF, EM metal detection (MD), and GPR methods.
3) The items shown on this figure may not be all inclusive. AGS does not warrant the fact that additional buried features/utilities may be present which could not be identified by AGS personnel during this investigation.



11-187-1 dj 5/23/2011

Figure 1
Site Map Showing Floor Plan of the Former X-103 Building and Identified Utilities

Flour-B&W Portsmouth LLC
Forrmer X-103 Building Area
Portsmouth Gaseous Diffusion Plant
Piketon, Ohio

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Document Title or Identification: Removal Action Completion Report for the X-103 Auxiliary Office Building at the Portsmouth Gaseous Diffusion Plant, Piketon, Ohio

Original Author(s) / Organization: USDOE

Technical Editor(s) /Organization: ______

Format: ☒ Document: 51 Total # Pages ☐ Transparencies / Presentations
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